

TABLE OF CONTENTS

COMMERCIAL ROOF SYSTEMS SPECIFICATIONS

I. TABLE OF CONTENTS

II. CERTAINTED COMMERCIAL ROOFING

III. WARRANTY INFORMATION

- Warranty Overview and Fee Schedule (comm-045)
- Roof Maintenance Program Inspection Report (comm-046)
- Asphaltic Membrane Limited Warranty on Materials (comm-365)
- Asphaltic Membrane Limited Warranty on Systems (comm-209)
- Asphaltic Membrane NDL Limited Warranty Sample (comm-056)
- Asphaltic Membrane Full System NDL Limited Warranty Sample (comm-277)
- FlintCoat® Limited Coating Warranty (comm-287)
- FlintBoard® Limited Insulation Warranty (comm-268)
- SmartFlash® Limited Warranty (comm-337)
- Enhanced Wind Warranty Endorsement Application (comm-361)
- LiveRoof Overburden Warranty (comm-380)
- Roof Membrane Enhanced Wind Warranty Endorsement Sample (comm-385)

IV. GENERAL RECOMMENDATIONS

- 1.0 CertainTeed Commercial Roofing Products Policy
- 2.0 Limited Warranties
- 3.0 Roof Decks
- 4.0 Roof Insulation
- 5.0 Re-cover
- 6.0 Materials: Storage, Handling and Safety Data Sheets
- 7.0 Flintglas® & Flintlastic® Hot Asphalt Mopping Application
- 8.0 Flintlastic® Torching Application
- 9.0 Flintlastic® Cold Process Application
- 10.0 Flintlastic® Self-Adhering (SA) Application
- 11.0 Application Safety and Equipment Policy
- 12.0 Temporary Roofs
- 13.0 Cold Weather Precautions
- 14.0 Coatings and Surfacing
- 15.0 Nailable Substrate Fastener Data

SYSTEM SPECIFICATIONS

V. SA SYSTEMS

- Specification Nomenclature
- SA Warranty Matrix
- SA-C-2-S
- SA-C-3-S
- SA-I-2-S
- SA-I-3-S
- SA-IN-2-S
- SA-IN-3-S
- SA-IN-4-S
- SA-N-2-S
- SA-N-3-S
- SA-N-4-S

VI. APP SYSTEMS

- Specification Nomenclature
- APP Warranty Matrix

Torch

- APP-C-2-T
- APP-C-3-T
- APP-C-4-T
- APP-I-2-T
- APP-I-3-T
- APP-I-4-T
- APP-IN-2-T
- APP-IN-3-T
- APP-IN-4-T
- APP-N-2-T
- APP-N-3-T
- APP-N-4-T

CertaFast Specification

- APP-IN-2-CF

VII. SBS SYSTEMS

- Specification Nomenclature
- SBS Warranty Matrix

Hot Asphalt

- SBS-C-2-A
- SBS-C-3-A
- SBS-C-4-A
- SBS-I-2-A
- SBS-I-3-A
- SBS-I-4-A
- SBS-IN-2-A
- SBS-IN-3-A
- SBS-IN-4-A
- SBS-N-2-A
- SBS-N-3-A
- SBS-N-4-A

SBS(G)-C-2-A

SBS(G)-I-2-A

SBS(G)-IN-2-A

SBS(G)-N-2-A

Torch Welded

- SBS-C-2-T
- SBS-C-3-T
- SBS-C-4-T
- SBS-I-2-T
- SBS-I-3-T
- SBS-I-4-T
- SBS-IN-2-T
- SBS-IN-3-T
- SBS-IN-4-T
- SBS-N-2-T
- SBS-N-3-T
- SBS-N-4-T

CertaFast Specification

SBS-IN-2-CF

Cold Process

- SBS-C-2-C
- SBS-C-3-C
- SBS-C-4-C
- SBS-I-2-C
- SBS-I-3-C
- SBS-I-4-C
- SBS-IN-2-C
- SBS-IN-3-C
- SBS-IN-4-C
- SBS-N-2-C
- SBS-N-3-C
- SBS-N-4-C

VIII. BUR SYSTEMS

- Specification Nomenclature
- BUR Warranty Matrix
- BUR(G)-C-4-A
- BUR(G)-I-4-A
- BUR(G)-N-3-A
- BUR(G)-N-4-A
- BUR(M)-C-4-A
- BUR(M)-C-5-A
- BUR(M)-I-4-A
- BUR(M)-I-5-A
- BUR(M)-N-4-A
- BUR(M)-N-5-A
- BUR(S)-C-4-A
- BUR(S)-I-4-A
- BUR(S)-N-4-A

TABLE OF CONTENTS

COMMERCIAL ROOF SYSTEMS SPECIFICATIONS

IX. CONSTRUCTION DETAILS

Introduction

Foreword

CT-01	Edge Flashing
CT-01A	Edge Flashing - Alternate
CT-01B	Edge Flashing - Gutter
CT-02	Edge Flashing - BUR, Gravel Stop
CT-03	Curb Flashing
CT-04	Curb Equipment Flashing
CT-05	Wood Area Divider Flashing
CT-06	Base Flashing and Wall Covering on Wood Parapet Wall
CT-06A	Base Flashing and Wall Covering on Concrete/Masonry Parapet Wall
CT-07	Base Flashing on Concrete/Masonry Wall with Metal Counterflashing
CT-08	Base Flashing and Wall Covering on Steel or Stucco Wall with "Z" Bar
CT-09	Base Flashing on Parapet Wall, Inside Corner
CT-10	Base Flashing on Parapet Wall, Outside Corner
CT-11	Through-Wall Scupper Flashing
CT-12	Drain Flashing
CT-13	Pipe Flashing - Lead or Sheet Metal
CT-13A	Pipe Flashing - Lead or Sheet Metal - Surface Mounted (Retrofit)
CT-14	Pipe Flashing - Lead or Sheet Metal - BUR Only
CT-15	Penetration Pan (Pitch Pan) Flashing
CT-16	Multi-Piping through Roof Deck Flashing
CT-17	Mechanical Equipment Stand Flashing
CT-18	Pipe Roller Support Flashing
CT-19	Low Profile Flexible Expansion Joint Flashing
CT-19A	Raised Flexible Expansion Joint Flashing
CT-19B	Roof to Wall Expansion Joint Flashing
CT-20	Roof Vent Flashing
CT-21	Seismic Strap Flashing
CT-22	End Lap Detail
CT-23	Steep to Low-Slope Roof Transition Flashing
CT-24	Mansard Roof Transition Flashing
CT-25	Termination Bar Flashing
CT-26	Hot Pipe Flashing
CT-27	Structural Member Thru Roof Deck Flashing
CT-28	Lightning Terminal Flashing
CT-29	Back Nailing - Insulated or Non-Nailable Substrates
CT-29A	Back Nailing - Nailable Substrates
CT-30	Vapor Retarder
CT-30A	Vapor Retarder - Alternate
CTL-01A	SmartFlash® - One ply Base Flashing with Cut-in Reglet
CTL-01B	SmartFlash - One ply Base Flashing with Counterflashing

CTL-03	SmartFlash - Parapet Wall with Metal Coping Cap
CTL-15	SmartFlash - Field-Fabricated Outside Corner Flashing
CTL-16	SmartFlash - Field-Fabricated Inside Corner Flashing
CTL-17	SmartFlash - Door Sill Flashing
CTL-18	SmartFlash - Tie-In to Modified Bitumen/BUR Membrane
CTL-18A	SmartFlash - Tie-In to EPDM Membrane
CTL-19	SmartFlash - Tie-In to Modified Bitumen/BUR Membrane with Cut-in Reglet
CTL-20	SmartFlash - Tie-In to Modified Bitumen/BUR Membrane
CTL-21	SmartFlash - Field-Fabricated Pipe Penetration Flashing
CTL-23	SmartFlash - Irregular Penetration Angle Flashing
CTL-24	SmartFlash - Wide Flange Flashing
CTL-25	SmartFlash - Irregular Penetration Uni-Strut Channel Flashing
CTL-27	SmartFlash - Curb/Pad Encapsulation Flashing
CTL-28	SmartFlash - One ply Curb Flashing

APPENDIX

Appendix 1 - Insulation Fastening Guide

Appendix 2 - Flashing Specifications

Appendix 3 - Product and System Selection Guide

X. TECHNICAL DATA SHEETS

XI. TECHNICAL BULLETINS

FlintBoard® Roof Insulation Application

FlintLastic® SA Low-Slope Substrate Guidelines

Self-Adhered Flintlastic® SA Cap Sheet Competitive Audit

Self-Adhered Wind Uplift Performance Comparison

Staining

Woodblocking

Wind Uplift Resistance

XII. SAFETY DATA SHEETS

XIII. CODE APPROVALS

CERTAINTEED COMMERCIAL ROOFING

EXPERTS IN COMMERCIAL ROOFING

CertainTeed is a leading manufacturer of commercial and residential roofing products and a division of Saint-Gobain, the world's largest manufacturer of building materials. Saint-Gobain ranks among the world's top 100 industrial corporations, operating through a global network of businesses in 67 countries. A quality roof depends on two essential elements: excellent materials and superior workmanship. CertainTeed has been one of North America's leading roofing material manufacturers for more than 100 years.

OUR HISTORY

Since its inception in 1904 as the General Roofing Manufacturing Company, CertainTeed LLC has been an innovator in the commercial roofing business. From introducing its organic rag felt built-up systems in 1904 to pioneering Certaglas fiberglass roofing systems in 1980, CertainTeed has provided quality, durable, sustainable membrane roofing systems with proven performance. The tradition extends back to 1888 through the acquisition of companies such as GS Roofing Products (GENSTAR-FlintKote) and Celotex Roofing (Barrett and Phillip Carey), making CertainTeed a forerunner in the bituminous roofing market.

Today, under its Flintlastic® label, CertainTeed offers a complete line of hot asphalt, cold process, torch welded and self-adhered systems providing a wide array of APP and SBS modified bitumen roofing choices and Flintglas® built-up roofing options for the applicator and the designer. Accessory products such as FlintBoard® insulation, FlintFast® fasteners, FlintBond® adhesives, FlintCoat® coatings, FlintEdge™ metal, FlintPatch® repair cement, FlintPrime® primers, and SmartFlash® liquid-applied flashing complement this offering to provide total system protection that you can depend on. CertainTeed's innovative CoolStar® granulated cap sheets offer the latest technology in reflective roofing materials to meet the most stringent of energy conservation and environmental codes.

INNOVATIVE SOLUTIONS

CertainTeed leads the way in smart, energy-saving products that help you meet new building standards. For instance, our CoolStar products with solar-reflective surfaces meet ENERGY STAR® requirements and offer several installation advantages.

WORKMANSHIP IS KEY

To help assure the best possible workmanship for your commercial roof installation, CertainTeed has established the Gold and Silver Star Contractor programs. These programs offer the building owner a selection of credentialed roofing contractors who have met the strictest criteria relating to financial credibility, workmanship history and sound business practices, including proper licenses and appropriate insurance.

CERTAINTEED COMMERCIAL ROOFING

EXPERTS IN COMMERCIAL ROOFING

CENTRALIZED TECHNICAL ASSISTANCE – TO SERVE YOU

CertainTeed's Commercial Territory Managers are trained technical experts available to assist customers at the local level regarding products, materials and systems. In addition to our trained field sales staff, CertainTeed offers its centralized **Commercial Roofing Technical Services** (Tech Services) to assist the contractor and building owner regarding system and construction detail installation, code and fire approvals and CertainTeed warranty information. To contact Commercial Roofing Technical Services, call 800-396-8134 Ext. 2, or email rpg@saint-gobain.com.

BUR (BUILT-UP ROOFING)

Traditional built-up roofing (BUR) derives its name from the building of a roof on-site using layers of base sheet, interply sheets and cap sheet or other surfacing such as gravel or liquid coating. Hot asphalt (bitumen) is the bonding and waterproofing agent between layers. BUR is suitable for most low-slope roofing applications. The higher the quality of the BUR materials and asphalt used and the greater the number of plies (and separate asphalt moppings), the more superior the roof system.

APP AND SBS MODIFIED BITUMEN

In the 1970s, technological advances in asphalt sciences led to the development of modifiers such as APP (atactic polypropylene) and SBS (styrene-butadiene-styrene) which, when added to unblown (unoxidized) asphalt, impart either plastic (APP) or rubber (SBS) characteristics. These additives provide enhanced performance characteristics to traditional asphalt. When coupled with reinforcements, such as polyester (superior elongation and puncture resistance) or fiberglass (high tensile strength and fire resistance), they create high-performance roof membranes.

APP modified bitumen membranes are self-adhering when heated using a roofing torch. SBS modified bitumen membranes can be formulated for torch application, but are more commonly applied using hot asphalt or cold SBS modified bitumen adhesive. The result is a multi-layer system with significantly enhanced performance capabilities. Continuing improvements in technology have also resulted in self-adhering SBS roof membranes.

When an SBS or APP cap sheet is combined with traditional BUR base sheets and interply sheets, the result is a hybrid roof offering the best of both systems, multiple plies and superior performance and longevity.

SELF-ADHERING MODIFIED BITUMEN ROOFING SYSTEM

Flintlastic SA is a premium, self-adhering modified bitumen roofing product line comprised of NailBase, PlyBase, MidPly, Cap and Cap FR (both Caps available in CoolStar highly reflective granules), supporting a variety of system specifications, building and warranty requirements.

CERTAINTEED COMMERCIAL ROOFING

EXPERTS IN COMMERCIAL ROOFING

Flintlastic SA delivers the reliable protection of traditional modified bitumen roofing, plus:

- No kettle fumes or burn risk
- No torch or risk of fire
- No or low VOCs (from cold adhesive)
- No building occupant disturbance
- No mess or side lap bleed out
- Reduced training requirement
- Reduced insurance requirement
- Superior granule embedment when compared to other self-adhering cap sheets
- Superior substrate and inner-system adhesion when compared to other self-adhering systems

Flintlastic SA products can be used in various system configurations to meet building, performance and warranty requirements. For projects on nailable substrates, a starting layer of Flintlastic SA NailBase can be capped with Flintlastic SA Cap (FR) with the option of including an interply layer of either Flintlastic SA PlyBase or Flintlastic SA MidPly. For projects on non-nailable substrates, Flintlastic SA PlyBase or MidPly may be directly adhered as the first layer.

COOL ROOF SOLUTIONS FROM CERTAINTEED

CertainTeed's CoolStar membranes offer high solar reflectivity for reduced energy load, reduced thermal strain on the roof system and increased occupant comfort. The core granule is manufactured with the same chemistry as that of traditional roofing granules that have been used successfully for over a century, demonstrating excellent durability.

CERTASPEC®

CertaSpec, a web-based specification-writing and submittal tool, aids contractors and specifiers in system selection and proposal generation, including LEED documentation. All documents are as current as the CertainTeed website content, which is continuously updated and enhanced. CertaSpec provides you with:

- Proposal letter
- Short specs
- Technical data sheets
- Installation information
- Warranty specimens
- LEED product information
- Construction details

Please visit <http://certaspec.certainteed.com>

WARRANTY INFORMATION

COMMERCIAL ROOFING SYSTEMS

TABLE OF CONTENTS

Warranty Overview and Fee Schedule (comm-045)
Roof Maintenance Program Inspection Report (comm-046)
Asphaltic Membrane Limited Warranty on Materials (comm-365)
Asphaltic Membrane Limited Warranty on Systems (comm-209)
Asphaltic Membrane NDL Limited Warranty Sample (comm-056)
Asphaltic Membrane Full System NDL Limited Warranty Sample (comm-277)
FlintCoat® Limited Warranty (comm-287)
FlintBoard® Limited Warranty (comm-268)
SmartFlash® Limited Warranty (comm-337)
Enhanced Wind Warranty Endorsement Application (comm-361)
LiveRoof Overburden Warranty (comm-380)
Roof Membrane Enhanced Wind Warranty Endorsement Sample (comm-385)

WARRANTY OVERVIEW

CertainTeed offers standard warranty durations up to 25 years. Additionally, Gold Star Contractors can increase warranty durations by 25% by engaging in an Integrity Maintenance Coverage agreement with their client. CertainTeed offers four warranty options: Asphaltic Membrane Limited Warranty on Materials, Asphaltic Membrane Limited Warranty on Systems, Asphaltic Membrane No Dollar Limit (NDL) Limited Warranty and Asphaltic Membrane Full System NDL Limited Warranty.

WARRANTY DURATIONS & SYSTEM SPECIFICATIONS

CertainTeed warranty durations are based on a combination of system specification and product selection. For example, CertainTeed Specification APP-C-2-T lists multiple base sheet and cap sheet options. Per the specification, all base sheets would be fully adhered, either in hot asphalt, torch-welded or self-adhered. Per the APP Warranty Duration Matrix, a pairing of All Weather/Empire Base Sheet with Flintlastic GTA carries a 12-year warranty duration. However, a pairing of Black Diamond Base Sheet with Flintlastic GTA carries a 15-year warranty duration. Both of these configurations are options within APP-C-2-T. Further, the addition of two layers of FlintBoard roof insulation to a Black Diamond Base Sheet – Flintlastic GTA roof system increases the warranty duration to 20 years and would now be CertainTeed Specification APP-I-2-T. It's important to understand that each CertainTeed Specification allows for various base, ply and cap sheet configurations and, as such, warranty durations associated with an individual specification will vary.

Roll Goods Product and System Warranties

	Limited Warranty on Materials	Limited Warranty on Systems	NDL Limited Warranty	Full System NDL Limited Warranty
Contractor Requirements			Silver or Gold Star Credential	
Coverage	Warranty covers leaks caused by manufacturing defects in CertainTeed products only		Warranty covers leaks caused by manufacturing defects in CertainTeed products and/or workmanship	Warranty covers leaks caused by manufacturing defects in CertainTeed products and/or approved partner-brands and/or workmanship
Obtain	certainteed.com/commercial-roofing/commercial-roofing-warranties/		Application submitted through ctndl.com	

Complementary and Accessory Stand-alone Warranties

	Enhanced Wind Warranty Endorsement	FlintCoat® Limited Warranty	FlintBoard® Limited Warranty	SmartFlash® ONE/ SmartFlash Limited Warranty
Contractor Requirements	Silver or Gold Star Credential			
Coverage	Warranty covers roof system detachment in accordance with primary CertainTeed Warranty	Warranty covers manufacturing defects in CertainTeed products only	Warranty covers thermal insulation R-value in FlintBoard products	Warranty covers leaks caused by manufacturing defects in CertainTeed products only
Obtain	Apply through Commercial Roofing Tech Services	certainteed.com/commercial-roofing/commercial-roofing-warranties/		

LIMITED MATERIAL AND SYSTEM WARRANTIES

There are no fees associated with a Limited Warranty on Materials or a Limited Warranty on Materials.

NDL AND FULL SYSTEM NDL LIMITED WARRANTIES

Subject to CertainTeed published requirements, NDL Limited and Full System NDL Limited Warranties are available to CertainTeed approved contractors based on the schedule below. NDL Warranties are fully transferrable and subject to a \$500* warranty transfer fee (subject to change at any time) and inspection.

NDL and Full System NDL Limited Warranty Fee Schedule

Built-Up Roofing (Non-Modified) Specifications		Modified Bitumen Roofing Specifications	
Warranty Duration	Warranty Fee*	Warranty Duration	Warranty Fee*
10 Years	\$6.00 per square (\$600 minimum)	10 and 12 Years	\$4.00 per square (\$400 minimum)
15 Years	\$10.00 per square (\$1,000 minimum)	15 Years	\$7.50 per square (\$750 minimum)
20 Years	\$15.00 per square (\$1,500 minimum)	20 Years	\$12.50 per square (\$1,250 minimum)
		25 Years**	\$15.00 per square (\$1,500 minimum)

**Subject to change at any time.*

***Subject to additional requirements. Contact Tech Services at 1-800-396-8134 x2.*

WIND WARRANTY FEE SCHEDULE

Wind endorsement fee schedule for NDL Warranties, minimum 100 sq. If Professional Engineering Stamp is required, there is an additional \$1,000 fee. Contact Tech Services at 1-800-396-8134 Ext. 2.

55 – 80 mph	\$1.00 per square
81 – 90 mph	\$2.00 per square
91 – 100 mph	\$4.00 per square
101 – 110 mph	\$8.00 per square
111 – 120 mph	\$10.00 per square
121 – 135 mph	\$15.00 per square

ACCESSORY STAND-ALONE WARRANTIES

There are no fees associated with a FlintCoat®, FlintBoard® or SmartFlash® stand-alone warranty.

LIVE ROOF OVERBURDEN WARRANTY FEE

\$25.00 per square, minimum 100 sq.



CertainTeed

ROOFING • SIDING • TRIM • DECKING • RAILING • FENCE • GYPSUM • CEILINGS • INSULATION

20 Moores Road Malvern, PA 19355 Professional: 800-233-8990 Consumer: 800-782-8777 certainteed.com

© 11/19 CertainTeed, Printed in the USA, Code No. COMM-045

Roof installed by: _____

Warranty # _____

The following information is designed to assist owners in establishing a regular and beneficial roof inspection and maintenance program. This important area of responsibility for the building owner can provide many long-term benefits, including extended life expectancy of the roofing system, reduced average in-place cost, prevention of major deterioration resulting from minor problems and eventually, reduced roof system replacement cost. Failure to properly maintain the roof system voids all CertainTeed Commercial Roofing Limited Warranties.

Roof Maintenance Guidelines

All roofs require regular inspections and periodic maintenance to achieve their expected life. Roofs should be inspected at least twice yearly, in the spring and fall. Additionally, all roofs should be inspected after any severe weather or storms. The roofing contractor who installed the roof membrane, in conjunction with the building owner's maintenance personnel, should perform these inspections. Leaks occur most often at flashings, pitch pans, gravel stops, and other penetrations. Pay special attention to these areas. All components of the roof are the owner's responsibility to maintain.

General – One of the keys to avoiding roof damage is limiting access to the roof. Allow only authorized personnel on the roof who understand good roof access procedures and precautions. Bag and remove all debris from the roof. Keep grease and oil off of the roof. Clean and remove any liquid deposits immediately. Do not allow foot traffic on the roof in very hot or very cold weather. Do not allow the installation of television or radio antennas, satellite dishes or other mechanical equipment without notifying CertainTeed for approval and for consultation about the methods and details for these installations.

Roof Drains – CertainTeed requires positive drainage. Owners must keep roof drains and the surrounding areas free of debris to allow for proper drainage. Maintain proper attachment of drain clamping rings.

Metal Flashing – Start with a visual examination looking for areas of damage or rust. Ensure that the flashing has remained properly attached and sealed. Repair or replace areas with damage, poor caulking, and all loose areas including counterflashing, coping, seams and/or joints.

Pitch Pans – Keep pitch pans full at all times. Examine and repair the metal pan assembly when necessary.

Rooftop Equipment – Qualified roofing personnel should accompany the equipment installation and/or service employees. If this is not practical, have qualified roofing personnel inspect the area after the equipment installation and/or service employees have completed their work. Regularly check and maintain the condition of all rooftop equipment. Ensure that no substances from the equipment are being deposited on the roof, and if deposits are present – clean immediately. Check equipment flashing for proper condition.

Roof Coating – Visually inspect for signs of deterioration. Maintenance or replacement completed by a roofing professional is essential. Coating life is affected by a variety of factors including climate and environment.

Other – The above list reflects only the most common components found on roof systems; it is not all-inclusive. Contact CertainTeed for additional information.

Owner Inspection and General Recommendations

- A. Utilize roofing professionals or thoroughly trained maintenance personnel for roof-related issues.
- B. Owners should file all job records, drawings, and specifications for future reference. Contract with a roofing contractor authorized by CertainTeed to set up a regular inspection and roof maintenance schedule. Record maintenance procedures as they occur. Log all roof access times and other trades working on the roof, in case damage should occur. Report damage as soon as it occurs, so repairs may be scheduled and executed as soon as possible.
- C. Make more frequent inspections (six times per year) on buildings that house manufacturing facilities that evacuate or exhaust debris onto the roof.
- D. Inspect the exterior of the building for settlement or movement. Structural movement may result in splits in the roof membrane.
- E. Repairs should be performed as soon as needed – owners should not allow a nuisance leak to develop into a major problem, degrading insulation and destroying a large portion of the roof assembly. While a roofing contractor authorized by CertainTeed should perform repairs and maintenance work, the owner can help maintain the roof by ensuring that minor clean-up and maintenance procedures are performed (e.g., regular checking and cleaning of debris from roof and around drains).
- F. Notify CertainTeed immediately after a roof leak occurs. If possible, note conditions resulting in leakage. Heavy or light rain, wind direction, temperature, and the time of year that the leak occurs are all important clues to tracing roof leaks. Note whether the leak stops shortly after each rain or continues to drip until the roof is dry. If the owner is prepared with the facts, the diagnosis and repair of roof problems can proceed more rapidly.
- G. In some emergency situations, owner-applied temporary patches may be made to stop leaks to minimize property loss. Except for certain emergency situations, owners should not attempt roof repairs. The puncturing of a blister or the spreading of a liquid-applied coating or bituminous cement may only cover up evidence needed to ascertain the real problem. For your convenience, we have provided a basic inspection form on the reverse side of this page that addresses several critical areas of the roofing system.

Date: _____ Inspected By: _____

	<p>ROOF PLAN LEGEND</p> <ul style="list-style-type: none"> Roof Drain Scupper Firewall Chimney Skylight Scuttle or hatch Penthouse Ventilator/Fan Vent Pipe Air Conditioner Cooler Pitch Pocket Saddle Hip Ridge Valley Pipe or Conduit Screen Support/Fence Expansion Joint Metal Edging - Single-line perimeter Parapet Wall - Double-line perimeter Other _____
--	--

Owner-Based Maintenance Requirements

	No Problems	Maintenance Required	Not Applicable
1. Edge Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Counter Flashings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Expansion Joints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Pitch Pans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Drains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Scuppers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Skylights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Coping Covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Vents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Flues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Antennae	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. HVAC Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Sign Supports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Coatings/Toppings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments _____

Condition of Roof Membrane

Surface Condition	Yes	No
Any blisters, splits, buckles or punctures?	<input type="checkbox"/>	<input type="checkbox"/>
Any bare spots, displaced gravel, thin coating or severe granule loss?	<input type="checkbox"/>	<input type="checkbox"/>
Reflective coating in good condition?	<input type="checkbox"/>	<input type="checkbox"/>
Any evidence of ponding?	<input type="checkbox"/>	<input type="checkbox"/>
Any evidence of residue deposits or foreign contamination?	<input type="checkbox"/>	<input type="checkbox"/>
Are A/C condensation lines extending into drains?	<input type="checkbox"/>	<input type="checkbox"/>
Any evidence of traffic or physical damage?	<input type="checkbox"/>	<input type="checkbox"/>
Any evidence of wet insulation?	<input type="checkbox"/>	<input type="checkbox"/>

Comments _____

General Conditions

Any building or structural movement?	<input type="checkbox"/>	<input type="checkbox"/>
Any deflection or sagging of deck?	<input type="checkbox"/>	<input type="checkbox"/>
Any alterations, additions or new penetrations?	<input type="checkbox"/>	<input type="checkbox"/>
Any change in building usage?	<input type="checkbox"/>	<input type="checkbox"/>

Comments _____

Copies of this form should be made and used in your semi-annual roof inspections.

Owner:
Owner Address:
Owner Phone:
Description of Building Use:
Building Address:
CT Product(s) Used:
Roof Completion Date:
Applicator:
Applicator's Address:
Applicator's Phone:
of Squares:
Warranty Expiration Date:

COVERAGE

CertainTeed (CT) warrants to the original building owner (Owner) that the Product described above, will remain free of manufacturing defects until the Warranty Expiration Date.

Should the product prove to be defective in its manufacture during the Warranty Period, CT shall, during the first year and at its sole discretion, provide the appropriate replacement materials or refund the original cost of the Product determined by CT to be defective. After the first year, CT's maximum liability is the original cost of the Product used on the roof reduced by 8.3% for 12-year warranties and 10% for 10-year warranties during each subsequent year, less any costs previously incurred by CT for replacement.

Note: The Owner is responsible to repair leaks promptly to avoid water damage, including mold growth.

EXCLUSIONS FROM COVERAGE

This Limited Warranty does not cover leaks, damages or injuries of any type, including, but not limited to, damage to roof insulation/cover boards, roof decks, roof membrane or other bases over which Product is applied and attributable directly or indirectly to any of the following:

1. Natural disasters, such as falling objects, cyclones, hurricanes, tornadoes, or other winds or gusts exceeding Force 7 on the Beaufort scale, earthquakes, lightning, hail or fire;
2. Misuse, abuse, falling objects, tools, foot traffic, or equipment or sign installation;
3. Clogged drains or lack of adequate drainage that does not promptly and readily remove water from the roof;
4. Ponding water (as defined by the National Roofing Contractors Association);
5. Settlement, cracking, warping, expansion, contraction, deflection or other movement of the building structure;
6. Improper installation of Product;
7. Failure to maintain Product as required under the Commercial Roof Maintenance Program;
8. Mold and other damage caused by water entering building; and
9. Any other damage not attributable to a manufacturing defect of the Product.

This Limited Warranty does not cover damages caused by leaks. This Limited Warranty applies to material only and does not include installation or labor costs of any kind. The existing roof deck has not been inspected by CT and is NOT part of this Limited Warranty.

ROOF MAINTENANCE

This Limited Warranty is not a maintenance agreement or an insurance policy. Routine inspections and maintenance of the roof system must be completed by the Owner on a regular basis and are the Owner's responsibility. Inspections by Owner shall take place at least on a semi-annual basis and shall be documented. Periodic inspections are the Owner's responsibility and shall include such things as making minor repairs, cleaning off debris, cleaning filters and gutters, unclogging drains and removing standing water. Lack of regular maintenance shall void this Limited Warranty. For specific information on roof maintenance requirements please visit our website at www.certainteed.com.

UNAPPROVED REPAIRS, ALTERATIONS, DELETIONS OR ADDITIONS

All repairs, alterations, deletions or additions to any aspect of the roof that affects the Product or any material contiguous thereto must have prior written approval of CertainTeed Roofing Warranty & Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134 ext. 2. If Owner, without prior written consent of CT, makes or permits any repairs, alterations, deletions or additions to the roof that affect the Product, all of CT's obligations, duties and coverage under this Limited Warranty will terminate and the Limited Warranty will be voided.

NOTICE OF CLAIMS

Any claim or request for CT to perform under this Limited Warranty must be made by Owner in writing to the above listed address or by visiting www.ctroof.com within thirty (30) days of discovery of the defect, and Owner must send proof of purchase and samples that demonstrate the alleged manufacturing defect to CT's Technical Services Department. This notice of claim must include a general description of the alleged defect as well as photographs. Owner shall grant access to the entire roofing system as necessary for CT to investigate the claim. If access is not granted, CT shall have the right to determine, at its sole discretion, that this Limited Warranty is void as to that portion of the roof to which access is denied. Contract or invoice from roofer for service, product or work completed does not constitute Proof of Purchase of CT products. Original Proof of Purchase is required and best obtained from the place of purchase. Copies are not acceptable. Failure to notify CT within thirty (30) days shall relieve CT of any obligation under this Limited Warranty. Notice of claim to your contractor does not constitute notice to CT.

NOTE: In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, Owner may make essential temporary repair(s) performed by a qualified roofer. CT will only reimburse Owner for essential temporary repair expenses of Product that would have been covered under this Limited Warranty, excluding labor costs.

TRANSFERABILITY

This Limited Warranty may be transferred to one subsequent owner only if CertainTeed Roofing Warranty & Technical Services Department is notified at the above listed address within thirty (30) days of real estate title transfer. If it is determined at CT's sole discretion that the roof is in a state of poor maintenance or in disrepair, CT reserves the right to reject the transfer and void this Limited Warranty.

EXCLUSIVE WARRANTY AND LIMITATIONS OF REMEDIES

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTY AND SOLE REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTY AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES, WARRANTIES AND REPRESENTATIONS, WHETHER WRITTEN, ORAL, IMPLIED BY STATUTE, AT LAW OR IN EQUITY, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR JURISDICTIONS MAY NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR MAY DETERMINE THE PERIOD OF TIME FOLLOWING THE SALE THAT A PURCHASER MAY SEEK A REMEDY UNDER IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO PROVIDING REPLACEMENT PRODUCT OR REFUNDING THE ORIGINAL COST OF THE DEFECTIVE PRODUCT AS SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY DAMAGE TO THE PROPERTY, THE BUILDING OR ITS CONTENTS, OR FOR INJURY TO ANY PERSONS, THAT MAY OCCUR AS A RESULT OF THE USE OF CERTAINTEED'S PRODUCTS OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR JURISDICTION DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN NO EVENT SHALL CERTAINTEED'S TOTAL LIABILITY ARISING OUT OF OR RELATED TO THE PRODUCT COVERED UNDER THIS LIMITED WARRANTY EXCEED THE ORIGINAL PURCHASE PRICE OF THE PRODUCT TO THE OWNER OF THE PRODUCT THAT WAS ORIGINALLY INSTALLED. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

MODIFICATIONS TO LIMITED WARRANTY

Except as noted herein, this Limited Warranty may not be modified, altered or expanded by anyone, including product distributors, dealers, sellers, installers and/or CertainTeed field representatives. Only CertainTeed Roofing Warranty & Technical Services Department is authorized to modify coverage provided by this Limited Warranty. Issuance of this Limited Warranty or review or inspection of plans, the building or product application by a CT representative does not waive any exclusions or conditions of this Limited Warranty. Application of the Product materials that deviates from CT's Commercial Roof Systems Specifications manual voids coverage, unless prior written approval is provided by CertainTeed Roofing Warranty & Technical Services Department.

INSPECTION

CT does not practice engineering or architecture. Issuance of this Limited Warranty or any roof inspections conducted by CT or its authorized agent, do not constitute an approval of the roof, the roof design plans or specifications, or the construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by Owner or Owner's professional. Any roof inspections are solely for the benefit of CT and do not constitute any approval, representation or warranty that the roof meets building code standards.

Warranty Chart

Warranty Period in Years

Flintlastic® STA	10
Flintlastic STA Plus	15
Flintlastic GTA	12
Flintlastic GTA-FR	12
Flintlastic FR Cap 30	12
Flintlastic FR Cap 30 T	12
Flintlastic FR-P	12
Flintlastic Premium FR-P	12
Flintlastic GMS	12
Flintlastic GTS-FR	12
Flintlastic SA Cap (FR)	12

This Limited Warranty applies to product installed in 2020

Owner:

Owner Address:

Building Address:

of Squares:

CT Product Specification No:

Description of Building Use:

Applicator:

Roof Completion Date:

Applicator's Address:

Applicator's Phone:

Warranty Expiration Date:

10-Years

12-Years

15-Years

20-Years

25-Years

COVERAGE

CertainTeed LLC ("CT") hereby warrants the roof membrane ("Product") installed at the above address, subject to the following terms, conditions, limitations and exclusions, for the period checked above from the date of completion of the Product installation. If during the duration of this Limited Warranty, a manufacturing defect in the Product causes a leak, CT or its designated roofing contractor will, at CT's sole discretion, repair or replace the Product only as necessary to restore it to a watertight condition. Only manufacturing defects in the Product that cause leaks are covered by this Limited Warranty. CT's MAXIMUM LIABILITY during the first year of this warranty is the original cost of the CT Product only. After the first year, CT's maximum liability is the original cost of the Product used on the roof reduced by 4% for 25-year warranties, 5% for 20-year warranties, 6.67% for 15-year warranties, 8.3% for 12-year warranties and 10% for 10-year warranties during each subsequent year, less any costs previously incurred by CT for repair or replacements. In no event, however, will CT be responsible for any costs related to the removal or abatement of any asbestos present in any existing roof system to which the CT Product is applied. Product, as used herein, shall include the following components: applicable base sheet(s), interpl(ies) and cap sheet(s) and hot asphalt and/or FlintBond® between layers if applicable, as required for the above selected warranty duration and applied per CT's Commercial Roof Systems Specifications. Roof components which are not part of the Product and hence not covered by this Limited Warranty include, but not limited to, the following: underlying roof deck, insulation, vapor retarders, fasteners, liquid flashing (non-CT brand), metal work, drains, pitch pans, expansion joints, skylights, vents, plastic accessories, decorative or reflective coating, surfacing and/or any aggregates.

EXCLUSIONS FROM COVERAGE

This Limited Warranty does not cover leaks, damages or injuries of any type, including, but not limited to, damage to roof insulation, roof decks or other bases over which the CT roof membrane specification products are applied, attributable directly or indirectly to any of the following:

1. Natural disasters, including, but not limited to, cyclones, tornadoes, hurricanes or other winds exceeding Force 9 on the Beaufort scale; lightning, earthquakes, flood, hail or fire;
2. Falling objects, civil insurrection, war, riot or vandalism;
3. Settlement, deflection, movement, moisture content, inadequate attachment, or other deficiencies of the roof deck, pre-existing roof system, walls, foundations or any other part of the building structure, insulation or other materials underlying the Product;
4. Failure of the roof membrane caused or contributed by:
 - a. Maintenance, repair or work on the roof unrelated to the roof membrane, such as, but not limited to mechanical, electrical, plumbing, etc.;
 - b. Infiltration or condensation of moisture in, through or around the walls, copings and metal components, pitch pans, building structure or underlying or surrounding materials;
 - c. Traffic of any nature or use of the roof surface as a storage area, walking or recreational surface or for any other similar purpose;
 - d. Movement or deterioration of metal work used in conjunction with the Product;
 - e. Deposits of solids or liquids which may cause deterioration of the Product;
 - f. Building design or construction;
 - g. Lack of positive drainage to completely remove water from the Product per NRCA guidelines; or
 - h. Installation over a wet surface or substrate;
5. Failure to adhere to CT's Commercial Roof Maintenance Program;
6. Unauthorized application on excluded buildings or structures (see CT's General Recommendations);
7. Any change in the building's basic usage unless approved in advance in writing by CT;
8. Any use of roofing material of any kind or nature not approved in CT's Commercial Roof Systems Specifications in effect at the time of installation;
9. Placement of any additional structures on the Product such as, but not limited to, equipment or framework used in connection with air conditioning units, transmission and/or reception devices, signs and/or water towers;
10. Failure to maintain the watertight integrity of the roof system; owner must make repairs to non-warranted items that affect the watertight integrity of the roof system;
11. Damage or injury arising in any way from testing/sampling of the membrane or design and consulting errors or omissions.

In addition, CT will not be responsible for, or have any liability, for changes to the appearance of the roof system that do not result in roof leaks. This includes, but is not limited to, fading or other changes in color to the roof membrane, the loss of granules from the cap sheet and/or surface cracking or blistering due to weathering or normal wear and tear from the elements.

ROOF MAINTENANCE

This Limited Warranty is not a maintenance agreement or an insurance policy. Routine inspections and maintenance of the roof system must be completed by the Owner on a regular basis and are the Owner's responsibility. Inspections by Owner shall take place at least on a semi-annual basis and shall be documented. Periodic inspections are the Owner's responsibility and shall include such things as making minor repairs, cleaning off debris, cleaning filters and gutters, unclogging drains and removing standing water. Lack of regular maintenance shall void this Limited Warranty. For specific information on roof maintenance requirements please visit our website at www.certainteed.com.

UNAPPROVED REPAIRS, ALTERATIONS, ADDITIONS OR DELETIONS

All repairs, alterations, deletions or additions to any aspect of the roof, or any material contiguous thereto, must have prior written approval of CertainTeed Roofing Warranty & Technical Services Department (CertainTeed Roofing Products Group, Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134). If owner, without prior written consent of CT, makes or permits any repairs, alterations, deletions or additions to the roof, all of CT's obligations, duties and coverage under this Limited Warranty will terminate and the Limited Warranty will be voided.

NOTICE OF CLAIMS

Any claim or request for CT to perform under this Limited Warranty must be made by owner in writing to the above listed address or by visiting www.ctroof.com within thirty (30) days of discovery of the defect, and owner must send original proof of purchase (Contract or invoice from roofer for service, product or work completed does not constitute Proof of Purchase of CT products. Original Proof of Purchase is required and best obtained from dealer) and samples that demonstrate the alleged manufacturing defect to CertainTeed Roofing Warranty & Technical Services Department. This notice of claim must include a general description of the alleged defect. Owner shall grant access to the entire roofing system as necessary for CT to investigate a claim. If access is not granted, CT shall have the right to determine, at its sole discretion, that this Limited Warranty is void as to that portion of the roof membrane to which access is denied.

NOTE: In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, owner may make essential temporary repair(s) performed by a qualified roofer. CT will only reimburse Owner for essential temporary repair expenses that would have been covered under this Limited Warranty.

MODIFICATIONS

Only CertainTeed Roofing Warranty & Technical Services Department is authorized to modify coverage provided by this Limited Warranty. Issuance of this Limited Warranty or review or inspection of plans, the building or product application by a CT representative does not waive any exclusions or conditions of this Limited Warranty. Application of a roof membrane that deviates from CT's Commercial Roof Systems Specifications voids coverage, unless prior written approval is provided by CertainTeed Roofing Warranty & Technical Services Department.

TRANSFERABILITY OF WARRANTY

This Limited Warranty may be transferred to a subsequent owner only if CertainTeed Roofing Warranty & Technical Services Department is notified, at the above listed Malvern address, within thirty (30) days of real estate title transfer and upon payment of the applicable transfer fee. Failure of the owner and subsequent owner to transfer this Limited Warranty pursuant to these stated conditions terminates CT's warranty obligations and the Limited Warranty will be voided.

CONDITION PERTAINING TO WARRANTY EFFECTIVENESS

This Limited Warranty applies to roof membranes installed during the calendar year of 2020 and shall become effective following complete installation of the roof membrane and payment in full to the roofing contractor. The warranty in effect at the time the material is originally installed is the applicable warranty. The warranty duration listed above is solely based upon information provided within the Product Registration/Warranty Request Form. Information presented and determined as incomplete or inaccurate, shall result in this warranty being null and void. Should a dispute arise between any of the parties (contractor, owner, CT) as to whether or not the contractor was paid in full, CT will hold the Limited Warranty in abeyance until such time as the parties agree that this condition has been satisfied.

EXCLUSIVE WARRANTY AND LIMITATION OF REMEDIES

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTY AND SOLE REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTY AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES, WARRANTIES AND REPRESENTATIONS, WHETHER WRITTEN, ORAL, IMPLIED BY STATUTE, AT LAW OR IN EQUITY, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR JURISDICTIONS MAY NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO REPAIRING OR REPLACING THE DEFECTIVE PRODUCT ASSET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY DAMAGE TO THE PROPERTY, THE BUILDING OR ITS CONTENTS, OR FOR INJURY TO ANY PERSONS, THAT MAY OCCUR AS A RESULT OF THE USE OF CERTAINTEED'S PRODUCTS OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR JURISDICTION DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN NO EVENT SHALL CERTAINTEED'S TOTAL LIABILITY ARISING OUT OF OR RELATED TO THE ROOF MEMBRANE PRODUCT OR THIS WARRANTY EXCEED THE COST TO THE OWNER OF THE ROOF MEMBRANE PRODUCT OF THE ORIGINAL INSTALLATION. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS THAT MAY VARY BY STATE OR JURISDICTION. THIS LIMITED WARRANTY MAY NOT BE MODIFIED, ALTERED OR EXPANDED BY ANYONE, INCLUDING PRODUCT DISTRIBUTORS, DEALERS, SELLERS, INSTALLERS AND/OR CERTAINTEED FIELD REPRESENTATIVES.

AGREEMENT TO BINDING ARBITRATION

Any and all claims, disputes and other matters in question that may occur between owner, the contractor, and/or CT, arising out of, in connection with, or relating to this Limited Warranty or breach thereof, shall be submitted to BINDING ARBITRATION for resolution. The arbitration shall be conducted by the American Arbitration Association under its Construction Industry Arbitration Rules then in effect, unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the Federal Arbitration Act, 9 U.S.C. § 2 or the applicable state arbitration laws. The award rendered by the arbitrator shall be final, and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.

EXAMINATION OR INSPECTION

Issuance of this Limited Warranty or roof inspections made by CT or an authorized agent of CT do not constitute an approval of the roof, roof design plans or specifications, or construction or installation of the roof. CT does not practice engineering or architecture. Roof designs, construction plans or installation of the roof system should be approved by owner or owner's professional.

Note: All referenced documents/forms are available at www.certainteed.com.

Owner:
Owner Address:
Building Address:
of Squares:
CT Product Specification No:
Description of Building Use:
Applicator:
Roof Completion Date:
Applicator's Address:
Applicator's Phone:
Warranty Expiration Date:

Coverage

CertainTeed LLC (CT) hereby warrants the roof system installed at the above address, subject to the following terms, conditions, limitations and exclusions, for a period of _____ years from the date of completion of the roof system installation. If, during the duration of this Limited Warranty, a leak is caused by a deficiency in the workmanship of the roof system installation or by a manufacturing defect in the roof system, CT or its designated roofing contractor will, at CT's expense, repair or replace the roof system only as necessary to restore it to a watertight condition. Only deficiencies in the roof system that cause leaks are covered by this Limited Warranty. In no event will CT be responsible for any costs related to the removal or abatement of any asbestos present in any existing roof system to which the CT roof system is applied. Roof system, as used herein, shall include the following components: FlintBoard® insulation, FlintFast® fasteners, FlintPrime® Primers, FlintCoat® Coatings, FlintBond® adhesives, FlintEdge® metals, SmartFlash® (ONE) liquid applied flashing, applicable base sheet(s), interpl(ies), cap sheets and hot asphalt between layers when applicable, as required for the warranty duration and applied per CT's Commercial Roof Systems Specifications. Roof components which are not part of the roof system and hence not covered by this Limited Warranty include the following: underlying roof deck, insulation (non-CT brand), vapor retarders (non-CT brand), fasteners (non-CT brand), liquid flashing (non-CT brand), metal work (non-CT brand), drains, pitch pans, expansion joints (non-CT brand), skylights, vents, plastic accessories, decorative or reflective coating (non-CT brand), surfacing and/or any aggregates.

Exclusions from Coverage

This Limited Warranty does not cover leaks, damages or injuries of any type, including, but not limited to, damage to roof insulation, roof decks or other bases over which the CT products are applied, attributable directly or indirectly to any of the following:

1. Natural disasters, including, but not limited to, cyclones, tornadoes, hurricanes or other winds exceeding Force 9 on the Beaufort scale, lightning, earthquakes, flood, hail or fire;
2. Falling objects, civil insurrection, war, riot or vandalism;
3. Settlement, deflection, movement, moisture content, inadequate attachment or other deficiencies of the roof deck, pre-existing roof system, walls, foundations or any other part of the building structure, insulation or other materials underlying the roof system;
4. Failure of the roof system caused or contributed by:
 - a. Maintenance, repair or work on the roof unrelated to the roof system, such as mechanical, electrical or plumbing;
 - b. Infiltration or condensation of moisture in, through or around the walls, copings and metal components, pitch pans, building structure or underlying or surrounding materials;
 - c. Traffic of any nature or use of the roof surface as a storage area, walking or recreational surface or for any other similar purpose;
 - d. Movement or deterioration of metal work used in conjunction with the roof system;
 - e. Deposits of solids or liquids which may cause deterioration of the roof system;
 - f. Building design or construction;
 - g. Lack of positive drainage, to completely remove water from the roof system per NRCA guidelines; or
 - h. Installation over a wet surface or substrate;
5. Failure to adhere to CertainTeed's Commercial Roof Maintenance Program;
6. Unauthorized application on excluded buildings or structures (see CT's General Recommendations);
7. Any change in the building's basic usage unless approved in advance in writing by CT;
8. Any use of roofing material of any kind or nature not approved in CT's Commercial Roof Systems Specifications;
9. Placement of any additional structures on the roof system such as, but not limited to, equipment or framework used in connection with air conditioning units, transmission and/or reception devices, signs and/or water towers;
10. Failure to maintain the watertight integrity of the roof system; owner must make repairs within 30 days of notification by CT to non-warranted items that affect the watertight integrity of the roof system.

In addition, CT will not be responsible for, or have any liability for, changes to the appearance of the roof system that do not result in roof leaks. This includes, but is not limited to: the loss of granules from the cap sheet and/or surface cracking or blistering due to weathering or normal wear and tear from the elements.

Non-Warranted Repairs

Repairs must be made by a CT Gold Star or Silver Star roofing contractor or roofing contractor approved in advance by CT. Should a nonwarranted repair be made by any roofing contractor, payment must be remitted to the roofing contractor within 30 days from completion of the work or the Limited Warranty will be void. Should non-warranted repairs not be made within 30 days of notification by CT, the Limited Warranty will be void.

Two-Year Inspection

A mandatory inspection will be made of the roofing membrane within 2 years from the date of application. If for any reason CT or its authorized representative is not granted access to perform the inspection this Limited Warranty shall be void.

Unapproved Repairs, Alterations, Deletions or Additions

All repairs, alterations, deletions or additions to any aspect of the roof, or any material contiguous thereto, must have prior written approval of CertainTeed Roofing Warranty & Technical Services Department (CertainTeed Roofing Products Group, Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134). If owner, without prior written consent of CT, makes or permits any repairs, alterations, deletions or additions to the roof, all of CT's obligations, duties and coverage under this Limited Warranty will terminate.

Notice of Claims

Any claim or request for CT to perform under this Limited Warranty must be made by owner to CT in writing to the above listed address or by visiting www.ctroof.com within thirty (30) days of discovery of the defect (notification to the contractor is not considered notice to CT) or CT will have no responsibility for the repairs. This notice of claim must include a general description of the alleged defect and a copy of the roof maintenance records. Owner shall grant access to the entire roof system as necessary for CT to investigate a claim. If access is not granted, CT shall have the right to determine, at its sole discretion, that this Limited Warranty is void as to that portion of the roof system to which access is denied. Should the investigation of the leak be determined not to be covered under this Limited Warranty, any costs associated with the leak investigation shall be the owner's sole responsibility.

NOTE: In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, owner may make essential temporary repair(s) performed by a qualified roofer. CT will only reimburse Owner for essential temporary repair expenses that would have been covered under this Limited Warranty.

Modifications

Only CertainTeed Roofing Warranty & Technical Services Department is authorized to modify coverage provided by this Limited Warranty. Issuance of this Limited Warranty or review or inspection of plans, the building or product application by a CT representative does not waive any exclusions or conditions of this Limited Warranty. Application of a roof system that deviates from CT's Commercial Roof Systems Specifications voids coverage, unless prior written approval is provided by CertainTeed Roofing Warranty & Technical Services Department.

Transferability of Warranty

This Limited Warranty may be transferred to a subsequent owner only if CertainTeed Roofing Warranty & Technical Services Department is notified at the above listed Malvern address within thirty (30) days of real estate title transfer and upon payment of the applicable transfer fee to CT. Failure to transfer this Limited Warranty pursuant to these stated conditions terminates CT's warranty obligations. If it is determined at CT's sole discretion that the roof is in a state of poor maintenance or in disrepair, CT reserves the right to reject the transfer and void this Limited Warranty. All transfer fees will be refunded minus the cost of any applicable inspection and administrative fees.

Conditions Pertaining to Warranty Effectiveness

This Limited Warranty shall become effective only upon the occurrence of all the following events:

1. Receipt of roofing contractor's notice of completion;
2. CT final inspection and completion of all punchlist items
3. Payment of CT's warranty fee to CT; and
4. Owner's payment to roofing contractor for installation and supplies.

Should a dispute arise between any of the parties (contractor, owner, CT) as to whether or not any of these Conditions Pertaining to Warranty Effectiveness have been satisfied, CT will hold the Limited Warranty in abeyance until such time as the parties agree that all Conditions have been satisfied.

Exclusive Warranty and Limitations of Remedies

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTY AND SOLE REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTY AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES, WARRANTIES AND REPRESENTATIONS, WHETHER WRITTEN, ORAL, IMPLIED BY STATUTE, AT LAW OR IN EQUITY, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE AND FITNESS FOR A PARTICULAR

PURPOSE. SOME STATES OR JURISDICTIONS MAY NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO REPAIRING OR REPLACING THE DEFECTIVE PRODUCT AS SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY DAMAGE TO THE PROPERTY, THE BUILDING OR ITS CONTENTS, OR FOR INJURY TO ANY PERSONS, THAT MAY OCCUR AS A RESULT OF THE USE OF CERTAINTEED'S PRODUCTS OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR JURISDICTION DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS THAT MAY VARY BY STATE OR JURISDICTION.

Agreement to Binding Arbitration

Any and all claims, disputes and other matters in question that may occur between owner, the contractor, and/or CT, arising out of, in connection with, or relating to this Limited Warranty or breach thereof, shall be submitted to BINDING ARBITRATION for resolution. The arbitration shall be conducted by the American Arbitration Association under its Construction Industry Arbitration Rules then in effect, unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the Federal Arbitration Act, 9 U.S.C. § 2 or the applicable state arbitration laws. The award rendered by the arbitrator shall be final, and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.

Examination or Inspection CT does not practice engineering or architecture. Roof inspections made by CT or an authorized agent of CT or issuance of this Limited Warrant does not constitute an approval of the roof, roof design plans or specifications, or construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by owner or owner's professional.

Note: All referenced documents/forms available at www.certainteed.com.

Owner:
 Owner Address:
 Building Address:
 # of Squares:
 CT Product Specification No:
 Description of Building Use:
 Applicator:
 Roof Completion Date:
 Applicator's Address:
 Applicator's Phone:
 Warranty Expiration Date:

Coverage

CertainTeed LLC (CT) hereby warrants the roof system installed at the above address, subject to the following terms, conditions, limitations and exclusions, for a period of years from the date of completion of the roof system installation. If, during the duration of this Limited Warranty, a leak is caused by a deficiency in the workmanship of the roof system installation or by a manufacturing defect in the roof system, CT or its designated roofing contractor will, at CT's expense, repair or replace the roof system only as necessary to restore it to a watertight condition. Only deficiencies in the roof system that cause leaks are covered by this Limited Warranty. In no event will CT be responsible for any costs related to the removal or abatement of any asbestos present in any existing roof system to which the roof system is applied. Roof system, as used herein, shall include the following components: [this section to be populated with items from a predefined list contained in the warranty application] applicable base sheet(s), interpl(ies) and, cap sheets and hot asphalt between layers when applicable, as required for the warranty duration and applied per CT's Commercial Roof Systems Specifications. Roof components which are not part of the roof system and hence not covered by this Limited Warranty include the following: underlying roof deck, insulation (non-CT brand), vapor retarders (non-CT brand), fasteners (non-CT brand), metal work (non-CT brand), drains, pitch pans, expansion joints (non-CT brand), liquid flashing (non-CT brand), skylights, vents, plastic accessories, any decorative or reflective coating (non-CT brand), surfacing and/or any aggregates.

Exclusions from Coverage

This Limited Warranty does not cover leaks, damages or injuries of any type, including, but not limited to, damage to roof insulation, roof decks or other bases over which the roof system is applied, attributable directly or indirectly to any of the following:

1. Natural disasters, including, but not limited to, cyclones, tornadoes, hurricanes or other winds exceeding Force 9 on the Beaufort scale, lightning, earthquakes, flood, hail or fire;
2. Falling objects, civil insurrection, war, riot or vandalism;
3. Settlement, deflection, movement, moisture content, inadequate attachment, or other deficiencies of the roof deck, pre-existing roof system, walls, foundations or any other part of the building structure, insulation or other materials underlying the roof system;
4. Failure of the roof system caused or contributed by:
 - a. Maintenance, repair or work on the roof unrelated to the roof system, such as but not limited to mechanical, electrical or plumbing;
 - b. Infiltration or condensation of moisture in, through or around the walls, copings and metal components, pitch pans, building structure or underlying or surrounding materials;
 - c. Traffic of any nature or use of the roof surface as a storage area, walking or recreational surface or for any other similar purpose;
 - d. Movement or deterioration of metal work used in conjunction with the roof system;
 - e. Deposits of solids or liquids which may cause deterioration of the roof system;
 - f. Building design or construction;
 - g. Lack of positive drainage, to completely remove water from the roof system per NRCA guidelines; or
 - h. Installation over a wet surface or substrate;
5. Failure to adhere to CertainTeed's Commercial Roof Maintenance Program;
6. Unauthorized application on excluded buildings or structures (see CT's General Recommendations);
7. Any change in the building's basic usage unless approved in advance in writing by CT;
8. Any use of roofing material of any kind or nature not approved in CT's Commercial Roof Systems Specifications;
9. Placement of any additional structures on the roof system such as, but not limited to, equipment or framework used in connection with air conditioning units, transmission and/or reception devices, signs and/or water towers;
10. Failure to maintain the watertight integrity of the roof system; owner must make repairs within 30 days of notification by CT to non-warranted items that affect the watertight integrity of the roof system.

In addition, CT will not be responsible for, or have any liability for, changes to the appearance of the roof system that do not result in roof leaks. This includes, but is not limited to, fading or other changes in color to the roof membrane, the loss of granules from the cap sheet and/or surface cracking or blistering due to weathering or normal wear and tear from the elements.

Non-Warranted Repairs

Repairs must be made by a CT Gold Star or Silver Star roofing contractor or roofing contractor approved in advance by CT. Should a non-warranted repair be made by any roofing contractor, payment must be remitted to the roofing contractor within 30 days from completion of the work or the Limited Warranty will be void. Should non-warranted repairs not be made within 30 days of notification by CT, the Limited Warranty will be void.

Two-Year Inspection

A mandatory inspection will be made of the roofing membrane within 2 years from the date of application. If for any reason CT or its authorized representative is not granted access to perform the inspection this Limited Warranty shall be void.

Unapproved Repairs, Alterations, Deletions or Additions

All repairs, alterations, deletions or additions to any aspect of the roof, or any material contiguous thereto, must have prior written approval of CertainTeed Roofing Warranty & Technical Services Department (CertainTeed Roofing Products Group, Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134). If owner, without prior written consent of CT, makes or permits any repairs, alterations, deletions or additions to the roof, all of CT's obligations, duties and coverage under this Limited Warranty will terminate.

Notice of Claims

Any claim or request for CT to perform under this Limited Warranty must be made by owner to CT in writing to the above listed address or by visiting www.ctroof.com within thirty (30) days of discovery of the defect (notification to the contractor is not considered notice to CT) or CT will have no responsibility for the repairs. This notice of claim must include a general description of the alleged defect and a copy of the roof maintenance records. Owner shall grant access to the entire roof system as necessary for CT to investigate a claim. If access is not granted, CT shall have the right to determine, at its sole discretion, that this Limited Warranty is void as to that portion of the roof system to which access is denied. Should the investigation of the leak be determined not to be covered under this Limited Warranty any costs associated with the leak investigation shall be the owner's sole responsibility.

NOTE: In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, owner may make essential temporary repair(s) performed by a qualified roofer. CT will only reimburse owner for essential temporary repair expenses that would have been covered under this Limited Warranty.

Modifications

Only CertainTeed Roofing Warranty & Technical Services Department is authorized to modify coverage provided by this Limited Warranty. Issuance of this Limited Warranty or review or inspection of plans, the building or product application by a CT representative does not waive any exclusions or conditions of this Limited Warranty. Application of a roof system that deviates from CT's Commercial Roof Systems Specifications voids coverage, unless prior written approval is provided by CertainTeed Roofing Warranty & Technical Services Department.

Transferability of Warranty

This Limited Warranty may be transferred to a subsequent owner only if CertainTeed Roofing Warranty & Technical Services Department is notified at the above listed Malvern address within thirty (30) days of real estate title transfer and upon payment of the applicable transfer fee to CT. Failure to transfer this warranty pursuant to these stated conditions terminates CT's warranty obligations. If it is determined at CT's sole discretion that the roof is in a state of poor maintenance or in disrepair, CT reserves the right to reject the transfer and void this Limited Warranty. All transfer fees will be refunded minus the cost of any applicable inspection and administrative fees.

Conditions Pertaining to Warranty Effectiveness

This Limited Warranty shall become effective only upon the occurrence of all the following events:

1. Receipt of roofing contractor's notice of completion;
2. CT final inspection and completion of all punchlist items;
3. Payment of CT's warranty fee to CT; and
4. Owner's payment to roofing contractor for installation and supplies.

Should a dispute arise between any of the parties (contractor, owner, CT) as to whether or not any of these Conditions Pertaining to Warranty Effectiveness have been satisfied, CT will hold the Limited Warranty in abeyance until such time as the parties agree that all Conditions have been satisfied.

Exclusive Warranty and Limitations of Remedies

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTY AND SOLE REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTY AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES, WARRANTIES AND REPRESENTATIONS, WHETHER WRITTEN, ORAL, IMPLIED BY STATUTE, AT LAW OR IN EQUITY, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE AND FITNESS FOR A PARTICULAR PURPOSE. SOME STATES OR JURISDICTIONS MAY NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO REPAIRING OR REPLACING THE DEFECTIVE PRODUCT AS SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY DAMAGE TO THE PROPERTY, THE BUILDING OR ITS CONTENTS, OR FOR INJURY TO ANY PERSONS, THAT MAY OCCUR AS A RESULT OF THE USE OF CERTAINTEED'S PRODUCTS OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR JURISDICTION DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY HAVE OTHER RIGHTS THAT MAY VARY BY STATE OR JURISDICTION.

Agreement to Binding Arbitration

Any and all claims, disputes and other matters in question that may occur between owner, the contractor and/or CT, arising out of, in connection with, or relating to this Limited Warranty or breach thereof, shall be submitted to BINDING ARBITRATION for resolution. The arbitration shall be conducted by the American Arbitration Association under its Construction Industry Arbitration Rules then in effect, unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the Federal Arbitration Act, 9 U.S.C. § 2 or the applicable state arbitration laws. The award rendered by the arbitrator shall be final, and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.

Examination or Inspection

CT does not practice engineering or architecture. Roof inspections made by CT or an authorized agent of CT or issuance of this Limited Warranty does not constitute an approval of the roof, roof design plans or specifications, or construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by owner or owner's professional.

Note: All referenced documents/forms available at www.certainteed.com.

Coverage

For a period of 7 to 10 years, as determined by the Product Warranty Chart below from the date of installation completion, CertainTeed (CT) warrants to the original building owner (Owner) that the CT Coating materials used on the roof will be free from manufacturing defects that affect the performance of CT's Coating on the owner's roof.

Product Warranty Chart:

CertainTeed Product	Coverage Per Square	Warranty
FlintCoat® W	3 Gallons	10 Years
FlintCoat® A-300	1 1/2 Gallons	7 Years

In the event there is a failure of the CT Coating due to a manufacturing defect during the warranty period, CT shall, at its sole discretion, provide the appropriate replacement CT Coating, repair the CT Coating or pay for the original cost of the defective product only, to return the CT Coating to warrantable condition. Note: Repair leaks promptly to avoid water damage, including mold growth.

Exclusions from Coverage

This Limited Warranty does not cover leaks, damages or injuries of any type, including, but not limited to, damage to roof insulation, roof decks or other bases over which the CT Coating is applied and attributable directly or indirectly to any of the following:

1. Damage or leaks to the roof membrane caused directly or indirectly by natural disaster such as falling objects, cyclones, hurricanes, tornadoes, or other winds or gusts exceeding Force 7 on the Beaufort scale, earthquakes, lightning, hail or fire;
2. Damage to the roof membrane caused by, among other things, misuse, abuse, falling objects, tools, foot traffic, additional equipment or sign installation;
3. Damage to the roof membrane caused by clogged drains or lack of adequate drainage that promptly and readily removes water from the roof;
4. Damage due to ponding water (as defined by the National Roofing Contractors Association);
5. Damage to, or failure of, the roof membrane in any manner caused or contributed to by settlement, cracking, warping, expansion, contraction, deflection or other movement of the building structure;
6. Failure to adhere to CertainTeed's Commercial Roof Maintenance Program;
7. Components of the roof system not sold by CT;
8. Mold and other damage caused by water entering building;
9. Any other damage not attributable to a manufacturing defect of the CT Coating.

This Limited Warranty is only applicable when CT products are properly installed according to CT published specifications and label instructions. This Limited Warranty does not cover leaks or damage caused by leaks. This Limited Warranty applies only to materials. This Limited Warranty does not include installation or labor costs. The existing roof deck has not been inspected by CT and is NOT part of this Limited Warranty. CT shall not be liable for any incidental, consequential or other damages including, but not limited to the loss of sales, profits, rent payments, inventory, equipment, valuables or other monetary losses or damages to the structure or the structures contents, even if the actions or remedies provided under this Limited Warranty do not perform their specified purpose.

Roof Maintenance

This Limited Warranty is not a maintenance agreement or an insurance policy. Routine inspections and maintenance of the roof system must be completed by the owner on a regular basis and are the owner's responsibility. Inspections by owner shall take place at least on a semi-annual basis and shall be documented. Periodic inspections are the owner's responsibility and shall include such things as making minor repairs, cleaning off debris, cleaning filters and gutters, unclogging drains and removing standing water. Lack of regular maintenance shall void this Limited Warranty. For specific information on roof maintenance requirements please visit our website at www.certainteed.com.

Unapproved Repairs, Alterations, Deletions or Additions

All repairs, alterations, deletions or additions to any aspect of the roof that affects the coating or any material contiguous thereto must have prior written approval of CertainTeed Roofing Warranty & Technical Services Department (CertainTeed Roofing Products Group, Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134 x2). If owner, without prior written consent of CT, makes or permits any repairs, alterations, deletions or additions to the roof that affect the CT coating, all of CT's obligations, duties and coverage under this Limited Warranty will terminate and the Limited Warranty will be voided.

Notice of Claims

Any claim or request for CT to perform under this Limited Warranty must be made by owner in writing within thirty (30) days of discovery of the defect, and owner must send proof of purchase and samples that demonstrate the alleged manufacturing defect to CertainTeed Roofing Warranty & Technical Services Department. This notice of claim must include a general description of the alleged defect. Owner shall grant access to the entire roofing system as necessary for CT to investigate the claim. If access is not granted, CT shall have the right to determine, at its sole discretion, that this Limited Warranty is void as to that portion of the roof to which access is denied. Contract or invoice from roofer for service, product or work completed does not constitute Proof of Purchase of CT products. Original Proof of Purchase is required and best obtained from the place of purchase. Copies are not acceptable. Failure to notify CT in a timely manner shall relieve CT of any obligation under this Limited Warranty.

Note: Notice of claim to your contractor does not constitute notice to CT.

In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, owner may make essential temporary repair(s) performed by a qualified roofer. CT will only reimburse owner for essential temporary repair expenses that would have been covered under this Limited Warranty.

Transferability

This warranty is applicable to the original building owner only and not transferable. Condition Pertaining to Limited Warranty Effectiveness This Limited Warranty shall only become effective following the complete installation of the CT Coating according to CT published specifications and payment in full to the roofing contractor. Should a dispute arise between any of the parties (contractor, owner, CT) as to whether or not the contractor was paid in full, CT will hold the Limited Warranty in abeyance until such time as the parties agree that this condition has been satisfied.

Warranty and Limitation of Remedies

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTIES AND REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTIES AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES AND WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED BY STATUTE OR AT LAW. STATE OR PROVINCIAL LAW WILL DETERMINE THE PERIOD OF TIME FOLLOWING THE SALE THAT A PROPERTY OWNER MAY SEEK A REMEDY UNDER THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO REPAIRING OR REPLACING THE DEFECTIVE CT COATING AS SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY DAMAGE TO THE PROPERTY, THE BUILDING OR ITS CONTENTS, OR FOR INJURY TO ANY PERSONS THAT MAY OCCUR AS A RESULT OF THE USE OF THE CT COATING OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR PROVINCE DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN NO EVENT SHALL CERTAINTEED'S TOTAL LIABILITY ARISING OUT OF OR RELATED TO THE CT COATING OR THIS WARRANTY EXCEED THE COST TO THE OWNER OF THE CT COATING OF THE ORIGINAL INSTALLATION. THIS LIMITED WARRANTY MAY NOT BE MODIFIED, ALTERED OR EXPANDED BY ANYONE, INCLUDING PRODUCT DISTRIBUTORS, DEALERS, SELLERS, INSTALLERS, AND/OR CERTAINTEED FIELD REPRESENTATIVES. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

Modifications to Limited Warranty

Only CertainTeed Roofing Warranty & Technical Services Department is authorized to modify coverage provided by this Limited Warranty. Issuance of this Limited Warranty or review or inspection of plans, the building or product application by a CT representative does not waive any exclusions or conditions of this Limited Warranty. Application of the CT Coating that deviates from CT's Commercial Roof Systems Specifications manual voids coverage, unless prior written approval is provided by CertainTeed Roofing Warranty & Technical Services Department.

Agreement to Binding Arbitration

Any and all claims, disputes and other matters in question that may occur between owner, the contractor, and/or CT, arising out of, in connection with, or relating to this Limited Warranty or breach thereof, shall be submitted to BINDING ARBITRATION for resolution. The arbitration shall be conducted by the American Arbitration Association under its Construction Industry Arbitration Rules then in effect, unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the Federal Arbitration Act, 9 U.S.C. § 2 or the applicable state arbitration laws. The award rendered by the arbitrator shall be final, and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof. Inspection CT does not practice engineering or architecture. Issuance of this Limited Warranty or any roof inspections conducted by CT or its authorized agent, do not constitute an approval of the roof, the roof design plans or specifications, or the construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by owner or owner's professional. Any roof inspections are solely for the benefit of CT.

Inspection

CT does not practice engineering or architecture. Issuance of this Limited Warranty or any roof inspections conducted by CT or its authorized agent, do not constitute an approval of the roof, the roof design plans or specifications, or the construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by owner or owner's professional. Any roof inspections are solely for the benefit of CT.

Coverage

CertainTeed LLC (CT) warrants that the thermal insulation R-Value of its family of FlintBoard® polyisocyanurate foam insulation products (FlintBoard) will not at any time after the first (1st) year of purchase, but prior to the start of the twentieth (20th) year after purchase, diminish to less than eighty percent (80%) of the published R-Value of the FlintBoard at the time of purchase. This Limited Warranty is expressly made subject to the following terms, conditions and limitations:

Warranty Limited to One Evaluation

Owner agrees that the Limited Warranty is based on an evaluation of FlintBoard as hereinafter set forth, and that the FlintBoard may be evaluated for R-Value only one time during the time period for which this Limited Warranty is made. Owner agrees and understands that the FlintBoard may not be evaluated each year and that the Limited Warranty applies only to the results of the initial test performed on the product.

Proof of Purchase

As a condition precedent to recovery under this Limited Warranty, owner agrees to retain the original Proof of Purchase of FlintBoard product (sales receipt) and to submit the same to CT when filing a claim. The original Proof of Purchase (sales receipt) must clearly establish that it relates to the FlintBoard which is the subject of the claim.

Warranty and Limitation of Remedies

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTIES AND REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTIES AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES AND WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED BY STATUTE OR AT LAW. STATE OR PROVINCIAL LAW WILL DETERMINE THE PERIOD OF TIME FOLLOWING THE SALE THAT A PROPERTY OWNER MAY SEEK A REMEDY UNDER THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO REPAIRING OR REPLACING THE DEFECTIVE FLINTBOARD PRODUCT AS SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY DAMAGE TO THE PROPERTY, THE BUILDING OR ITS CONTENTS, OR FOR INJURY TO ANY PERSONS THAT MAY OCCUR AS A RESULT OF THE USE OF THE FLINTBOARD PRODUCT OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR PROVINCE DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN NO EVENT SHALL CERTAINTEED'S TOTAL LIABILITY ARISING OUT OF OR RELATED TO FLINTBOARD PRODUCT OR THIS WARRANTY EXCEED THE COST TO THE OWNER OF THE FLINTBOARD PRODUCT OF THE ORIGINAL INSTALLATION. IN NO EVENT SHALL CT BE LIABLE FOR ANY DAMAGES OR EXPENSES RELATED TO THE REMOVAL OR REPLACEMENT OF THE FLINTBOARD OR ANY COVERINGS OVER THE FLINTBOARD. THIS LIMITED WARRANTY MAY NOT BE MODIFIED, ALTERED OR EXPANDED BY ANYONE, INCLUDING PRODUCT DISTRIBUTORS, DEALERS, SELLERS, INSTALLERS AND/OR CERTAINTEED FIELD REPRESENTATIVES. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE OR PROVINCE TO PROVINCE.

Limitations of Coverage

CT shall not be liable for and this Limited Warranty does not apply to: (a) FlintBoard which has been damaged, abused, misused, punctured, crushed, or improperly applied or installed; (b) FlintBoard which has been harmed by use or environmental conditions such that the foam cells have been ruptured by excessive heat, cold and/or humidity; (c) FlintBoard wherein the moisture content as shown by the moisture content test taken on the sample at the time of evaluation indicates an excess of three percent (3%) moisture by weight; (d) FlintBoard which has not been handled, stored or used according to the instructions outlined on CT labels or CT product literature in effect at the date of sale; or (e) any other cause not related to manufacturing defects.

Evaluation of R-Value and Notice of Claim

If at any time after the first (1st) year from the date of purchase of the FlintBoard, but prior to the twentieth (20th) year, owner decides to evaluate the FlintBoard R-Value, owner shall notify CT in writing at CertainTeed Roofing Warranty & Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134 at least sixty (60) days prior to the removal of the installed samples. Owner agrees that a CT representative shall monitor and choose the sampling places, the testing facility and the testing procedures. Owner agrees, at its own expense, to remove samples, replace and repair the sample area, and have tests made on the FlintBoard only in the presence of a CT representative. Owner further agrees that a moisture content test shall also be performed under the above terms and conditions and that owner shall be responsible for all costs involved in connection therewith. If the owner removes or damages the FlintBoard prior to the scheduled sampling, this Limited Warranty shall be void. All testing of the insulation samples will be conducted at a NAVLP certified independent testing laboratory approved by CT. Results of the testing will be final and binding on all parties concerned.

Limitation of Liability

If the test results of the FlintBoard samples as determined by the independent testing laboratory verify that the R-Value has fallen below eighty percent (80%) of CT published specifications in force at the time of the original sale, CT will reimburse owner a percentage of owner's original purchase price of FlintBoard product pursuant to the following schedule:

Year(s) After	Percent Reimbursement Of Original Purchase	Year(s) After	Percent Reimbursement Of Original Purchase
1-10	100%	16	40%
11	90%	17	30%
12	80%	18	20%
13	70%	19	10%
14	60%	20	0%
15	50%		

THE AMOUNT ORIGINALLY PAID FOR THE FLINTBOARD BY THE OWNER SHALL BE EVIDENCED BY THE ORIGINAL PROOF OF PURCHASE. IN NO EVENT SHALL THE AMOUNT OF ANY LIABILITY AND/OR REIMBURSEMENT OF CT UNDER THIS LIMITED WARRANTY BE GREATER THAN THE ORIGINAL PURCHASE PRICE OF THE FLINTBOARD.

Transferability of Warranty

This Limited Warranty may be transferred to a subsequent owner only if CertainTeed Roofing Warranty & Technical Services Department is notified at the above listed Malvern address within thirty (30) days of real estate title transfer and upon payment of the applicable transfer fee to CT. Failure of the owner or subsequent owner to transfer this Limited Warranty pursuant to these stated conditions terminates CT's warranty obligations and the Limited Warranty will be voided.

Note: Not more than one claim may be filed on any one building.

Condition Pertaining to Warranty Effectiveness

This Limited Warranty shall become effective following complete installation of the FlintBoard and payment in full to the roofing contractor. Should a dispute arise between any of the parties (contractor, owner, CT) as to whether or not the contractor was paid in full, CT will hold the Limited Warranty in abeyance until such time as the parties agree that this condition has been satisfied.

Agreement to Binding Arbitration

Any and all claims, disputes and other matters in question that may occur between owner, the contractor, and/or CT, arising out of, in connection with, or relating to this Limited Warranty or breach thereof, shall be submitted to BINDING ARBITRATION for resolution. The arbitration shall be conducted by the American Arbitration Association under its Construction Industry Arbitration Rules then in effect, unless the parties mutually agree otherwise. This agreement to arbitrate shall be specifically enforceable under the Federal Arbitration Act, 9 U.S.C. § 2 or the applicable state arbitration laws. The award rendered by the arbitrator shall be final, and judgment may be entered upon such award in accordance with applicable law in any court having jurisdiction thereof.

Inspection

CT does not practice engineering or architecture. Issuance of this Limited Warranty or roof inspections made by CT or an authorized agent of CT does not constitute an approval of the roof, roof design plans or specifications, or construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by owner or owner's professional.

Coverage

For the Warranty Period defined in the Warranty Chart below, CertainTeed (CT) warrants to the original building owner (Owner) that SmartFlash® or SmartFlash® ONE used on the roof will be free of leaks caused by manufacturing defects.

Product Warranty Chart:

SmartFlash or SmartFlash ONE Applied	Warranty Period
During original installation of a CT asphaltic low or steep-slope roof system	Matches CT roof system warranty as published at the time of the installation, up to, but not more than 20 years. The Warranty Period runs from the date of the original installation of the roof system.
As a repair or after completion of an original installation of a CT asphaltic low or steep-slope roof system where the roof system warranty has already started	10 years from the date of the original application of SmartFlash or SmartFlash ONE.
As part of a non-CT asphaltic low or steep-slope roof system, whether an original installation or repair.	10 years from the date of original application of SmartFlash or SmartFlash ONE.

Exclusions from Coverage

This Limited Warranty does not cover leaks, damages or injuries of any type, including, but not limited to, damage to roof insulation, roof decks, roof membrane or other bases over which SmartFlash or SmartFlash ONE is applied and attributable directly or indirectly to any of the following:

1. Natural disasters, such as falling objects, cyclones, hurricanes, tornadoes or other winds or gusts exceeding Force 9 on the Beaufort scale, earthquakes, lightning, hail or fire;
2. Misuse, abuse, falling objects, tools, foot traffic, or equipment or sign installation;
3. Clogged drains or lack of adequate drainage that does not promptly and readily remove water from the roof;
4. Ponding water (as defined by the National Roofing Contractors Association);
5. Settlement, cracking, warping, expansion, contraction, deflection or other movement of the building structure;
6. Improper installation of SmartFlash or SmartFlash ONE or the Commercial Roof System;
7. Degradation of SmartFlash or SmartFlash ONE due to exposure to the elements or sun, air pollution, acid rain or other environmental factors;
8. Failure to maintain SmartFlash or SmartFlash ONE as required under the Commercial Roof Maintenance Program;
9. Mold and other damage caused by water entering building; and
10. Any other damage not attributable to a manufacturing defect of the SmartFlash or SmartFlash ONE.

This Limited Warranty is only applicable when SmartFlash or SmartFlash ONE is properly installed according to CT published specifications and label instructions. This Limited Warranty does not cover leaks or damage caused by leaks caused by installation error. This Limited Warranty provides material only and does not include installation or labor costs. The existing roof deck has not been inspected by CT and is NOT part of this Limited Warranty.

Roof Maintenance

This Limited Warranty is not a maintenance agreement or an insurance policy. Routine inspections and maintenance of the roof system must be completed by the Owner on a regular basis and are the Owner's responsibility. Inspections by Owner shall take place at least on a semi-annual basis and shall be documented. Periodic inspections are the Owner's responsibility and shall include such things as making minor repairs, cleaning off debris, cleaning filters and gutters, unclogging drains and removing standing water. Lack of regular maintenance shall void this Limited Warranty. For specific information on roof maintenance requirements please visit our website at www.certainteed.com.

Unapproved Repairs, Alterations, Deletions or Additions

All repairs, alterations, deletions or additions to any aspect of the roof that affects SmartFlash or SmartFlash ONE or any material contiguous thereto must have prior written approval of CertainTeed Roofing Warranty & Technical Services Department, 20 Moores Road, Malvern, PA 19355, (800) 396-8134 x2. If Owner, without prior written consent of CT, makes or permits any repairs, alterations, deletions or additions to the roof that affect SmartFlash or SmartFlash ONE, all of CT's obligations, duties and coverage under this Limited Warranty will terminate and the Limited Warranty will be voided.

Notice of Claims

Any claim or request for CT to perform under this Limited Warranty must be made by Owner in writing to the above listed address or by visiting www.ctroof.com within thirty (30) days of discovery of the defect, and Owner must send proof of purchase and samples that demonstrate the alleged manufacturing defect to CertainTeed Roofing Warranty & Technical Services Department. This notice of claim must include a general description of the alleged defect. Owner shall grant access to the entire roofing system as necessary for CT to investigate the claim. If access is not granted, CT shall have the right to determine, at its sole discretion that this Limited Warranty is void as to that portion of the roof to which access is denied. Contract or invoice from roofer for service, product or work completed does not constitute Proof of Purchase of CT products. Original Proof of Purchase is required and best obtained from the place of purchase. Copies are not acceptable. Failure to notify CT in a timely manner shall relieve CT of any obligation under this Limited Warranty. Note: Notice of claim to your contractor does not constitute notice to CT. In the event an emergency condition exists which requires immediate repair to avoid damage to the building or its contents, Owner may make essential temporary repair(s) performed by a qualified roofer. CT will only reimburse Owner for essential temporary repair expenses that would have been covered under this Limited Warranty.

Transferability

This Limited Warranty may be transferred to a subsequent owner only if CertainTeed Roofing Warranty & Technical Services Department is notified at the above listed address within thirty (30) days of real estate title transfer and upon payment of the applicable transfer fee to CT. Failure to transfer this Limited Warranty pursuant to these stated conditions terminates CT's warranty obligations. If it is determined at CT's sole discretion that the roof is in a state of poor maintenance or in disrepair, CT reserves the right to reject the transfer and void this Limited Warranty. All transfer fees will be refunded minus the cost of any applicable inspection and administrative fees.

Limitations of Remedy and Liability

THIS DOCUMENT CONSTITUTES THE EXCLUSIVE WARRANTIES AND REMEDIES PROVIDED BY CERTAINTEED. THE WARRANTIES AND REMEDIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF ANY AND ALL OTHER OBLIGATIONS, GUARANTEES AND WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED BY STATUTE OR AT LAW. STATE OR PROVINCIAL LAW WILL DETERMINE THE PERIOD OF TIME FOLLOWING THE SALE THAT A PROPERTY OWNER MAY SEEK A REMEDY UNDER THE IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. CERTAINTEED'S OBLIGATIONS, RESPONSIBILITIES AND LIABILITY SHALL BE LIMITED TO PROVIDING REPLACEMENT SMARTFLASH OR SMARTFLASH ONE REFUNDING THE ORIGINAL COST OF THE DEFECTIVE SMARTFLASH OR SMARTFLASH ONE AS SET FORTH IN THIS LIMITED WARRANTY. IN NO EVENT WILL CERTAINTEED BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING THE LOSS OF SALES, PROFITS, RENT PAYMENTS, INVENTORY, EQUIPMENT, VALUABLES OR OTHER MONETARY LOSSES OR DAMAGE TO THE BUILDING OR TO THE BUILDING'S CONTENTS OR FOR INJURY TO ANY PERSONS THAT MAY OCCUR AS A RESULT OF THE USE OF SMARTFLASH OR SMARTFLASH ONE OR AS A RESULT OF THE BREACH OF THIS WARRANTY. IF YOUR STATE OR PROVINCE DOES NOT ALLOW EXCLUSIONS OR LIMITATIONS OF SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. IN NO EVENT WILL CERTAINTEED'S TOTAL LIABILITY ARISING OUT OF OR RELATED TO SMARTFLASH OR SMARTFLASH ONE OR THIS WARRANTY EXCEED THE COST TO THE OWNER OF THE SMARTFLASH OR SMARTFLASH ONE THAT WAS ORIGINALLY INSTALLED. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATED TO STATE OR PROVINCE TO PROVINCE.

Modifications to Limited Warranty

Except as noted herein, this Limited Warranty may not be modified, altered or expanded by anyone, including product distributors, dealers, sellers, installers and/or CT field representatives. Only CT's Technical Services Department is authorized to modify coverage provided by this Limited Warranty. Issuance of this Limited Warranty or review or inspection of plans, the building or product application by a CT representative does not waive any exclusions or conditions of this Limited Warranty. Application of the CT SmartFlash or SmartFlash ONE materials that deviates from CT's Commercial Roof Maintenance Program manual voids coverage, unless prior written approval is provided by CertainTeed Roofing Warranty & Technical Services Department.

Inspection

CT does not practice engineering or architecture. Issuance of this Limited Warranty or any roof inspections conducted by CT or its authorized agent, do not constitute an approval of the roof, the roof design plans or specifications, or the construction or installation of the roof. Roof designs, construction plans or installation of the roof system should be approved by the Owner or Owner's professional. Any roof inspections are solely for the benefit of CT.

This worksheet is intended to provide initial project data to commence with wind load analysis of roof cladding systems. Complete the form, sign the bottom and return to CertainTeed Roofing Warranty & Technical Services Department along with all required supporting documents listed in Section E and the required nonrefundable \$100 processing fee. If required, final signed/sealed design documents from a Professional Engineer will not be issued until CertainTeed receives all required supporting documentation and \$1,000 Professional Engineering fee.

A - BUILDING INFORMATION	
Project Name:	Building Use:
Address:	Building Category*:
Project Contact:	Importance Factor*:
Phone:	Basic Wind Speed*: mph:
*Note: If project is permitting in State of Florida, the items marked * must be listed on the project Roof Plan, as required Section 1603.1.4 of the 2017 Florida Building Code.	Exposure Category*:
	Internal Pressure Coeff.:

B - CODE INFORMATION	
Code Jurisdiction (check one and list year):	<input type="checkbox"/> IBC Year: _____
	<input type="checkbox"/> FBC Year: _____
	<input type="checkbox"/> Other: _____ Year: _____

C - SPECIFICATION INFORMATION			
FM Approval Requirement	<input type="checkbox"/> YES	<input type="checkbox"/> NO	FM Class 1 - _____
Special Wind Requirements:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	Describe requirement:
P.E. Certification Required:	<input type="checkbox"/> YES	<input type="checkbox"/> NO	List state of registration:
Other Spec. Requirements:			

D - ROOF INFORMATION							
Complete the following information for each roof level and area of the project. Use multiple pages for multiple roof areas.							
Project Type:	<input type="checkbox"/> New Construction		<input type="checkbox"/> Re-Roof (tear off)**		<input type="checkbox"/> Recover**		
***Roof Level #	of						
Height:	ft	Length:	ft	Min. Width:	ft	Pitch	:12
Parapet Height:	ft		Deck Type:				
Roof Insulation Type <input type="checkbox"/> Tapered <input type="checkbox"/> Flat <input type="checkbox"/> Composite				Coverboard Type			
Tradename:				Tradename:			
Thickness (inches):				Thickness (inches):			
Install Method:				Install Method:			
New Roof Assembly (BUR or Mod Bit)							
Component	Tradename		Install Method		Fasteners and Plates		
Base					Manufacturer:		
Ply(s):					Fastener Tradename:		
Cap:					Plate Template		
Coating:							

Product Approval Documentation			
List below the Product Approval or Test Report being submitted as the baseline for the wind load analysis:			
Miami-Dade NOA:		FBC Statewide Approval:	
ICC-ES Evaluation Report:		Test Report:	
Other:			

** For re-roof or re-cover projects involving mechanically attached roof components (e.g. insulation or membrane), field withdrawal resistance testing is required. CertainTeed recommends sampling and testing in accordance with Miami-Dade TAS 105, or applicable Building Code Requirement.

*** Complete section D for each roof level on the project.

E – REFERENCE ATTACHMENTS

Check those attachments which are included in the transmittal.

- Roof Plan (required) Roof Specification (required if issued for project)
- Exposure Condition Photographs (Photos taken from the roof top are required showing North, South, East and West exposure conditions if the project exposure condition is not specified on the roof plan or specs.)
- Field Pull Test Report, in accordance with ANSI/SPRI IA-I 2010 or SPRI FX-1 (required for re-roof and re-cover projects)
- Product Approval Documentation
- Other (list): _____

NOTICE: Wind load analysis performed is to be based exclusively on the information presented in this form and supplied attachments. An incomplete form will result in a delayed response. If the information presented is inaccurate, then the results of the analysis may be adversely affected, leading to an inappropriate fastening recommendation. CertainTeed will not be held accountable for erroneous recommendations resulting from inaccurate information. Responsibility and liability for incomplete or inaccurate information rests exclusively with the preparer of this form. This analysis is for guidance and CertainTeed warranty purposes only. The building owner or their authorized representative is responsible for adhering to local building code requirements. By signing this form, you agree to install the roof membrane per CertainTeed Enhanced Wind Warranty installation requirements at minimum. CertainTeed will not be considered as Quality Assurance for any roofing project. The roofing contractor is responsible for ensuring the roof membrane is installed in a workmanlike manner as required by CertainTeed's published installation instructions and all applicable building codes. If it is determined that the roof membrane was not installed per requirements, CertainTeed reserves the right to cancel any warranties issued for the specified project. Any warranty and processing fees paid to CertainTeed are nonrefundable.

CertainTeed does not practice engineering or architecture. Issuance of an Enhanced Wind Warranty Endorsement does not constitute approval of the roof design, plans or specifications. Roof designs, construction plans or installation of the roof systems should be approved by the owner or the owner's responsible professional.

ENHANCED WIND WARRANTY ENDORSEMENT FEE SCHEDULE²

Wind endorsement fee schedule for NDL Warranties, minimum 100 sq. If Professional Engineering Stamp is required, there is an additional \$1,000 fee. Contact CertainTeed Roofing Warranty & Technical Services Department at 1-800-396-8134 Ext. 2

55 – 80 mph	\$1.00 per square
81 – 90 mph	\$2.00 per square
91 – 100 mph	\$4.00 per square
101 – 110 mph	\$8.00 per square
111 – 120 mph	\$10.00 per square
121 – 135 mph	\$15.00 per square

Professional engineer report & stamp, as required \$1.000 fee in addition to above per square fee.

²The fee schedule is based on a minimum 100 squares and is in addition to applicable Asphaltic Membrane NDL Limited Warranty Fees.

Name:	Date
Company:	
Signature:	

Subject to the project specifications for the LiveRoof® Modular Green Roofing System (the Modular Roofing System) and the terms, conditions and limitations contained in the CertainTeed (CT) ____ Year No Dollar Limit Limited Warranty (NDL) number _____, CT warrants as follows:

For a period of ____ years from the date of issue, upon the report by the Owner of a leak in CT roof system under the Modular Roofing System, CT shall be responsible, at its own cost, for the removal and reinstallation of the Modular Roofing System from those portions of the roof system required to investigate and respond to the warranty service claim or request. Should CT's investigation reveal the cause of the leak, as determined by CT, to be outside the scope of the NDL coverage, the Modular Roofing System removal, investigation, repair and reinstallation costs shall be the sole responsibility of the Owner and shall be paid by the Owner.

LiveRoof Global LLC (LG) will warrant its Modular Roofing System against material defects and photodegradation for a period of time as determined by LG (see the LiveRoof Limited Warranty for details of terms, conditions and disclaimers).

FURTHER TERMS, CONDITIONS AND LIMITATIONS

1. THE VALUE OF THE REMEDIES STATED ABOVE SHALL NOT EXCEED, SINGLY OR IN THE AGGREGATE, OVER THE LIFE OF THIS OVERBURDEN LIMITED WARRANTY, THE ORIGINAL INSTALLED COST OF THE CT ROOF SYSTEM.

2. THE OVERBURDEN LIMITED WARRANTY IS CONTINGENT UPON THE EXCLUSIVE UTILIZATION OF CT-SUPPLIED AND/OR ENDORSED PRODUCTS IN THE INSTALLATION OF THE MODULAR ROOFING SYSTEM.

3. CT DOES NOT WARRANT PRODUCTS UTILIZED IN THIS INSTALLATION WHICH IT HAS NOT FURNISHED OR ENDORSED AND SPECIFICALLY DISCLAIMS LIABILITY, UNDER ANY THEORY OF LAW, ARISING OUT OF THE INSTALLATION AND PERFORMANCE OF, OR DAMAGES SUSTAINED BY OR CAUSED BY, PRODUCTS NOT FURNISHED AND/OR ENDORSED BY CT.

4. THIS OVERBURDEN LIMITED WARRANTY CONSTITUTES WRITTEN APPROVAL BY CT'S COMMERCIAL TECHNICAL SERVICES DEPARTMENT AS A MODIFICATION TO COVERAGE UNDER THE NDL REFERENCED ABOVE. THIS OVERBURDEN LIMITED WARRANTY IS IN ADDITION TO, BUT DOES NOT REPLACE, THE TERMS, CONDITIONS AND LIMITATIONS OF THE APPLICABLE NDL. THOSE TERMS, CONDITIONS AND LIMITATIONS OTHERWISE REMAIN IN FULL FORCE AND EFFECT. EXCLUDING THE INSTALLATION OF THE MODULAR ROOFING SYSTEM UNDER THIS OVERBURDEN LIMITED WARRANTY, IN THE EVENT OF A CONFLICT BETWEEN THIS LIMITED WARRANTY AND THE NDL, THE TERMS AND CONDITIONS OF THE NDL SHALL PREVAIL.

Endorsement to Warranty _____

CertainTeed ("CT") warrants the roof membrane or system associated with the above warranty number with an Enhanced Wind Warranty Endorsement, extending warranty coverage for leaks caused by wind speeds above the published, maximum warranted speed, Force 9 on the Beaufort Scale (54 mph), up to ____ mph.

CT warrants that the roof membrane or system as applicable, when installed in accordance with CT-provided, Enhanced Wind Warranty Application instructions, will repair the roof membrane or system as applicable to the original watertight conditions up to the allowable speed of the Endorsement for the first ten (10) years of the warranty duration. After ten (10) years, the wind speed covered by the Endorsement will decrease by the following percentages during each subsequent year, but the covered wind speed will not go below the original published speed of Force 9 on the Beaufort Scale. All reductions are calculated and then rounded up:

- a.** 4% for 25-year NDL warranties
- b.** 5% for 20-year NDL warranties
- c.** 6.67% for 15-year NDL warranties
- d.** 8.3% for 12-year NDL warranties

10-year NDL warranties are not subject to wind speed proration.

The remainder of the NDL warranty shall remain unchanged and subject to the published terms. See warranty document for further details.

This Endorsement shall become effective only upon payment by the roofer of the applicable wind endorsement fee fixed by CT. (See Warranty Overview/Warranty Fee Schedule for fee schedule).

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

TABLE OF CONTENTS

1.0	CertainTeed LLC Commercial Roofing Policy
2.0	Limited Warranties
3.0	Roof Decks
4.0	Roof Insulation
5.0	Re-cover
6.0	Materials: Storage, Handling and Safety Data Sheets
7.0	Flintglas® & Flintlastic® Hot Asphalt Mopping Application
8.0	Flintlastic® Torching Application
9.0	Flintlastic® Cold Process Application
10.0	Flintlastic® Self-Adhering (SA) Application
11.0	Application Safety and Equipment Policy
12.0	Temporary Roofs
13.0	Cold Weather Precautions
14.0	Coatings and Surfacing
15.0	Nailable Substrate Fastener Data

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

1.0 CERTAINTEED LLC COMMERCIAL ROOFING POLICY

1.1 Recommendations

These recommendations contain the latest and best information we have relating to the application of CertainTeed Commercial Roofing Products manufactured by CertainTeed LLC (hereinafter referred to as CT). The roof systems described herein are based on our many years of experience in the built-up and modified bitumen roofing field. These recommendations have been prepared, and are offered as a guide, to assist architects, roof consultants, engineers, roofing contractors, and/or building owners (hereinafter referred to as designer/owner) who are responsible for the design and application of low-slope roof systems. Because CT does not practice engineering, design or architecture, neither the issuance of these guidelines, nor the review of any building construction, roof plans or installation details by CT representatives shall constitute any warranty by CT of such plans, specifications, details or construction, nor in any way constitute any acceptance by CT of same except for the purposes of determining the appropriateness of issuing a warranty for the roof assembly. Since good workmanship in applying any roof system is essential in the long-term performance of the roof assembly, a skilled contractor should provide a safe working environment, skilled and knowledgeable supervision and skilled trade workers to carry out the roof installation. The roofing contractor is solely responsible for the quality of the application of the roof system. The recommendations contained herein are provided for the consideration of the designer/owner. These recommendations should not be construed as being all-inclusive, nor should they be considered as a substitute for good application practices or recognized installation standards. The CT General Recommendations Section of the CertainTeed Commercial Roof Systems Specifications (hereinafter referred to as CT Specs) shall be considered part of, and used in conjunction with, all CT system specifications, Technical Bulletins and Technical Data Sheets, which shall be issued from time to time by CT and published on the CT website.

These recommendations are specific to the membranes and related materials manufactured and sold by CT.

When other products are incorporated into the assembly, which are not manufactured or sold by CT, please refer to the installation recommendations published by the respective manufacturers. Where there are conflicts in the recommendations, contact a CT representative or Tech Services for clarification.

The roofing contractor should be aware of all environmental restrictions limiting application in cold and wet weather. Every roofing project should have a safety and fall protection plan in place, which should include the proper handling and storing of materials.

CT materials are installed over a wide geographic area within North America. Local practices have been developed by roofing contractors to meet local conditions. CT cannot be knowledgeable of all local practices and conventions and does not endorse practices other than recognized industry standards.

For technical support, please contact the local Commercial Territory Manager or Tech Services at 1-800-396-8134 ext. 2.

CT reserves the right to change or modify, at its discretion and without prior notice, any of the information, recommendations, specifications, warranty terms or policies contained herein. This manual supersedes and replaces all catalogs and previous manuals. Refer to the CT website for all current publications.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

2.0 LIMITED WARRANTIES

2.1 Limited Warranty on Materials

All CT roll good products are eligible for a CT Limited Warranty on Materials. These warranties can extend in duration of 10 or 12 years. There is no warranty fee

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

associated with a CT Limited Warranty on Materials. In the event that there is a failure of the CT product during the warranty period CT, at its sole discretion, shall provide the appropriate replacement materials or refund the prorated original cost of materials determined by CT to be defective.

Leaks or other membrane defects that result from the failure of the roofing contractor to follow CT's published application instructions and/or specifications, or from any other roofing contractor error, are not covered by this warranty, and this limitation shall apply even if the failure to comply with published CT requirements is the result of a designer/owner imposing a condition on the roofing contractor which causes or requires a violation of these requirements. See a specimen copy of the CT Limited Warranty on Materials in the Warranties Section of this manual for additional details and conditions.

2.2 Limited Warranty on Systems

Subject to conditions enumerated in Section 2.5, all published CT roof systems are eligible for a CT Limited Warranty on Systems. These warranties can extend in duration of 10, 12, 15, 20 or 25 years depending upon the plies and component materials as outlined in CT published specifications. There is no warranty fee associated with a CT Limited Warranty on Systems. Please see actual warranty for specific coverages. Leaks or other membrane defects that result from the failure of the roofing contractor to follow CT's published application instructions and/or specifications, or from any other roofing contractor error, are not covered by this warranty, and this limitation shall apply even if the failure to comply with published CT requirements is the result of a designer/owner imposing a condition on the roofing contractor which causes or requires a violation of these requirements. At its sole discretion, CT reserves the right to refuse issuance of its CT Limited Warranty on Systems on projects when an owner, architect, engineer or consultant imposes any condition upon the roofing contractor which results in roof application procedures that fail to comply with published CT requirements. See a specimen copy of the CT Limited Warranty on Systems in the Warranties Section of this manual for additional details and conditions.

2.3 NDL Limited & Full System NDL Limited Warranties

CT offers a selection of No Dollar Limit (NDL) Limited Warranties. These warranties can be obtained for a duration of 10, 12, 15, 20 or 25 years depending on the configuration of the roof assembly. It is within CT's sole discretion to determine whether a roof or roof assembly is suitable for issuance of NDL Limited Warranties upon project completion.

Fees vary depending on a variety of factors including, but not limited to duration of warranty, size of the roof, products used, etc., and are subject to change at the sole discretion of CT. Should a leak occur in the roof assembly, or should the watertight integrity of the membrane be compromised, the roofing contractor is responsible for all workmanship issues contributing to leaks during the first two (2) years of the warranty. After the two-year anniversary of the warranty issuance, CT will authorize repairs at its own expense in order to restore the roof membrane to a watertight condition, subject to the applicable warranty's terms and conditions. Products manufactured, sold or approved by CT can be incorporated into the NDL Limited Warranty. CT can also accept products manufactured by third parties that are incorporated into the roof assembly; however, these products will not be incorporated into the NDL Limited Warranty.

NDL Limited Warranties, at the sole discretion of CT, may be voided at any time should it be found the roof assembly has not been installed in compliance with the CT installation recommendations published at the time of installation.

In order for CT to consider the issuance of an NDL Limited Warranty the following process must occur:

The roofing contractor shall apply for the issuance of an NDL Limited Warranty by logging onto www.ctndl.com and completing the project registration form. All information requested must be completed in full for the consideration of the project. Applications for NDL Limited Warranties must be received not later than five (5) business days prior to a job start, and formally approved by CT prior to commencement of the installation of the roof system. Warranty fee deposits must be received prior to the issuance of warranty approval. CT Silver and Gold Star contractors have a unique login process that expedites the application process. Alternatively,

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

a contractor may contact the CT Commercial Territory Manager (“CTM”) or Tech Services to obtain warranty information. Contractors who log onto the system for the first time, or have not visited the site for an extended time will be prompted to update their information. Non-Star designated contractors can apply for a “one-time” account and submit a brief description of the upcoming project for review and consideration by the CTM. If approved, the contractor may then move forward with the NDL Limited Warranty Application.

Login to the online warranty registration website, www.ctndl.com; select the “Create New NDL Warranty Application” link in the fields found on the left side of the screen. The following screen provides one option for NDL: Select an NDL/Full System Roofing Spec. CT will determine whether or not the project is eligible for a Full System NDL or a standard NDL Limited Warranty. After completing the requested information, select “Submit” and the application will generate a Job Registration and Warranty Request Form on the following web page.

The Job Registration and Warranty Request Form will automatically be forwarded to the CTM for review and, in turn, forwarded to the Manager, Commercial Roofing Systems for final review and processing. Once an application and warranty fee deposit has been received and approved by CT, and roof installation work has begun, the warranty deposit is nonrefundable. NDL Limited Warranties for roof systems less than 100 squares in size shall be subject to a minimum warranty fee, as published in the CT Warranty Fee Schedule and published on the CT website.

If approved, the warranty application shall be forwarded to Tech Services for processing. Upon registration and Approval, the roofing contractor shall notify the CTM of the intended commencement date. A pre-job inspection may be requested to review the project conditions for conformance with the NDL Warranty Application and the selected roof specification.

Inspections, which are for the sole benefit of CT, may occur prior to, during or after the roofing application, or as determined appropriate by CT.

Upon receipt of the Notice of Completion, CT may choose to conduct a final inspection to document conformance with the specification and the general recommendations required for the issuance of an NDL Limited Warranty. An inspection report and roof plan shall be submitted by the CTM for final review by Tech Services. After payment of all warranty fees and completion of all other requirements, the requested warranty will be issued in PDF format to the roofing contractor. The contractor will be notified via email at the time of warranty issuance. It is the responsibility of the roofing contractor to deliver the warranty to the building owner.

Specimen copies of the NDL Limited Warranties and the Roof Maintenance Program are available in the Warranties Section of this manual. Additional warranty information can be found in this section.

2.4 THE OBLIGATIONS OF CT CONTAINED IN THE WARRANTIES ARE EXPRESSLY IN LIEU OF ANY OTHER LIABILITIES, OBLIGATIONS, GUARANTEES AND WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL CT BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND. SOME STATES DO NOT ALLOW EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY.

2.5 Conditions pertaining to the issuance of an NDL Limited Warranty

- A) Applications for NDL Limited Warranties must be received in a timely manner and approved by CT prior to commencement of roofing.
- B) The warranty fee must be received prior to the installation of the roof membrane assembly.
- C) CT reserves the right to determine at the completion of a project the suitability of the installation and project conditions for the issuance of the requested warranty. CT further reserves the right to offer an alternate warranty should there be any change or modification from the submitted NDL Warranty Application. If no warranty is offered, any unused portion of the warranty fee deposit shall be returned to the roofing contractor.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

- D) NDL Limited Warranties may be voided during the warranty period should it be discovered that any portion of the warranted roof assembly has not been installed in general compliance with the CT published installation recommendations current at the time of original installation.
- E) Once an NDL Warranty Application and warranty fee have been received and approved by CT, and roof installation work has begun, the fee is nonrefundable except as noted in section C.
- F) NDL Limited Warranties on roof systems less than 100 squares shall be subject to minimum warranty fees as published in the CT Warranty Fee Schedule.

2.6 No NDL Limited Warranty of any type shall be issued for any low-sloped roof system installed on or over the following structures, without the prior express written Approval by Tech Services:

- Cold storage buildings;
- Private residences;
- Condominiums or co-ops;
- Storage silos;
- Heated tanks;
- Structures located outside the United States and Canada;
- Structures with conduit or piping installed above the roof deck and under the roof membrane;
- Membrane installations over thermal insulation or coverboards not approved by CT;
- Roofs without positive drainage (See Section 3.3);
- Lightweight Insulating Concrete ("LWIC"), unless the substrate is vented in accordance with CT installation recommendations;
- Installation over an existing roofing/insulation system containing moisture and/or improperly prepared surfaces;
- Any surface that is not readily accessible for inspection;
- Plywood decks less than 15/32" in thickness or without adequate edge support on all four sides; or
- Structures with high interior humidity uses such as swimming pools, car washes, pulp and paper plants, food processing plants, etc.

CT will not issue, in lieu of a warranty, any written approval or acceptance of plans, specifications, details, applications or roofer performance, or otherwise accept

any responsibility for any roof system as a substitute for a roof membrane limited warranty.

3.0 ROOF DECKS

3.1 CT Technical Personnel

CT technical personnel may be consulted to determine if a roof deck is suitable for the installation of a warranted membrane assembly. The consultation is solely for the suitability of the deck for the installation of a warranted system and shall not be a substitute for a complete roof design. The selection of the proper roof assembly, the suitability of an existing substrate, the appropriateness of adding insulation and the design of vapor retarders, expansion and control joints and the detailing of roof transitions are design considerations that remain solely with the designer of record.

3.2 Roof Decks

Roof decks shall be constructed in accordance with the deck manufacturer's specifications, generally accepted engineering principles, the recommendations of the roof deck industry association and the applicable codes at the time of construction. The roof deck shall be designed to properly support and secure the new roof assembly. The deck system shall be sufficiently rigid to support the roof assembly. The decking design shall be a minimum of L/180 or the minimum deflection required by local code at the time of construction. Care should be taken when temporary loads are applied to avoid any permanent deflection. All roof deck surfaces shall be dry, smooth, clean and free of sharp projections and depressions. All openings in the deck shall be fully supported on all sides. All projections through the deck shall be completed prior to starting the application of the roof system. Installation of conduits or piping above the deck and under the roof membrane is not acceptable and shall not be warranted by CT.

3.3 Roof Drainage

The roof surface that is to receive the roof membrane shall have slope to water-collection devices. A drainage calculation determining the quantity of water that will fall on the roof and how it is to be taken off the roof is a part of good roof design. Model building codes and good roofing

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

practice have established a minimum slope for low-sloped roofs at 1/4":12 running inches. Codes also recognize the challenges to meet this criterion in re-roofing of existing buildings. All roof areas shall be designed and installed to drain without holding water on the roof surface. Water collection on the roof surface can be detrimental to the roof membrane and may void an existing warranty. Water should not pond in drain sumps or any other collection area that is covered in roof membrane. CT may accept limited and minor areas of ponding under the terms of the warranty; however, sacrificial surfacing may be required to maintain the warranty.

All roofs shall have an overflow system adjacent to drains or scuppers to collect and direct water off the roof should one or more water collection device fail. Overflows are required by most local building codes and should be incorporated into any roof design.

3.4 Expansion and Control Joints

Expansion joints are designed into structures to allow the structure to move during thermal changes and to control the potential for damage during a seismic event. These joints extend through the structure from the exterior to the interior. The structural engineer of record shall design expansion and seismic joints. The roof assembly shall provide a closure to the joints but may not include the insulation, air barrier or secondary containment that may be required to create a complete expansion or seismic joint assembly.

Typically expansion and/or seismic joints are designed into structures at changes in direction at "L" or "U" shaped buildings, changes in decking types, changes in decking direction, transitions with building additions and the break up of large structures. Expansion joints are typically designed to run the entire length of the building. The joint must be watertight at its transition with the exterior wall or perimeter edge. Joints may be formed from pre-fabricated metal and EPDM assemblies with pre-formed corners and transitions. Sheet metal covers with membrane closures, as detailed in SMACNA¹, or in-line expansion joints formed from polymeric and bitumen membranes that integrate into the new roof

assembly are all acceptable alternatives. Contact the CT Technical Department for job specific recommendations.

Control joints may be raised or in-line joints that extend only into the roof membrane and do not extend into the building structure. These may be referred to as control joints or roof dividers. These types of joints are typically only installed on very large roofs where few or no expansion joints have been designed into the structure. Typically, if the roof membrane has not been broken over an area of 300 feet, a control joint or roof divider should be installed. As noted, the designer should always consider the effects of expansion or control joints on roof drainage and provide for positive drainage and adequate water collection devices.

Expansion and seismic joints are designed to run the full length of the roof and terminate at the building perimeters where a transition is made to a vertical joint. The two types of joints must be designed to connect and form a watertight seal. All joints shall be fully supported with woodblocking or pre-formed metal supports. These elements must be adequately secured to the deck or structure and must provide a suitable attachment surface for the joints. Raised joints must be a minimum of 8" above the roof membrane surface and should be protected from the potential of snow build-up in Northern regions.

3.5 Steel Decks

Steel decks shall be designed to provide the structural support requirements mandated by local codes. Steel decks shall be designed and attached in compliance with the recommendations of the Steel Deck Institute. Maximum deflection between spans shall be no greater than L/180 or the criteria established by the local building code. Where the roof assembly is to comply with FM Global criteria, the steel deck must meet the requirements of FM Global and must comply with the requirements published in the current Loss Prevention Data Sheets.

All roof assemblies installed over steel decks shall be mechanically attached. Insulation, or at a minimum, a thermal barrier board, must be installed prior to the installation of the new roof assembly. Roof insulation or a thermal barrier board must be secured with a sufficient number of mechanical anchors to resist the uplift pressures

¹ Sheet Metal and Air Conditioning Contractors' National Association – <http://www.smacna.org/>

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

established by the local building code, the project insurance requirements or uplift pressures established by the designer of record.

All mechanical fasteners and stress plates shall be corrosion resistant and meet the corrosion resistance criteria published in FM Global Test Standards 4450, Section 5.4², and 4470, Section 4.7³. Refer to appropriate sections of the CT Specs for attachment of insulation, thermal barrier boards and roof membrane. Steel deck side laps shall be mechanically fastened with #10 diameter self-drilling fasteners. Refer to the FM Global Loss Prevention Data Sheets or the Steel Deck Institute for spacing at the required uplift pressures.

Fasteners may require enhancement during a re-roof where they were not installed during the original installation. Woodblocking shall be installed at all perimeters to match the height of any insulation and coverboard or any thermal barrier board. All membrane and flashings shall be secured to the blocking in compliance with the CT construction details. Woodblocking shall be attached in compliance with the requirements set forth in Section 4.6.

3.6 Poured Structural Concrete Decks

Poured structural concrete shall have a minimum compressive strength of 2,500 psi. All cast-in-place concrete roof decks shall be constructed in compliance with ACI 523.2R⁴. Surfaces shall be smooth and dry, free of any substances including curing compounds, admixtures or surface contaminants that could inhibit the bond of asphalt or adhesives used to bond insulation or membrane to the roof deck surface. Woodblocking shall be either incorporated into or attached to the deck during construction to provide for the securing of the roofing membrane and flashings at perimeter edges, penetrations, and other deck openings. Woodblocking shall be attached in compliance with the requirements set forth in Section 4.6.

All concrete deck surfaces shall be primed with ASTM D41⁵ primer, and allowed to fully dry prior to the application of asphalt. Any alternate primer shall be submitted to Tech Services for approval prior to use. When a roof membrane is to be directly applied to the deck care should be taken to ensure the deck is adequately dry to install the roof membrane. There are multiple published methods to determine the moisture levels within the concrete slab. CT recommends the test method established in ASTM F2170⁶, which measures moisture within the deck slab prior to the application of any roof membrane.

Notwithstanding any testing, a test area of asphalt should be applied after the application of primer to the deck surface. The asphalt should remain fully bonded to the deck with no frothing at the point of initial application. See Section 9.0 for application of a coated base sheet or membrane in a cold process. Where self-adhered base sheets are applied refer to Section 10.0 for application recommendations.

3.7 Pre-Cast Concrete or Gypsum Decking Units

These proprietary deck systems shall be installed in strict compliance with the manufacturer's installation recommendations and in compliance with local code. The attachment rails or bulb T's shall be fully secured to the underlying structure to meet the uplift requirements of the code. Joints shall be fully grouted, where required, and panel transitions shall be planar. Misaligned joints and non-planar conditions are not acceptable for the application of roofing.

Prior to the application of any roof membrane, the bonding surface must be smooth and flat. This can be achieved with asphalt based filler or other materials only after confirmation of an adequate bond to the substrate and for the materials to be applied over the filler. Surface conditions and test data shall be provided to Tech Services prior to the use of any fillers.

² FM Global 4450: Approval Standard for Class I Insulated Steel Deck Roofs, 2002

³ FM Global 4470: Approval Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Assemblies for use in Class I and Noncombustible Roof Deck Construction, 2012

⁴ ACI 523.2R: Guide for Precast Cellular Concrete Floor, Roof, and Wall Units, 1996

⁵ ASTM D41: Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing

⁶ ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

All poured gypsum decks shall have a mechanically attached base sheet prior to the application of membrane or insulation. For alternate attachment methods, contact Tech Services for project specific alternatives.

All concrete panels and gypsum planks shall be fully primed with ASTM D41 primer. Woodblocking shall be attached to the deck during construction to provide for the securement of the roofing membrane and flashings at perimeter edges, penetrations, and other deck openings. Woodblocking shall be attached in compliance with the requirements set forth in Section 4.6.

3.8 Pre-cast and Pre-stressed Concrete Elements

Pre-cast and pre-stressed concrete elements are typically long, and designed to span long distances. To adequately support the dead load and the calculated live load, the elements are designed with a camber that is reduced once the element is set into place. Due to the variability in the camber there can be variation of the elevations of each of the elements. This creates a non-planar deck that is not suitable for the application of the roof membrane. In some cases a reinforced concrete topping slab is cast over the pre-cast to create a smooth surface for the application of the roof. In others, the joints are filled and the variations are tapered and feathered in an attempt to create an acceptable surface for the application of the roof assembly. The latter creates surface variations that will not allow for the application of adhered, rigid insulation.

CT will not warrant any roof membrane assembly installed directly over pre-cast or pre-stressed concrete elements without the installation of a reinforced topping slab or an insulating layer that is fully bonded to the deck surface with no voids or bridging of the insulation panels. Where applied in hot asphalt, all concrete surfaces shall be fully primed with ASTM D41 primer. Woodblocking shall be attached to the deck during construction to provide for the securing of the roofing membrane and flashings at perimeter edges, penetrations, and other deck openings. Woodblocking shall be attached in compliance with the requirements set forth in Section 4.6.

3.9 Lightweight Insulating Concrete Decks (LWIC)

Lightweight poured-in-place insulating concrete can be either aggregate or cellular based, and shall have test data to confirm the type of pan for the casting of the deck; the minimum casting criteria for thickness of the LWIC over the top surface of the polystyrene insulation and the design pressures for the decking assembly when tested with multiply built-up roofs and modified bitumen roof assemblies. All LWIC decks shall be constructed in compliance with manufacturer's installation recommendations and the requirements of the local building code. The test data shall include the type and density of base ply fasteners to secure the coated base sheet. LWIC decks always have residual moisture; therefore, all roof assemblies shall be vented. See Pressure Relief Vent Section below for venting criteria.

Decks of a density less than 22 pounds per cubic foot (pcf) and a minimum compressive strength of 125 pounds per square inch (psi), are not eligible for any warranty and will not be supported by CT. LWIC decks of any type shall have a minimum top surfacing fill of not less than 2" over the polystyrene insulation or the deck. Fastener type and density shall be determined by the test data submitted with the Job Registration; however, all fasteners must demonstrate minimum withdrawal resistance performance of 40 lbf (minimum characteristic force) in test cylinders cast during the deck pour or in the actual deck.

LWIC decks must not be subjected to temperatures below 40° F during either application or curing. Decks, which have frozen, shall be replaced prior to the application of a roof membrane. Cast surfaces shall be smooth, dry to an industry recognized standard, clean and free of sharp projections and depressions. Prior to application of roofing, the roof deck manufacturer shall provide a letter to Tech Services stating the roof deck meets the criteria of the test data submitted for warranty approval and is suitable for the application of the roof assembly. approval of the roof installation will not be provided until the certification has been provided.

Caution: Additional moisture may accumulate in the roof deck as a result of construction moisture. Measures should be taken to minimize additional moisture within the roof. The roofing contractor may consider measuring moisture levels to confirm moisture levels are remaining static or are decreasing after the installation of the roof.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

All roof assemblies over LWIC shall include a nailed base sheet such as Yosemite® Venting Base Sheet or a fully coated base sheet. The base sheet shall be attached with sufficient fasteners of a type and density to meet the uplift criteria of the local code or the intended roof design. The practice of installing pre-formed insulation boards directly over lightweight insulating concrete is not recommended and will not be warranted.

Pressure Release Vents: Install a minimum 4" diameter "one-way" pressure relief vent fitted with minimum 4" flanges and a weather-resistant hood, 20 ft. from perimeter edges and 40 ft. o.c. thereafter, located directly over 4" diameter openings cut through the roof system and into the insulating fill not less than 2".

NOTE: Lightweight concrete decks installed over non-vented decking systems must be designed specifically for the purpose. Perimeter venting of the assembly shall only be approved after the decking manufacturer has provided evidence of adequate drying techniques and historical drying performance. Pressure relief vents with a minimum diameter of 4" shall be installed at a minimum density of one every ten squares in addition to any perimeter venting. CT shall not be responsible for damage or failure of the roofing system caused by the lightweight insulating concrete deck or fill, or failure to follow deck installation or venting recommendations.

3.10 Wood Plank Decks:

Wood deck planks shall have a minimum thickness of 1", shall be integrated to the adjoining plank with a tongue and groove or ship lapped configuration, and shall be secured to the underlying structure with sufficient screws and/or nails to resist the code-required uplift pressures. Wood decking shall be fully seasoned and shall have a moisture content below 20% by weight. The decking shall have no protruding fasteners or other elements that could damage the roofing membrane. End cuts shall be fully supported and shall have minimal gaps. All broken or damaged decking shall be replaced prior to the application of any roofing or insulation. Wood decks shall be adequately supported to meet the local code-required loads and shall not deflect greater than L/180 or the maximum deflection requirements established under the local code.

Where decking has been installed over steel joists, fastener heads shall be countersunk below the deck surface. Prior to application of any roofing installed with hot asphalt or cold adhesive, such as FlintBond Brush Grade, a dry sheathing paper, such as red rosin, shall be installed over the deck to prevent asphalt from dripping through deck. Knotholes or other voids in the deck should be covered with sheet metal prior to the application of the red rosin. All roof assemblies over wood plank decks shall include a nailed or self-adhered base sheet as the base layer of the roof assembly.

When self-adhering a base layer over wood plank decks, priming is required. Self-adhering over wood plank decks is not permitted by code in Miami-Dade County; check your local building code. At the end of the roofing membrane's life, roofing membranes self-adhered over wood plank decks will require replacement of the deck.

Self-adhering to resinous wood, such as pine, is prohibited.

3.11 Plywood and OSB Decks

All plywood and Oriented Strand Board (OSB) decks shall have a minimum thickness of 15/32" panels, shall be installed in compliance with the recommendations published by the Engineered Wood Association (formerly the American Plywood Association, 'APA') and the requirements of local code. Plywood and OSB panels shall be adequately gapped to allow for anticipated movement and expansion. Panels shall be nailed or fastened to meet the uplift requirements of the project and the minimum requirements published by the APA. When pressure- or fire-treated materials are used, stainless steel or other non-ferrous fasteners should be used, as recommended by the treating manufacturer. All edges of the panels shall be supported or clipped to avoid deflection greater than L/180 or the maximum deflection allowed by local code.

Some code jurisdictions require continuous edge blocking while others allow the use of "H" clips or other connecting devices. To avoid any bond of the roof assembly to the panels a dry sheathing paper, such as red rosin, may be applied to the substrate prior to the application of a nailed coated base sheet. Nailing of the base sheet shall be of sufficient type and quantity to meet the uplift resistance requirements of the project, but shall not be spaced more

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

than 9" o.c. on the 2" lap and two rows staggered placed 18" o.c. in the field of the sheet. Perimeter and corner areas shall have an increase of 50% and 100% respectively as a minimum criterion.

Flintglas® Type 4 or Type 6 ply sheets shall not be installed as a first layer over plywood or OSB decks. Internal roof drains shall be adequately sumped into the decking to collect water at the drains. Scuppers shall be installed to allow for flow of water through the water collection device without damming or reduced water flow. OSB or plywood may be used as perimeter wall sheathing in accordance with local building code and the most recent CertainTeed published application instructions.

When self-adhering a base layer over plywood or OSB decks, priming is required. Self-adhering over plywood or OSB decks is not permitted by code in Miami-Dade County; check your local building code. At the end of the roofing membrane's life, roofing membranes self-adhered over plywood or OSB decks will require replacement of the deck.

3.12 Poured Gypsum Decks

Poured gypsum decks shall be constructed in compliance with local code and The Gypsum Association.

Caution: Gypsum decks are typically cast with minimum or no slope; therefore, slope to create drainage must be accomplished by alternate means.

Gypsum roof decks shall have a minimum thickness of 2". Decks shall be designed to meet the combined live and dead load requirements of the code. The deck surface shall be smooth, dry, clean and free of sharp projections and depressions. Any cracks, soft spots, damaged reinforcing wire or other defects shall be repaired prior to the application of any roofing. Prior to the application of any roofing or insulation, a nailed, coated base sheet shall be applied to the deck with mechanical fasteners. Sufficient type and density of fasteners shall be used to meet the uplift requirements of the local building code and the design criteria of the project.

Where required, the fasteners shall have additional stress plates to spread the load over the surface of the base sheet. Nailing of the base sheet shall be of sufficient type and quantity to meet the uplift resistance requirements of the project, but shall not be less than 9" o.c. on the 2" lap and

two rows staggered placed 18" o.c. in the field of the sheet. Perimeter and corner areas shall have an increase of 50% and 100% respectively as a minimum criterion. If there is moisture in the deck, a vented base sheet such as Yosemite® Venting Base Sheet, in combination with perimeter venting, would be a prudent addition to the roof assembly. Where woodblocking is added to create a nailing substrate at perimeters and penetrations, the woodblocking should be secured to the underlying substrate and not the gypsum fill.

3.13 Structural Wood Fiber Decks

Structural wood fiber decks (SWFD) are typically individual panels or composite panels with insulation that are secured to the structure with rails or bulb Ts. Some panels are pre-coated with a base sheet while others have no surfacing. The underside of the panels is typically the ceiling of the interior space and should be protected from damage. Panel joints are integrated to provide support. Structural wood fiber panels shall be installed in compliance with the manufacturer's installation recommendations and in compliance with local building codes. SWFD must be protected from the elements once installed to avoid cupping, bowing and deformation of the panels. Before the application of the roof system, the deck shall be in proper condition for roofing. Where heights of deck joints vary, the deck erector shall level these with screed coat material as recommended by the deck manufacturer. The deck erector shall furnish written certification that the deck meets job specifications and deck manufacturer's requirements. The certification shall be forwarded to CertainTeed for inclusion in the warranty file. Notwithstanding the application of a base sheet on the panel surfaces, a nailed, coated base sheet is recommended prior to the installation of any roofing or insulation. A nailed, coated base sheet shall be applied to the deck with mechanical fasteners. Sufficient type and density of fasteners shall be used to meet the uplift requirements of the local building code and the design criteria of the project. Where required, the fasteners shall have additional stress plates to spread the load over the surface of the base sheet. Nailing of the base sheet shall be of sufficient type and quantity to meet the uplift resistance requirements of the project, but shall not be spaced more than 9" o.c. on the 2" lap and two rows staggered placed 18" o.c. in the field of the sheet. Perimeter and corner areas shall have an increase of 50% and 100% respectively as a minimum criterion.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

CT shall not be responsible for damage or failure of the roofing system caused in any way by the structural wood fiber deck or failure to follow instructions set forth herein.

4.0 ROOF INSULATION

4.1 Roof Insulation

Roof insulation is a common component added to the roof assembly to add thermal value to the building enclosure. Roof insulation can, depending on the deck type, be either mechanically attached or adhered to the roof deck with a variety of materials such as hot asphalt, foam, or cold adhesives. Non-foam insulations, such as perlite, wood fiberboard, water-resistant gypsum, high density polyisocyanurate and rockwool are suitable substrates and can be used either as insulation or a coverboard creating a suitable surface for fully bonding or spot-mopping roof assemblies. Coated base sheets and some ply sheets may be spot-mopped to the faced surfaces of polyisocyanurate but **MAY NOT** be spot-mopped to expanded or extruded polystyrene. Polystyrene insulation of all types is not a suitable substrate for the application of fully adhered roofing assemblies and must have a coverboard. Contact Tech Services for job specific application information.

Extreme care must be taken to keep hot asphalt from coming into contact with some types of insulation such as polystyrene. The function of a coverboard or certain roof insulations in spot mopped applications is to provide a smooth, dry, clean and firmly attached substrate to receive the roofing membrane. If insulation is furnished by CT, or has been approved by CT, the product may be an eligible component of the warranty. Where the insulation has been accepted by CT for use in a CT roof assembly, the insulation will not be a warranted component. All insulation shall be installed in compliance with CT's published installation recommendations.

CT reserves the right to accept or reject any roof insulation as an acceptable substrate for attachment or bonding of a CT roof system. Performance of an insulation or coverboard product that is not sold by CT shall not be warranted as a part of the roof assembly and CT shall not be responsible for damage or failure of the roof membrane caused by the insulation or coverboard.

CT will, at its sole discretion, approve, on a project-by-project basis, the use of third-party manufacturers' roof insulation in conjunction with warranted roof systems. The use of third-party insulation shall be approved prior to the commencement of the roof installation.

4.2 Insulation Storage, Handling and Cautions

Always follow instructions published by the manufacturer. Read handling and storage instructions prior to site storage and use. All insulation shall be properly protected from weather. Covering shall be breathable to avoid the build-up of condensation. Delivery wraps shall not be adequate protection without the addition of additional tarping. Tarps shall be adequately secured to resist wind. Store all insulation and related accessories off the ground on pallets or dunnage, completely protected against weather. Wet or damaged insulation shall not be installed and should be removed from site.

Prior to installation of insulation, inspect the substrate for suitability of application. Correct all unsuitable conditions prior to application. All insulation installed shall be fully covered and protected with roofing the same day. Water cut-offs shall be installed at exposed edges by close of each day and shall be removed prior to continuation of application. Some insulation coverboard and accessory materials, such as cant strips, are **FLAMMABLE**. If open flame or temperatures sufficient to ignite the materials are used in the application, a fire watch of not less than two hours shall be a part of any safety plan. Any flammable material shall not be directly exposed to flame or ignition sources. Where the roof deck is sloped greater than 1":12", insulation stops should be installed. At a minimum, insulation stops shall be installed every 16' to a slope of 3":12" and every 8' for slopes greater than 3":12".

4.3 Multi-layer Insulation Applications

To reduce thermal stress to the roof membrane, multi-layer insulation applications are strongly recommended. Joints in the insulation layers shall be staggered a minimum of 6" and joints shall be tightly butted. Where mechanical fasteners are used, only the base layer should be mechanically attached. Subsequent layers should be installed in asphalt or adhesive. The insulation or coverboard surface used for the installation of the membrane shall be planar and free from debris.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

Any gaps shall be corrected prior to application of the membrane. No insulation or coverboard panels should be less than 12" square when adhered or 24" square when mechanically attached.

4.4 Mechanical Attachment

All base insulation layers over steel decks shall be mechanically attached with sufficient fasteners and stress plates to meet the uplift requirements for the project. Fastener density shall be increased at perimeters and corners as required by code and the project requirements. At a minimum, fastener density shall be increased by 50% at the perimeters and 100% at the corners, providing there is no parapet with a height less than 36". Fasteners shall penetrate the top flange of the deck a minimum of ¾". To ensure securement to the deck, fasteners shall be sized to penetrate the bottom flute by ¾". Fasteners shall be fully seated but shall not be over-driven to damage the insulation or coverboard surface. Fasteners and stress plates shall be installed in compliance with the recommendations of both the fastener and insulation manufacturers. Where holes must be pre-drilled, such as gypsum and concrete, deck debris must be cleaned from the insulation surface prior to application of the roofing membrane. When projects are insured by or specified under the requirements of FM Global the requirements under the relevant RoofNav⁷ number and the related Loss Prevention Data Sheet shall be followed. For more information, visit www.roofnav.fmglobal.com. See Appendix I, Insulation Fastening Guide.

⁷ visit www.roofnav.fmglobal.com/

4.5 Coverboards

Coverboards are certain types of insulation or materials specifically designed for use as a bonding surface for roof assemblies. Foam insulations such as polyisocyanurate or polystyrene publish a dimensional change of as much as 2%. The National Roofing Contractors Association published Bulletin #9 in September 1988 recommending the use of coverboards to minimize blistering, enhance adhesion and to provide a stronger surface for the application of built-up membranes. While foam insulations produce higher R-values, surfacing materials such as wood fiberboard, perlite, rockwool, water-resistant gypsum, and high-density polyisocyanurates provide more suitable surfaces for the application of built-up membranes. A highly dimensional and

stable surface creates less stress on the membrane, reduces impact damage and typically enhances the bond of the roofing to the substrate layer.

4.6 Woodblocking

Woodblocking creates an attachment surface for the roof membrane, sheet metal and flashings. They are the first defense against wind damage to a roof. According to FM Global one of the most recurrent losses to roofs is failure of the perimeter elements⁸. Woodblocking must be properly secured to resist wind uplift exerted on both the roof membrane and the sheet metal flashings. Woodblocking should be attached to the structure wherever possible. See CertainTeed Technical Bulletin on Woodblocking attachment for further information and recommendations. Woodblocking shall be the height of the combined height of the insulation and coverboard and shall be a minimum 3½" in width. Where woodblocking is stacked more than 4½" in height, the minimum width shall be 5½". Joints in multiple layers shall be staggered a minimum of 6" and butted to gap no more than 3/8". Woodblocking shall be pressure treated, #2 or better lumber with minimal deformation. Lumber shall be dry (<20% by weight) and protected from the elements when stored prior to application. Storage shall be under breathable tarps.

Due to the corrosive nature of pressure treatments, fasteners shall be stainless steel or protected from corrosion in compliance with the wood treater's recommendations for long-term, unexposed applications. Where tapered insulation is installed, woodblocking shall taper with the insulation to create a planar condition. All cant strips shall be fully supported by woodblocking.

4.7 Vapor Retarder

Vapor retarders are installed directly on the deck or, in the case of metal decks, over a thermal barrier board. Vapor retarders block water vapor rising from the building interior into the roof membrane layer where they can accumulate and condense. Water in the insulation can be damaging to both the insulation and the roof membrane. While minimal moisture accumulation within a roof assembly during cold months can dissipate during warmer months, an asphalt

⁸ FM Global Loss Prevention Data Sheet 1-49: Roof Perimeter Flashing

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

membrane has no perming capabilities; therefore, moisture will become trapped if the membrane is not vented. Vapor retarders can be formed by a variety of products, all of which have perming capabilities of less than one perm. Vapor barriers are similar materials that have a perming capability of less than 0.1 perm.

For a listing of materials used as vapor retarders, review the FM Global list of approved vapor retarders or the ASHRAE Handbook Fundamentals, Chapter 25.

CT materials, such as two layers of Flintglas® Ply 4 or Flintglas Premium Ply 6, applied in asphalt or a single layer of Flintlastic® modified bitumen torch-bonded or self-adhered, or Black Diamond® Base Sheet to a primed deck can form an effective vapor retarder. When the roof assembly is fully bonded, the uplift resistance of the roof assembly is dependent on the quality of the bond of the vapor retarder. Prior to the application of the insulation and roof membrane the quality of the bond should be carefully reviewed.

As a guide, vapor retarders are generally used where average January outside temperatures are 40°F or below, and winter season expected interior relative humidity is >45%. These conditions will generally create sufficient condensation to wet the insulation and reduce the R-value of the assembly. By installing a vapor retarder, rising moisture will be blocked; therefore, no condensation at the dew point level can occur. When the insulation is installed below the deck care should be taken to minimize condensation below the deck. The insulation should be protected with a vapor retarder on the warm side and a vented air space between the insulation and wood based decks is needed, and in many jurisdictions required by code. When a vapor retarder is incorporated into a roof system, one-way pressure release vents should be installed at the rate of not less than one vent per 10 squares of roof area to enhance venting of any moisture vapor that may become entrapped as a result of construction moisture built into the system and minor moisture migration that breaches the vapor retarder. Insulation shall be removed from the area directly under the vent opening and refilled with loose insulation, such as fiberglass, prior to vent placement.

Vapor retarders must be compatible with the roof assembly. Where insulation is to be mechanically attached the vapor retarder should create some type of seal around the fastener penetrations. Vapor retarders must be sealed to penetrations and should terminate on the top surface of the insulation, extending not less than 6" onto the insulation surface. Multi-ply systems should be feathered on the top surface of the insulation to avoid ridging.

When the roof assembly is FM Global insured or is specified to meet FM Global requirements, only those vapor retarders listed in the FM Global Roof Guide or listed on RoofNav will be acceptable. Unless the vapor retarder is formed from CT materials, CT is not responsible for damage to or failure of the roofing system caused by the use or absence of a vapor retarder

The need for a vapor retarder should be evaluated by a design professional that has knowledge of the structure and the local environment.

4.8 Base Ply Application

The base ply of selected CT roof assemblies may be mechanically attached, spot-mopped, or fully adhered to the insulated substrate. Carefully review the specification for the appropriate method over the installed insulation or coverboard. Mechanical attachment must be in compliance with the CT specifications and the general fastener recommendations in Section 15.4.1. Spot mopping must be in compliance with the CT specification and the asphalt recommendations in Section 7.0. When a coated base sheet is bonded in a full mopping of asphalt, the asphalt should be applied at the temperature at which the asphalt's apparent viscosity is 125 centipoise. The asphalt temperature should be +/- 25 degrees of the equiviscous temperature printed on the asphalt carton. Moppings shall be 25 lbs. per square, +/- 15%. When a ply sheet forms the base layer the ply sheet should be fully saturated with asphalt.

CT roof systems shall be installed over insulated assemblies in accordance with these guidelines:

⁹ ASTM E907: Standard Test Method for Field Testing Uplift Resistance of Adhered Membrane Roofing Systems.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

Foam and polyisocyanurate roof insulation require a divorcing layer of rockwool, mineral wool, wood fiberboard, perlite, high-density polyisocyanurate or fiberglass roof insulation prior to application of base ply, or spot-mop attachment of an approved coated base sheet prior to application of plies from the selected roof system.

Rockwool, mineral wool, wood fiberboard, perlite, high-density polyisocyanurate or fiberglass roof insulations of selected systems shall be set in a solid mopping of asphalt. Fiberglass insulation joints shall be taped prior to application of base ply.

Expanded/Extruded Polystyrene requires a divorcing layer of wood fiber or perlite roof insulation with all joints taped prior to application of roof system. Base ply shall be set in a solid mopping of asphalt to the overlay. Consult insulation manufacturer for restrictions and limitations on product usage.

5.0 RE-COVER

5.1 Re-Covering an Existing Roof

A re-cover is the application of a new roof over an existing roof assembly. If a roof installation is a re-cover, the existing roof assembly must be a suitable substrate for the application. Most codes limit re-covers to one additional roof. An evaluation of the combined live and dead loads should be carried out by a structural engineer prior to any application over an existing roof. Loading requirements may have changed since the original roof application increasing the live load requirements due to historical snow loading data.

The existing roof must be evaluated for moisture and for adhesion to the underlying substrate. Adhesion can be evaluated with either a vacuum test or bonded pull test as detailed in the FM Global Loss Prevention Data Sheet 1-52 or the vacuum test detailed in ASTM E907⁹. Moisture analysis can be either nuclear, capacitance or infrared. All wet roofing materials must be removed prior to any re-cover.

Should the existing roof be used as a bonding substrate, the surface must be properly prepared for the application of the new roof or insulating layer. Loose and large gravel shall be removed; blisters and splits shall be repaired and existing flashings should be removed to create a clean

bonding surface for new elements. Where the new roof is mechanically attached to the underlying substrate, withdrawal resistance testing should be carried out to confirm the attachment values for each fastening point. Testing should be carried out in compliance with ANSI/SPRI FX-1-2006 or TAS 105. Copies of the test protocols are available from Tech Services. Fastener values should meet or exceed 325 lbf or the fastener density should be increased. The test data shall be evaluated by the roof designer of record for the evaluation of the fastening pattern. Tech Services can provide test data for a wide variety of systems to assist in the evaluation.

Areas of ponding shall be corrected prior to the installation of a re-cover roof. Fillers designed to fill low spots should be used to correct these conditions. For a list of available products, please contact Tech Services.

It is the responsibility of the designer of record, and/or building owner to determine whether an existing roof is structurally sound, firmly attached, dry and suitable for re-cover. Tech Services can provide additional warranty information for specific re-cover projects.

5.2 Preparation and Field Conditions

The following requirements shall be used in conjunction with good roofing practices to qualify a new assembly for the Limited Warranty on Systems, NDL Limited Warranty or Full System NDL Limited Warranty:

- 1) Decks shall be dry, structurally sound and suitable for the application of the roof assembly.
- 2) Parapet walls, perimeter edges, equipment and load bearing supports, platforms, curbs, etc., shall be structurally sound and suitable for the application of new flashings and terminations.
- 3) Existing roof assemblies shall be evaluated to determine if additional expansion or control joints are needed. Visual observations of wall cracks, membrane splits and materials out of plane are indicators of such conditions.
- 4) The designer of record should evaluate combined live and dead loads to insure the re-cover roof assembly meets current code criteria and sound engineering practice.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

- 5) Existing plywood decking shall have adequate bearing or support of edge joints. In re-cover applications, remediation of the joints can only be achieved from the underside of the deck.
- 6) All re-cover roofs shall have positive drainage as defined in Section 3.3.
- 7) Existing roof insulation shall be dry and firmly attached. Where existing insulation is found to have insufficient attachment, attachment of the existing system shall be enhanced.
- 8) Existing roof system shall be compatible with the new roof system.
- 9) Existing membrane shall be dry and clean with all surface defects corrected.
- 10) Existing roof surfacing with 1/2" or larger aggregate surfacing shall be torn off or spudded to provide a smooth surface. Notwithstanding the gravel sizing, all loose gravel shall be swept from the existing roof surface.
- 11) Remove existing metal gravel stops and other termination flashings and replace with new metal to meet current code requirements. Flashing metals shall be corrosion resistant and shall not be thinner than 24 ga.
- 12) Existing counterflashings, copings, dunnage protectors, protective caps and other flashing metals designed to protect the roof shall be replaced where unsuitable for reuse. New metals shall be corrosion resistant and shall not be less than 24 ga.
- 13) Remove all clamping rings from drains and clean to bare metal. Damaged drain components shall be discarded and replaced with new. When in good condition, clamping rings may be saved for reuse. All bolts shall be replaced with new, preferably formed from non-ferrous materials. Stripped boltholes shall be drilled and tapped. All drains shall be fully secured to the deck with under deck clamps or other factory supplied clamping systems.
- 14) All abandoned and non-functioning equipment shall be removed. Any resulting deck opening shall be blocked and closed with appropriate decking.
- 15) Flashing heights shall be a minimum of 8" from the surface of the roof membrane. Where flashing terminations may be subjected to snow cover, the flashing shall be sealed.
- 16) Base and wall flashing shall be removed to create a sound surface for the installation of new flashings.
- 17) All roof penetrations require all new flashings in compliance with current CT detailing.
- 18) Equipment vibration shall be corrected.
- 19) Masonry surfaces above flashings shall be tuck-pointed and sealed. All horizontal masonry surfaces above the roof membrane shall be adequately protected from weather.
- 20) All pipes and condensation line supports shall be properly supported with factory supplied pipe supports or pressure-treated woodblocking. All supports shall have a protection layer of not less than one layer of Flintlastic® modified bitumen membrane. The support shall be designed to allow for pipe movement and shall not be secured through the roof membrane.
- 21) Condensation lines shall be formed from ultraviolet light-resistant materials and shall terminate at drains or scuppers. Condensate shall not run on the roof surface.
- 22) The practice of installing only a part of a total roof assembly, known as phasing, can be harmful to the finished roof assembly. CT will not warrant phased applications without prior approval.

NOTE: Substrates with two or more existing membranes are not eligible for a CT warranty. Extended warranties require new construction and/or complete tear-off.

5.3 Application Over an Existing Membrane:

After preparing and priming the existing membrane surface, spot mop with Type III or Type IV asphalt, forming 12" circles spaced 24" o.c., and install a Yosemite® Venting Base Sheet with side laps of 2" and end laps of 6". Asphalt quantity shall be 15 lbs. per square, or greater, depending on the roughness of the existing membrane surface. Granules and grooves shall be facing down. Alternatively, mechanically attach a Yosemite® Venting Base Sheet with minimum #12 diameter roofing fasteners and 3" stress plates to meet the design uplift criteria. At a minimum, mechanical attachment shall be placed 12" o.c. on a 3" lap and two staggered rows in the center of the sheet spaced 18" o.c. Insulation shall be solid mopped to buffer sheet. Alternate base sheets may be approved on a job-by-job basis. Contact Tech Services with project data for consideration of alternate base sheets.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

Rigid insulation may be applied directly to an existing built-up membrane providing the surface has been properly prepared, there is adequate attachment of the existing roof assembly to resist design and/or code required loads and the deck has been adequately leveled to provide full adhesion of the maximum 4' x 4' insulation boards. An initial glaze coat of asphalt can fill minor variations in the deck surface and provide a more suitable surface for the application of rigid insulation board.

6.0 MATERIALS: STORAGE, HANDLING AND SAFETY DATA SHEETS

6.1 Practices

Roofing and related materials must be clean, dry, and adequately protected prior to installation. Good roofing practices and industry standards shall be followed. Follow published storage and handling procedures published by the material manufacturers. All damaged and/or wet materials shall not be incorporated into the finished work. Materials shall be removed from site and disposed of in a legal manner.

Rooftop mechanical equipment, which requires periodic servicing, necessitates protection of the completed roof system against physical damage. Mechanical equipment should be installed prior to application of the roof membrane.

In new construction applications, it shall be the responsibility of the general contractor to prevent other construction trades from damaging the roof system during all phases of project construction.

6.2 Roll Roofing:

Roll goods shall stand on end with selvage edge up. Roll roofing products require careful storage and handling to prevent punctures, tears, and damage to edges. Wet or damaged roll roofing materials shall not be used.

Smooth-surfaced roll roofing products exceeding 35 lb. in weight per 100 square feet shall be rolled out, cut in lengths not to exceed 18 ft. and allowed to flatten prior to installation, except when rolled or machined and broomed into place. Mineral-surfaced roll roofing products shall be rolled out, cut in lengths not to exceed 18 ft. and allowed to flatten prior to installation (machine application not permitted).

Insulation and coverboards shall be stored on raised dunnage or pallets not less than 4" above the deck. Materials shall be covered with breathable tarps and adequately secured to resist wind and weather.

Asphalt and adhesives shall be stored in strict compliance with manufacturer's storage and handling recommendations. Refer to ARMA Technical Bulletin, "Recommendations Regarding Built-Up Roofing Asphalt"¹⁰ for additional storage recommendations. Cold adhesives shall be stored within the temperature limitations and properly protected from the weather and sunlight.

All accessories shall be protected from weather and sunlight in compliance with manufacturer's published recommendations and industry standards.

6.3 Safety Data Sheets (SDS)

The contractor shall maintain Safety Data Sheets (SDS) for all materials on the project site. The building owner should be provided with copies of all SDS documents prior to the project commencement. All SDS sheets are available in PDF format at www.certainteed.com/lowslopetechinfo.

6.4 Completed Roofing

Completed roofing shall be protected by the roofing contractor unless alternate arrangements have been made with the owner or general contractor. Protection of roof surfaces shall not impede water flow to the water-collection devices. Care should be taken to keep drains and scuppers free from debris.

6.5 Temporary Load

The contractor shall consult the Engineer of Record to determine temporary loads for stored materials on the roof deck.

¹⁰ http://www.asphaltroofing.org/pdf/tb_105.pdf

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

7.0 FLINTGLAS® AND FLINTLASTIC® HOT ASPHALT MOPPING APPLICATION

7.1 Certification

All grades of asphalt shall meet ASTM D312¹¹ certification. The asphalt producer shall provide certification upon request. Asphalt shall be homogenous, free from water and any foreign debris. A safety program shall be developed to address the storage, heating, pumping, and transport to the point of application. The contractor shall convey the safety plan to all members of the roofing crew.

Store all roofing asphalt in such a manner to prevent leakage, carton deterioration and moisture contamination.

7.2 Equiviscous Temperature

Temperature measurement equipment shall be installed on all kettles and heating equipment. The contractor shall monitor the temperature measurement equipment and maintain recommended temperatures as noted below.

ASTM D 312 TYPE	MOPPING TEMPERATURE	HEATING TEMPERATURE	MAX SLOPE IN./FT.
TYPE III	400°F +/-25°	500°F*	≤ 1"
TYPE IV	425°F +/-25°	500°F*	≤ 3"

* Type III and IV asphalt may be heated to 500°F in a re-circulating kettle

Asphalt should not be heated above the flashpoint. Asphalt should never be heated above 525°F and should not be held at 500°F or above for more than 4 hours.

CT supports the use of Equiviscous Temperature (EVT) as a guide for proper mopping temperature. Use of this concept will facilitate proper interply asphalt weights, adhesion and uniformity. The roofing contractor shall consult the asphalt manufacturer for information regarding EVT and flash point.

7.3 Hot Asphalt Application

Asphalt shall be heated to the EVT, as published by the asphalt producer. The EVT is the temperature at which the proper viscosity¹² for application has been attained.

(The apparent viscosity is 125 centipoise) as measured in compliance with ASTM D4402¹³. Mechanical spreader viscosity shall be 75 centipoise.

7.4 Heating

Asphalt shall be heated to +/-25 degrees of the published EVT as measured at the mop cart or mechanical spreader. Where there is simultaneous mop and mechanical applications, the EVT for mechanical spreader application shall be used for both application methods.

All asphalt shall be labeled with product "Type," EVT for both mop and mechanical spreader applications, and flash-point as determined by ASTM D92¹⁴.

7.5 Recommendations

CT recommends solid interply asphalt mopping at a rate of 25 lbs. per 100 square feet, applied uniformly with an acceptable variation of 5%, providing there is uniform mopping. For membrane applications, the mopping may be reduced to 22 lbs. per 100 square feet, +/-15%.

Spot mopping, when specified, shall be applied in 12" diameter circles 24" o.c. in all directions. Asphalt shall be applied at 15 lbs. per 100 square feet, +/-15%.

Mopping asphalt shall conform to ASTM D 312 Type III for applications on slopes up to 1" in 12" and Type IV for slopes up to 3" in 12". During application, a small amount of asphalt should extend beyond all side and end laps to ensure full-lap adherence.

7.6 SBS Membranes

CT recommends the use of Type IV asphalt notwithstanding the slope. The asphalt application temperature should not fall below 425°F.

7.7 APP Membranes

APP Membranes shall not be applied in hot asphalt or cold adhesive.

¹¹ ASTM D312: Standard Specification for Asphalt Used in Roofing

¹² Viscosity is a measure of the resistance to flow of a liquid. Centipoise is a unit of a liquid's apparent viscosity

¹³ ASTM D4402: Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer

¹⁴ ASTM D92: Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

7.8 Suitability

The suitability of the deck for application of asphalt shall be carefully evaluated by the contractor. The suitability shall be at the sole discretion of the contractor.

8.0 FLINTLASTIC® TORCHING APPLICATION

8.1 Application

Only membranes designated for torch application shall be applied with an open flame or hot air welder designed for modified bitumen applications. Welders designed for thermoplastic membranes shall not be used for modified bitumen applications.

8.2 Flintlastic membranes designed and designated for torch application shall be applied as follows:

- 1) Completely unroll the entire roll and align for application.
- 2) Tightly re-roll one end of the roll approximately halfway holding the membrane in alignment.
- 3) Apply heat to the backside of the roll with even motion across the full width of the roll while applying uniform pressure to the deck. Initially, the weight of the roll will provide adequate pressure. As the weight of the roll is reduced, additional weight is required. The flame should be positioned at a point approximately halfway between the top of the roll and the substrate surface until the bitumen back coating reaches sufficient temperature to create surface melting and flow. The burn-off sheet will melt with the back coating becoming glossy and the surface will flow.
- 4) Proper torching and pressure will result in a ½" of bleed-out at the roll edges. All side and end laps shall be "walked-in" during roll application while there is still bitumen flow. If sufficient heat has been applied, the walk-in will result in the ½" bleed out. Proper torch application will result in complete adhesion of the membrane to the underlying substrate. Extra care should be taken to ensure full adhesion of side and end laps. Probe all laps after the membrane has cooled. Any voids can be treated with a heated trowel and the membrane pressed into place.
- 5) Rewind the balance of the roll to the point where it is fully bonded to the underlying surface and torch weld the remaining membrane as described above.
- 6) Succeeding rolls and courses shall be installed in a similar manner. Side laps shall be aligned for a 3" overlap and end laps shall have a minimum 6" lap.
- 7) During end-lap application, trim the corner of the underlying sheet removing a triangular section. Follow with the overlapping sheet, trimming the upper outside corner in a similar manner. Corners shall be trimmed on an angle from end of roll to outside edge. Trimmed corners shall be completely covered by application of succeeding courses. Apply trimmed rolls to provide a full 6" end lap. See CT construction details for additional information. All end laps require the use of CT-21 — Endlap Detail.
- 8) Use of a mechanical torching wagon for membrane application requires careful monitoring of flame positioning to ensure uniform flame application across entire width of the roll as well as roll alignment. Rolls shall rest fully upon the roof deck to provide adequate pressure for bonding. Laps shall be walked-in during application. The use of torching wagons during windy conditions is not recommended. It is strongly recommended that a test section of membrane be applied each day to ensure proper placement of flames and application of pressure on the entire roll.
- 9) Side and end laps should be checked during application with a probe. Probing should be carried out under a quality assurance program. Open laps and areas without bitumen bleed-out should be corrected with a heated trowel and repair torch. DO NOT attempt to repair laps by torching the top surface of the membrane.

NOTE: Proper torching during roll application is critical. Overheating or under-heating is detrimental to the performance of the system and may damage the membrane. Flow properties of APP and SBS modified bitumen membranes are different. Test applications prior to actual applications are recommended to ensure proper torching technique for each type of membrane. For further information on torch applications contact Tech Services.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

9.0 FLINTLASTIC® COLD PROCESS APPLICATION

Cold process adhesives have been designed to provide an alternate to hot and torched applied membrane systems. Brush, spray and roller-grade adhesives have been designed for use only with SBS modified bitumen membranes, Flintglas Cap Sheets and coated base sheets. Cold adhesives shall not be used with Flintlastic APP or SBS modified bitumen membranes designed for torch applications. In addition, cold adhesives shall not be used with Flintglas BUR Ply Sheets or saturated felts. Cold adhesives shall be applied only at application rates specified in the Technical Data Sheets. Insufficient or excessive quantities may cause roof membrane failure or poor performance of the roof assembly. FlintBond® Brush or Spray Grades are designed to adhesively bond interplies and cap sheets to one another. Carefully read the various application recommendations to ensure proper application quantities and application methods. The side and end laps of Flintlastic and Flintglas cap sheets shall be fully coated with adhesive and, after alignment and placement, rolled with a 4" steel roller. Lap edges should have a small bleed-out of adhesive to confirm there is adequate adhesive at the laps. Base flashings, wall coverings and vertical details shall be adhered with FlintBond Trowel Grade adhesive and mechanically attached similar to CertainTeed's published construction details for hot asphalt applied systems. Initial interply bonding occurs typically in about three days but can vary depending on weather conditions. Full adhesive cure time is typically 45 days. Multiple layers of cold process adhesive will take longer periods to fully cure out. Refer to the Technical Data Sheets for FlintBond Brush and Trowel Grade adhesive application including application quantities and application restrictions. CertainTeed cold process systems are designed as a sole system and should not be mixed with hot asphalt or torch-welded applications.

10.0 FLINTLASTIC® SELF-ADHERING MODIFIED ROOFING APPLICATION

10.1 Flintlastic SA

Flintlastic SA self-adhered membranes are modified bitumen membranes designed for field installation without bonding adhesives or hot asphalt application. The base and interply sheets are manufactured with a proprietary permanent blue film on the topside, designed to provide a smooth, clean surface to enhance adhesion for successive plies of material. The interply sheets and cap sheets have split-release films on the underside that are removed to expose the specially formulated SBS adhesive during the application process. Flintlastic SA cap sheets feature an additional selvage release film. Flintlastic SA NailBase is fastened in the same manner as all CertainTeed base sheets. Flintlastic SA PlyBase and Flintlastic SA MidPly are interply sheets that are also acceptable as base plies on certain non-nailable substrates, cover boards and polyisocyanurate roof insulations. Accessory materials include FlintPrime® and FlintPrime SA primers, FlintBond® SBS Modified Adhesives, Trowel Grade and Caulk Grade. An 18" wide, 2" to 4", industrial steel roller is required to roll installed sheets. The materials are thermo-activated and application is recommended at ambient temperatures of 50°F or better. When ambient temperatures are between 20°F and 49°F, cold weather application instructions are to be followed, utilizing a hot air welder for side laps, end laps and details. Contact Tech Services for details.

Flintlastic SA membranes shall be cut in manageable lengths, and positioned and aligned in place. The material is folded lengthwise, first from the downslope side, to remove the lower split release film. Once pressed into place, repeat for the upper-slope side. Clear release film is factory-applied to Flintlastic SA Cap selvage edges; remove release film to adhere overlapping cap sheet courses.

All end laps require the CT-21 End Lap Detail cut. When ambient temperatures are 50°F and warming, end laps of Flintlastic SA cap sheets are set in a solid application of FlintBond Trowel Grade as are all construction details, such as base flashings or wall coverings when applied over granule surfaces. All materials shall be installed in

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

a continuous application. Stop work if poor adherence is observed. The blue film on the topside surfaces of the Flintlastic NailBase, Flintlastic PlyBase and Flintlastic MidPly sheets is permanent and should not be removed. Do not leave SA NailBase, SA PlyBase or SA MidPly exposed overnight; install cap or cover with tarp to avoid degradation of permanent blue film. Smooth and secure fully adhered SA base, interply and cap sheets with a weighted industrial roller after each ply is installed from the center of the sheet outward in the cross direction; **DO NOT ROLL ALONG THE LENGTH OR IN THE MACHINE DIRECTION OF THE ROLL.**

10.2 Self-Adhered Modified Bitumen Base Sheets

CertainTeed offers self-adhered base sheets for use with non-self-adhered cap sheets. These materials are manufactured with sand or mineral surfaces on the top side designed to accept successive moppings of hot asphalt or torch-welded applications. Split-release films are featured on the undersides that are removed to expose the specially formulated SBS adhesive during the application process. Flintlastic Ultra Glass SA and Black Diamond® Base Sheet may be utilized as base sheets on certain non-nailable substrates, coverboards, polyisocyanurate insulations or as interply sheets in hot asphalt applied or torch-welded roofing assemblies. Flintlastic Ultra Glass SA may also be used as the base ply in Flintlastic cold-process applications.

CertainTeed self-adhered modified bitumen base sheets shall be cut in manageable lengths, and positioned and aligned in place. Successive asphalt moppings or torch welding applications provide the heat necessary to activate the specially formulated adhesive to insure full bonding in normal and cold-weather applications. These materials, when used as vapor retarders in non-hot asphalt applied insulated assemblies, may require torch heating to provide full bonding. Flintlastic Ultra Glass SA, when used in cold process assemblies, relies on thermo activation and application is recommended at ambient temperatures of 50°F or better. The special precautions outlined in Section 13.4 should be followed for this product in cold-weather.

These materials are not designed nor intended for use with Flintlastic SA self-adhered modified membranes.

11.0 APPLICATION SAFETY AND EQUIPMENT POLICY

11.1 Application

Application of CT Flintlastic® and/or Flintglas® may require the use of hot asphalt and/or an open flame torch. Improper

application practices may cause physical injury to the applicator or damage to property. Safe torching and hot asphalt applications require constant safety supervision on the part of the applicator. The applicator shall develop a safety plan, which shall be communicated to the crew. The applicator is solely responsible for ensuring safe application, utilizing properly constructed and maintained torching and mopping equipment employing only qualified personnel. Particular care must be taken when working around combustible materials. When conducting a re-roof, proper preparation of the existing surface is required. Some substrate materials may be combustible and must be monitored after application if an open flame is used. The recommendations provided herein are intended as general guidelines and are not all-inclusive. Roofing applicators should establish a complete safety and fall protection program, and ensure that all personnel are fully trained and qualified for the duties they are hired to perform. Consult your local LP dealer, National LP Gas Association, National Fire Protection Association, the National Roofing Contractors Association, and the Asphalt Roofing Manufacturers Association for further information and safety recommendations. All installers should be familiar with OSHA, state and local safety requirements before the commencement of any project.

CT requires the installation of a base sheet as an appropriate base layer for the roof application. Consult CT specifications or consult Tech Services for recommended base sheets. Base sheets may be fully adhered in hot asphalt using conventional mopping techniques. Roofing applicator should not come in contact with the hot asphalt during application. CT does not endorse “flying-in” or “mop and flop” methods of application and is not responsible for bitumen dripping over or through roof deck.

CT recommends torch application only to noncombustible materials and substrates. **DO NOT** apply open flame to wood, plywood, fiber cants, combustible insulation (including existing roofing materials) or other combustible substrates and materials. CT recommends at least one fire extinguisher (type ABC or halon) be provided for each torch operator. The fire extinguishers should be regularly checked and located within easy reach of the torch operators. In addition

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

to the above, CT recommends the following safety precautions be observed:

- 1) Inspect all torching equipment daily before operation. Inspection should include torches, LP gas cylinders, valve regulators, hoses, all connections, and fittings for damage and leaks. Leak inspection should be performed with soapy water only. Refer to torch manufacturer's published safety recommendations. Maintain equipment manuals on the roof.
- 2) Secure cylinders in an upright position on a level surface. Do not invert or lay cylinders on their side. Cylinders shall be kept well away from torching area and shall not be exposed to open flame or other sources of ignition.
- 3) Do not apply flame to LP gas cylinders to increase pressure.
- 4) Do not leave lighted torches unattended. Torch unit should contain support stand to hold the torch in an upright position with flame directed upward and away from deck surface when set aside.
- 5) Use torches only in well-ventilated areas. Improper use of torching equipment or leaking gas could cause unburned LP gas to accumulate in low areas. Ventilation should be provided in low, confined areas.
- 6) Particular care must be exercised around gas lines supplying HVAC equipment and other rooftop equipment. Do not use torching equipment around cutback or solvent-based materials unless thoroughly cured.
- 7) A metal collar should protect cylinder valves. Do not lift LP gas cylinders by the valve.
- 8) Torch operators and roofing applicators should always wear gloves, long sleeves, pants, boots, eye protection and protective clothing. Other crewmembers should maintain a distance of five feet from open flame. Refer to all federal, state and local safety requirements which shall supersede these recommendations.
- 9) Torch operators shall have a direct line of sight to observe the area or surface to which the flame is applied. Confined areas may require heating of the bottom surface of the material and pressing the material into position. Do not apply flame directly around roof top penetrations.
- 10) CT strongly recommends the use of infrared thermometers, inspection of return air ducts and crawl spaces, and a minimum four-hour fire watch. Workers shall thoroughly inspect roof areas where torching operations have been ongoing prior to leaving the job site. It is the

obligation of the contractor to carefully and fully inspect all areas of application to confirm the possibilities of a fire have been eliminated.

CT EXPRESSLY DENIES ANY AND ALL RESPONSIBILITY AND SHALL NOT BE LIABLE FOR FIRE DAMAGE TO PERSONS OR PROPERTY DUE TO IMPROPER OR UNSAFE APPLICATION METHODS.

11.2 Torching Equipment

Use of properly designed, constructed and well-maintained torching equipment is essential to achieving maximum safety and performance levels. It is important for the total torching assembly to comply with all federal, state, and local material and safety regulations. The equipment shall be designed for the intended purpose.

- **LP GAS CYLINDERS:** Shall be a type approved by the appropriate regulating agency for LP gas usage, equipped with an approved vapor withdrawal valve and pressure gauge. Valves should be protected by a metal collar or hood.
- **REGULATOR:** Shall be UL listed for LP gas usage with an adjustable pressure range of 60 psi. When replacement is necessary, roofing contractor should ensure the replacement regulator operates within the same pressure range.
- **HOSE:** Shall be UL listed for LP gas usage, with a minimum working pressure rating of 350 psi. Burst strength should be 1750 psi. Hoses shall be checked regularly for damage and wear. Hose lengths shall not exceed 50 feet.
- **TORCH:** Shall be equipped with a shutoff valve, pressure-release trigger, and support stand or legs. Equipment shall be compatible with the LP gas withdrawal system and shall be maintained in good operating condition.

The following recommendations are intended as a general guideline only. Contractor shall consult equipment manufacturer for specific recommendation on specifications and usage.

TORCH TYPE	REGULAR PRESSURE	CYLINDER SIZE
Detail Torch	Approx. 15-20 psi	20 lb. or larger
Field Torch (single or twin head)	Approx. 40-45 psi	40 lb. or larger
Torch Wagon	Approx. 40-60 psi	100 lb. or larger

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

All equipment shall be checked daily for damage, wear and leaks. Never use equipment which has been damaged or is leaking. All personnel utilizing torch equipment should be experienced and knowledgeable in its use, safety precautions and applicable safety regulations. Consult your local LP Dealer, National LP Gas Association and current National Fire Protection Association Pamphlet and equipment manufacturer for further recommendations.

12.0 TEMPORARY ROOFS

12.1 Recommendations

CT does not recommend or endorse phased applications of roof systems. However, when weather or field conditions prohibit total roofing system installation, the designer, general contractor, building owner and roofing contractor should consider the use of a temporary roof. CT reserves the right to accept or reject the use of temporary roof as a vapor retarder in the permanent system. Temporary roofs shall be a minimum of two plies of Flintglas® Ply 4 set in hot asphalt. Where possible, the surface shall be glazed with asphalt. The type and number of plies shall depend on the length of time involved before the permanent system will be installed. Consult Tech Services for project-specific requirements.

13.0 COLD WEATHER PRECAUTIONS

13.1 General

When roof systems are installed in temperatures below 50°F precautionary measures must be taken. If the ambient temperature is below 50°F unroll membrane and allow the roll to relax; re-roll prior to application. Do not heat asphalt above maximum temperature to compensate for rapid cooling during rooftop transportation. Always use insulated mop carts and luggers. Provide heated storage for all rolls and coatings when 50°F or colder.

13.2 Atactic Polypropylene Polymers (APP):

As temperatures drop, APP modified asphalt becomes increasingly stiff and eventually reaches a “glass transition” temperature. At these temperatures the APP membrane will crack or shatter when impacted. CT APP products have a formulation making the glass transition temperature as low as possible while retaining the positive qualities of APP. The following precautions are necessary:

- Do not load roof with excess material, allowing stored materials to be exposed to cold temperatures. Keep rolls warm and dry.
- Do not drop, throw, or toss rolls. Care should be taken to minimize impact to the rolls during transportation and loading.

13.3 Styrene Butadiene Styrene (SBS)

Since the SBS modifier is a synthetic rubber and not a plastic polymer, cracking is rarely a problem. The following factors must be considered when ambient temperature is below 50°F:

- Store rolls in warm, dry location.
- Keep mopping asphalt above at the high side of EVT at point of application and within safety constraints. Hot asphalt, once applied to the substrate, cools rapidly.
- Mopping technique is critical. Begin mop strokes away from the roll, but close enough to maintain proper asphalt temperature. Bring the mop back to the roll across the width of membrane and finally along the selvage edge. Note: It is important that the selvage edge be mopped last. Mop asphalt no more than six feet ahead of the roll.

13.4 Flintlastic® SA Self-Adhered Modified Membranes

Flintlastic SA membranes are temperature-activated and require sufficient surface temperatures to fully adhere. The following steps can be of assistance in application when ambient temperature is between 20°F and 49°F:

- Store materials in a heated location and draw materials as needed. If the materials have been exposed to cold temperatures, allow a sufficient period of time in a heated environment for them to warm up.
- A hot air welder, in combination with a hand-held silicone roller, should be utilized to heat and seal side laps, end laps and details provided the materials are well-rolled and free of entrapped air. Do not overheat or attempt to weld laps with a torch.

These methods are precautions and the applicator should stop work if the materials are not properly adhering. Contact Tech Services for additional cold weather application support for Flintlastic SA roof systems.

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

The following recommendations are intended as a general guideline only. Contractor shall consult equipment manufacturer for specific recommendation on specifications and usage.

DETAIL	HOT AIR WELDER SETTING	HOT AIR WELDER TEMPERATURE
Side Lap	2-3	300°F - 500°F
End Lap	8-10	900°F - 1,100°F

14.0 COATINGS AND SURFACING

14.1 Asphalt Emulsions

Asphalt emulsion coatings contain a mineral colloid suspended in a water carrier and are used as a preparatory surfacing over factory-coated sheets. Asphalt emulsions, when dry, will not flow or alligator. Emulsions provide a much longer weathering surface than other types of asphalt surfacings. Care must be taken to ensure asphalt emulsion is thoroughly dry before subjected to rainfall. Avoid freezing during both storage and application. Applied asphalt emulsion, subjected to freezing prior to drying, has a surface appearance of jackstraw fissures (crystalline pattern). The damaged application can be corrected with a brush application of non-fibrated asphalt emulsion. The same corrective measure should be used when “mud cracking” occurs as a result of an excessive application.

14.2 Decorative and Reflective Coatings

Decorative and reflective coatings are intended to provide a pleasing aesthetic appearance and reflect heat to lower membrane surface temperatures. Coatings listed by CRRC¹⁵ or Energy Star¹⁶ will reduce the surface temperature of the roof membrane, creating a “cool roof.” A cool roof reflects and emits the sun’s heat back to the sky instead of transferring it to the building below. “Coolness” is measured by two properties, solar reflectance and thermal emittance. Both properties are measured from 0 to 1 and the higher the value, the “cooler” the roof. Refer to the CRRC and Energy Star websites, or the U.S. Department of Energy¹⁷ for more information. Please refer to the LEED¹⁸ documentation for information on “heat islands” and LEED requirements to obtain LEED points for roof applications.

¹⁵ Cool Roof Roofing Council, www.coolroof.org

¹⁶ Energy Star, U.S. Department of Energy, www.energystar.gov

¹⁷ United States Department of Energy, <http://energy.gov/>

¹⁸ LEED, Leadership in Energy and Environmental Design, www.usgbc.org and www.leed.net

14.3 Applications

All roof and flashing coatings are maintenance items, and are the owner’s responsibility to maintain or replace during the service life of the roof. All cutbacks contain solvents. Do not heat or expose coatings to open flame or excessive heat. Use only in well ventilated areas. Carefully read information on labels. Emulsions contain water. All emulsion must be kept from freezing. Emulsions shall not be subjected to ambient temperatures below 40°F, either during application or during cure. Reflective coatings are either water or solvent based. CT decorative and reflective coatings shall be applied only to roof surfaces that have been properly prepared and are smooth, clean and dry. Some membranes require exposure to the elements for at least 30 days before the application of any coating. Read carefully all information on labels. CT does not warrant performance of another manufacturer’s coating or its ability to bond to a membrane surface.

When design requirements call for additional surfacing to satisfy particular aesthetic or fire-resistance properties, CT offers the following general guidelines:

- **ASPHALT EMULSIONS:** Surfaces to receive emulsion coating shall be clean, dry and free of debris. CT recommends application after a minimum of 30 days exposure of the membrane to the elements. Following surface preparation, apply one coat to the entire roof membrane and vertical flashing surfaces at the rate of three gallons per 100 square feet. Emulsion may be applied with a soft fiber brush, roller or spray equipment, brushing or spraying toward laps. Consult product manufacturer for application and specifications.
- **ALUMINUM COATINGS:** Surfaces to receive aluminum coating shall be clean, dry and free of debris. Both solvent-based and water-based aluminized surfacings are acceptable when aluminum coating is required. Consult product manufacturer for specifications and application rates as they may vary according to requirements. Carefully review deck surfacing requirements prior to application.
- **ACRYLIC COATINGS:** Surfaces to receive acrylic coating shall be clean, dry and free of debris. CT recommends application after a minimum of 30 days exposure of the membrane to the elements. Acrylic coatings may be applied over an asphalt emulsion coating or, in some

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

cases, directly to a membrane surface. Consult product manufacturer for application and specifications.

- **ASPHALT GLAZE COATINGS:** Surface to receive hot asphalt must be clean and dry. Hot asphalt may be applied by squeegee or mop at a rate not to exceed 15 lbs. per 100 square feet.
- **GRAVEL OR SLAG:** Surfacing shall be opaque and clean. Moisture content shall not exceed 2% by weight, and shall conform to ASTM D1863¹⁹. Gravel or slag shall be 1/4" to 5/8" in size installed in a flood coat of Type III/Type IV asphalt. Flood coat shall be applied in a uniform manner at the rate of 60 lbs. per 100 square feet. Gravel or slag shall be applied at the rate of 400 lbs. per 100 square feet with a minimum of 50% embedment into the flood coat.

15.0 NAILABLE SUBSTRATE FASTENER DATA

15.1 Considerations

It shall be the responsibility of the designer of record, or the owner, to consider wind uplift conditions and provide adequate securement of the roof assembly to prevent damage or blow-off. CT provides minimum attachment patterns for attachment of base sheets, insulation and coverboards. The structural section of the building code provides the required formulas to calculate uplift pressures for all roof types. CT has tested a wide variety of roof systems to document uplift resistance performance. For additional information contact Tech Services for job specific information. If the roof assembly is insured by FM Global or is specified to meet FM Global requirements, refer to system approved by FM Global and listed in the Products Directory or posted on RoofNav. Refer to the FM Global Loss Prevention Data Sheets available in the RoofNav website for additional roof and perimeter attachment information.

Nails can be secured to the deck either with integral heads or through tin caps. The uplift performance for each type may vary. It is the responsibility of the designer of record or the building owner to establish the appropriate attachment pattern to meet local code or property insurance requirements. CT can provide test data to assist in the evaluation of specific systems. Refer to the current fastener sections published by both the NRCA and ARMA for suitable

fasteners typically used for base sheet, insulation and coverboard attachment. Note it is strongly recommended by CT that coverboards be fully bonded to insulate the fasteners from exterior conditions.

15.2 Job Site Testing

CT strongly suggests job site testing to determine the most effective fastener for the attachment of any component on the roof. Two test standards are available for testing; ANSI/SPRI FX-1-2001 and State of Florida TAS-105. It is strongly recommended that one of these test standards be followed to calculate fastener performance²⁰. CT will not accept responsibility for damage to or failure of the roofing system caused by either non-performance of the fasteners or failure of deck materials. CT will not assume any responsibility for their performance. The following list of suggested fasteners is intended to be used only as a guide and shall not be considered as a guaranteed method of mechanical attachment by CT.

15.3 Nailing Requirements Section

Built-up and SBS-modified membranes (including self-adhering) applied on slopes exceeding 1":12" or APP modified membranes applied on slopes exceeding 2":12" shall be nailed as follows:

- **NAILABLE SUBSTRATES:** Base ply shall be mechanically attached, at a minimum, as specified in the selected roof system specification. Install subsequent plies in shingle fashion. Lap ply sheets to form a two- three- or four- ply assembly. Nail each ply 1" in from top edge, 12" o.c. through tin caps and annular ring shank nails. Nails shall penetrate through the plywood or OSB substrate a minimum of 1/4" or shall penetrate wood plank a minimum of 3/4". Flintglas® MS Cap Sheet and Flintlastic® modified bitumen roll roofing, when applied parallel to the slope, shall be back-nailed at end laps 2" in from top edge, 6" o.c. through tin discs with annular ring shank nails.

¹⁹ ASTM D1863: Standard Specification for Mineral Aggregate Used on Built-Up Roofs

²⁰ Copies of Protocols and Calculation Sheets are available from Tech Services

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS

- **INSULATED SUBSTRATES:** Roof membrane shall be applied parallel to slope. Base ply shall be adhered to the insulation, at a minimum, as specified in selected insulation application specification. Nail base ply and each subsequent ply through tin discs to woodblocking, 1" in from leading edge, 8' o.c. for slopes above 3":12" and 16' o.c. for slopes below 3":12". Flintglas Cap Sheet and Flintlastic modified bitumen roll roofing, when applied parallel to the slope, shall be back-nailed at end laps 2" in from top edge, 6" o.c. through tin discs with annular ring shank nails into woodblocking.
- **NON-INSULATED, NON-NAILABLE SUBSTRATES:** Install minimum 3½" wide woodblocking set flush to surface of deck at all eaves, ridges, rakes and base of curbs. Woodblocking shall be spaced 8' or 16' apart as noted above to create insulation stops. The roof membrane shall be applied parallel to slope. Base ply shall be installed, at a minimum, as specified in selected roof membrane specification. Nail base ply and each subsequent ply to woodblocking and insulation stops, 1" in from leading edge through tin caps with annular ring shank nails. Flintglas® MS Cap Sheet and Flintlastic modified bitumen roll roofing, when applied parallel to the slope, shall be back-nailed at all end laps 2" in from top edge, 6" o.c. through tin caps into the woodblocking with annular ring shank nails.

15.4 MECHANICAL FASTENING

15.4.1 Insulation Fasteners

Mechanical attachment of insulation and/or coverboards has become the preferred method of attachment over steel, wood, and some engineered lightweight decks. Hot asphalt application over steel has been eliminated from the industry due to fire resistivity issues. Direct bonding to wood or engineered wood is not supported due to dimensional changes of the deck, asphalt drippage and moisture issues, which can impact the performance of bonding.

Mechanical fasteners and stress plates are designed to secure rigid insulation to resist windload and lateral movement of the insulation boards. The density of the fastening pattern will determine the uplift resistance of the assembly.

All roofs are divided into three distinct attachment areas; the field, perimeter and corners. Typically, fastener density will increase in perimeter and corner areas. Uplift resistance of the roof assembly is calculated based on local code requirements. The foundation design document adopted by most codes is ASCE-7²¹ that is revised and updated every several years. FM Global requires all base insulation layers to be mechanically attached. The design criteria for FM Global insured or specified projects can be located in the FM Global Loss Prevention Data Sheet ("LPDS") 1-28²².

Insulation manufacturers publish fastening patterns for specific board dimensions to meet uplift resistance requirements. Note densities may be different depending on the roof cover. Fasteners shall be installed in strict compliance with fastener and insulation manufacturers' installation recommendations. The General Recommendations incorporated into LPDS 1-28 are a helpful guide to mechanical attachment.

Mechanical fastening creates "thermal shorts"²³ when the fastener head and stress plate are directly under the roof cover. Whenever practical, insulation should be installed in two staggered layers, the second layer bonded in asphalt or adhesive. Coverboards should always be bonded to the underlying insulation layer(s).

CT has tested hundreds of assemblies over most deck types to document uplift resistance. Ratings of the tested systems can be reviewed in the CT Wind Uplift Resistance Database²⁴ and in FM Global RoofNav²⁵. Building officials may require confirmation of performance of the assembly prior to issue of a permit.

²¹ American Society of Civil Engineers "Minimum Design Loads for Buildings and Other Structures"

²² Factory Mutual Global Property Loss Prevention Data Sheets 1-28: Wind Design

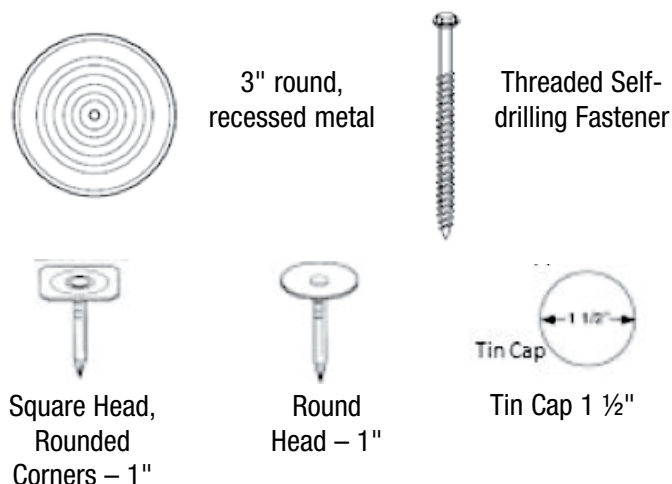
²³ Thermal short is an area where excess heat is transferred from the interior to the exterior or the exterior to the interior by way of a component bridging the two sides of the assembly

²⁴ Contact Tech Services

²⁵ visit www.roofnav.fmglobal.com/

GENERAL RECOMMENDATIONS

COMMERCIAL ROOFING SYSTEMS



For assistance in determining appropriate fasteners and stress plates, or to calculate uplift pressures for job specific conditions, please contact Tech Services or the Designer of Record. See Appendix I, Insulation Fastening Guide.

15.4.2 Base Ply Fasteners

Base sheets are mechanically attached with either fasteners and stress plates, nails and tin caps, or metal head cap nails with integrated heads.

The base sheet forms the foundation of the roof. The fastener or nail provides the connection to the deck and the stress plate, tin cap or cap nail head, combined with the base sheet and asphalt or adhesive, provides the connection to the roof cover.

Wind uplift pressures are calculated by using the formula in the local building code. The density of the fasteners or nails is dependent on the calculated pressures in the field, perimeter and corner areas of the roof.

CT has a database²⁶ of wind uplift testing of systems utilizing mechanically attached base sheets. The type and density of the fasteners or nails are detailed in each listed assembly. Contact Tech Services for additional data.

Calculating base sheet attachment requires the evaluation of the deck and the rupture value of the stress plate, tin

cap, or cap nail head when bonded into the roof assembly. Data is generated by both fastener/nail manufacturers and CertainTeed. Contact Tech Services for job specific data.

CT publishes minimum attachment criteria assuming the use of a 1" cap nail with annular ring shank installed into $1\frac{5}{32}$ " thick plywood. The minimum attachment pattern of 9" o.c. at the 2" side lap and two staggered rows at 18" o.c. will provide a minimum uplift resistance of 30 psf after a 2:1 margin of safety is applied (minimum attachment pattern of 12" o.c. at 4" side laps and two staggered rows at 18" o.c. with screws and plates for steel decking).

The attachment pattern shall be increased by 50% in the perimeters and 100% in the corners to meet higher pressures in these areas. The use of tin caps or stress plates will increase the rupture values; therefore, the fastener density can be reduced providing the withdrawal resistance for the deck is greater than the rupture value. These alternate patterns may be located in the attachment CertaBase database.

To calculate fastener density from a combination of withdrawal resistance data and rupture values, the calculation sheets are available from Tech Services. Withdrawal resistance of the nail or fastener from the deck should be calculated using either TAS 105 of the South Florida Building Code²⁸ or SPRI FX1-2006.29. Each document details the calculations required to identify the fastener density. The Protocols and Calculation Sheets may be obtained from Tech Services.

Note that only cap nails with metal integrated heads are approved for use with CertainTeed base sheets. It is strongly recommended either annular ring shank or spiral shank nails be used. Ring barbed or smooth shank nails will have the lowest withdrawal resistance.

15.4.3 CertaFast Systems

CertainTeed CertaFast systems offer a unique, FM Global approved, base ply attachment method for use over a number of approved substrates. Insulation board stock is pre-secured through approved cover boards using two fasteners per 4' X 4' board and four fasteners per 4' X 8'

²⁶ CT CertaBase database

GENERAL RECOMMENDATIONS

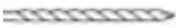
COMMERCIAL ROOFING SYSTEMS

board. Flintlastic Ultra Poly SMS is secured through minimum 4" laps that are subsequently torch-welded. Fastening patterns are typically 12" o.c. with approved fasteners at maximum 35¹/₃" row spacing. The selected Flintlastic field membrane is then either torch welded or hot asphalt adhered in place. Refer to FM Global and FM Global RoofNav for selected system details and perimeter securements.

Approved Shank Styles



Ring Shank
Nail



Spiral Shank
Nail



Ring Barbed
Nail

Approved Cap Styles



Square Head,
Rounded
Corners – 1"



Round
Head – 1"



Tin Cap
Tin Cap 1 1/2"

Refer to manufacturer's literature for field test data for values in specific deck type.

TABLE OF CONTENTS

Specification Nomenclature

SA Warranty Matrix

SA-C-2-S

SA-C-3-S

SA-I-2-S

SA-I-3-S

SA-IN-2-S

SA-IN-3-S

SA-IN-4-S

SA-N-2-S

SA-N-3-S

SA-N-4-S

SPECIFICATION NOMENCLATURE

Please note: Each CertainTeed roof system specification includes multiple base, interply (if applicable) and cap sheet options. Warranty durations are dependent on both system specification and product pairing.

CertainTeed publishes the Commercial Roof Systems Specifications to guide in the specification of low-slope roof systems. The specifications are classified in alphanumeric combinations such as BUR(M)-N-5-A where:

Cap Sheet	(Surfacing)	Base Attachment	Number of Plies	Cap Application
SA Self Adhered	(G) Gravel Surface	C Fully-adhered/Non-insulated substrate	2, 3, 4, 5	S Self Adhered
APP Atactic Polypropylene	(M) Mineral Surfaced Cap Sheet	I Fully-adhered/Insulated substrate		T Torch Welded
SBS Styrene Butadiene Styrene	(S) Smooth	IN Mechanically attached through insulated substrate		A Hot Asphalt
BUR Built Up Roofing		N Mechanically attached through non-insulated substrate		C Cold Process (adhesive)
				CF CertaFast (base sheet application)

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

SELF-ADHERED SYSTEMS WITH BASE SHEET ADHERED

Warranty Duration	NDL Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Applicable Specs	Notes
15 years	\$7.50/Sq	Optional ¹	Flintlastic SA PlyBase	—	SA Cap, SA Cap FR	SA-C-2-S, SA-I-2-S	—
20 years	\$12.50/Sq	Optional ¹	Flintlastic SA MidPly	—	SA Cap, SA Cap FR	SA-C-2-S, SA-I-2-S	—
25 years	\$15.00/Sq	Double layer, second layer adhered	Flintlastic SA PlyBase	Flintlastic SA PlyBase	SA Cap, SA Cap FR	SA-I-3-S	—
25 years ²	\$15.00/Sq	Double layer, second layer adhered	Flintlastic SA MidPly	—	SA Cap, SA Cap FR	SA-I-2-S	—

Note: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "SA-I-2-S"

2. Gold Star contractors can increase warranty duration by 25% (31 Years) by engaging their client in on an Integrity Maintenance Contract.

SELF-ADHERED SYSTEMS WITH MECHANICALLY ATTACHED BASE SHEET

Warranty Duration	NDL Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Applicable Specs	Notes
12 years	\$4.00/Sq	Optional ¹	Flintlastic SA NailBase	—	SA Cap, SA Cap FR	SA-IN-2-S, SA-N-2-S	Approved for re-cover
15 years	\$7.50/Sq	Optional ²	Flintlastic SA NailBase	Flintlastic SA PlyBase	SA Cap, SA Cap FR	SA-IN-3-S, SA-N-3-S	—
20 years	\$12.50/Sq	Optional ²	Flintlastic SA NailBase	Flintlastic SA MidPly	SA Cap, SA Cap FR	SA-IN-3-S, SA-N-3-S	—
25 years	\$15.00/Sq	Single layer, minimum 1.5"	Flintlastic SA NailBase	2-Flintlastic SA PlyBase	SA Cap, SA Cap FR	SA-IN-4-S	—
25 years ³	\$15.00/Sq	Single layer, minimum 1.5"	Flintlastic SA NailBase	Flintlastic SA MidPly	SA Cap, SA Cap FR	SA-IN-3-S	—

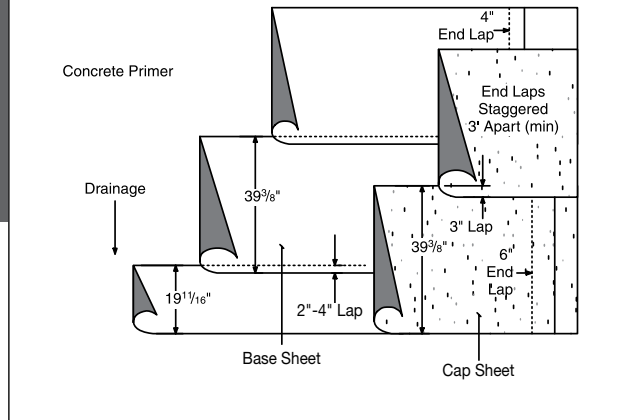
Note: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "SA-IN-2-S"

2. If "Optional" Insulation/Coverboard is utilized, refer to "SA-IN-3-S"

3. Gold Star contractors can increase warranty duration by 25% (31 Years) by engaging their client in on an Integrity Maintenance Contract.

SA-C-2-S



Self-adhered modified base sheet and self-adhered modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

- Approved base sheet, self-adhered (Sec. 10.0)
- Approved cap sheet, self-adhered (Sec. 10.0)

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer or FlintPrime SA
- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS¹:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

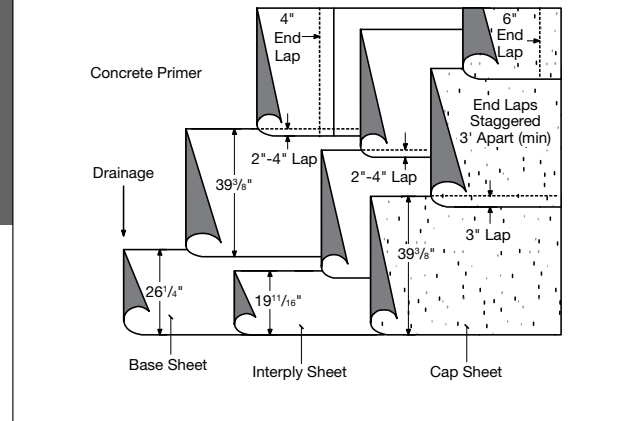
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SA-C-3-S

Self-adhered modified base sheet, self-adhered modified interply sheet and self-adhered modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

- Approved base sheet, self-adhered (Sec. 10.0)
- Approved interply sheet, self-adhered (Sec. 10.0)
- Approved cap sheet, self-adhered (Sec. 10.0)

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer or FlintPrime SA
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS¹:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED INTERPLY SHEETS:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

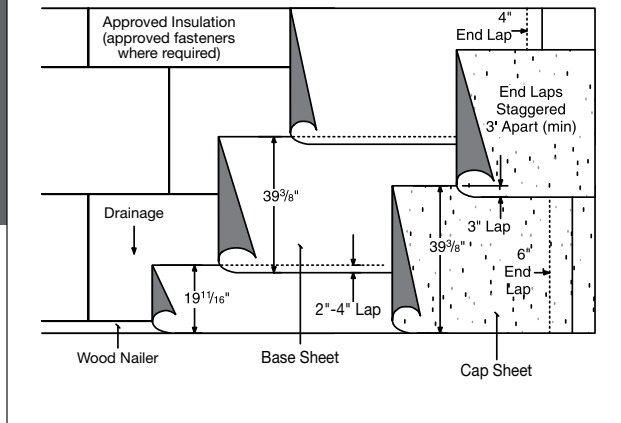
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.



Insulated substrates: Self-adhered modified base sheet and self-adhered modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet, self-adhered (Sec. 10.0)

Approved cap sheet, self-adhered (Sec. 10.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- Standard. Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- Premium. Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- Premium alternate. Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

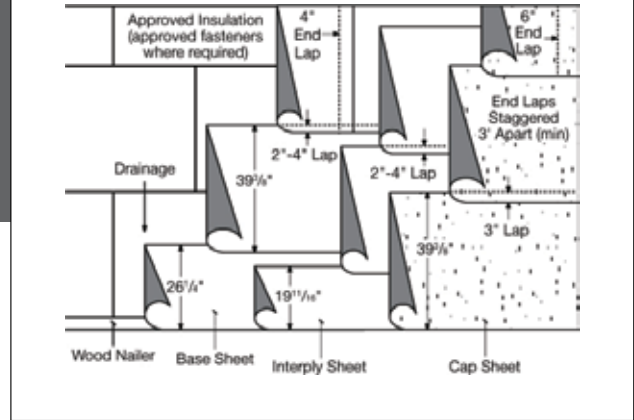
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SA-I-3-S

Insulated substrates: Self-adhered modified base sheet, self-adhered modified interply sheet and self-adhered modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet, self-adhered (Sec. 10.0).

Approved interply sheet, self-adhered (Sec. 10.0).

Approved cap sheet, self-adhered (Sec. 10.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED INTERPLY SHEETS:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

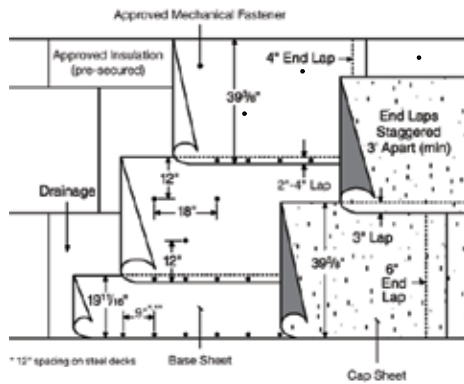
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

SA-IN-2-S



Modified base sheet mechanically attached through insulated substrate and self-adhered modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base, sheet mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved cap sheet self-adhered (sec. 10.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

- Flintlastic SA NailBase

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply of Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** Available with CoolStar® reflective granules*

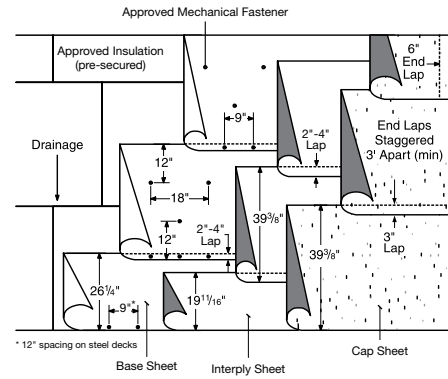
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SA-IN-3-S

Modified base sheet mechanically attached through insulated substrate, self-adhered modified interply sheet and self-adhered modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheet, self-adhered (Sec. 10.0).

Approved cap sheet, self-adhered (sec. 10.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- Flintlastic SA NailBase

APPROVED INTERPLY SHEETS:

(one of the following)

- Flintlastic SA PlyBase

- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply of Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

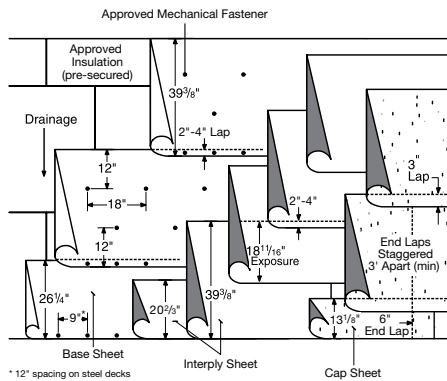
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

SA-IN-4-S



Modified base sheet mechanically attached through insulated substrate, two self-adhered modified interply sheets and self-adhered modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheets self-adhered (Sec. 10.0).

Approved cap sheets, self-adhered (Sec. 10.0)

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- Flintlastic SA NailBase

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- Standard. Over a base sheet or bonded to a primed substrate. One ply of Flintlastic modified cap sheet, per CT detail.
- Premium. Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- Premium alternate. Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

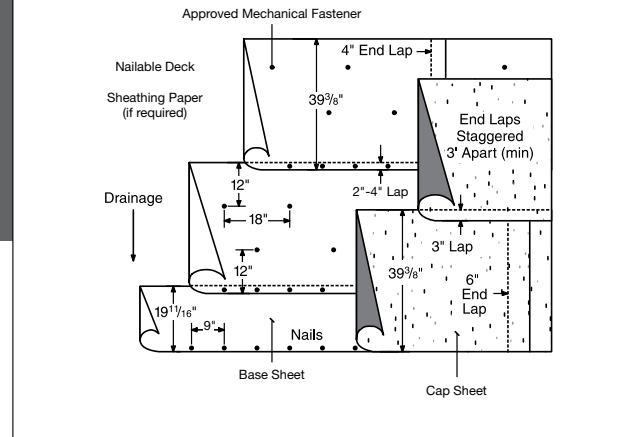
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

Consult CertainTeed General Recommendations for noted section references.

SA-N-2-S

Modified base sheet mechanically attached through substrate and self-adhered modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved cap sheet self-adhered (Sec. 10.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- Flintlastic SA NailBase

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

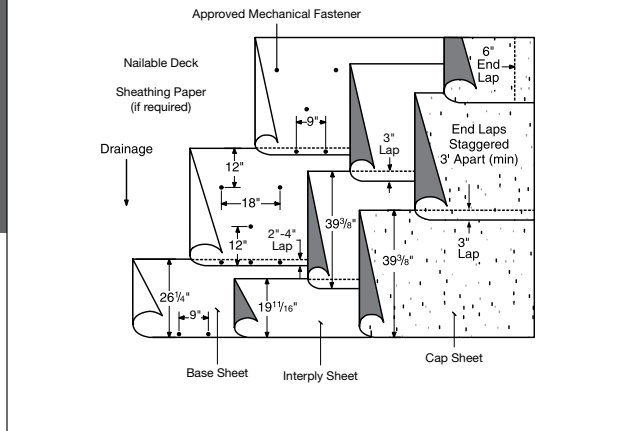
- **Standard.** Over a base sheet or bonded to a primed substrate. One ply of Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.



Modified base sheet mechanically attached through substrate, self-adhered modified interply sheet, and self-adhered modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, attached to approved substrate (Sec. 15.0).

Approved interply sheet, self-adhered (Sec. 10.0).

Approved interply sheet, self-adhered (Sec. 10.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- Flintlastic SA NailBase

APPROVED INTERPLY SHEETS:

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply of Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

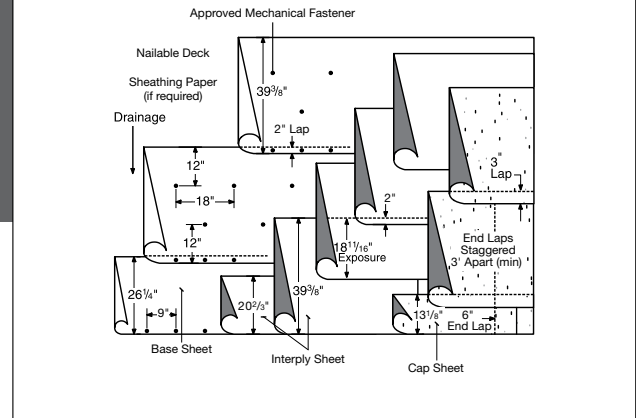
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SA-N-4-S

Modified base sheet(s) mechanically attached through substrate, one or two self-adhered modified interply sheets, and self-adhered modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets, self-adhered (Sec. 10.0).

Approved cap sheet, self-adhered (Sec. 10.0).

CONFIGURATION ONE:

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

- Flintlastic SA NailBase

INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

CONFIGURATION TWO:

SUMMARY OF MATERIALS:

- Base sheet (2 plies)
- Interply sheets (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS (2 PLIES):

(one of each of the following)

- Glasbase Base Sheet¹
- Flintlastic SA NailBase

INTERPLY SHEETS (1 PLY):

(one of the following)

- Flintlastic SA PlyBase
- Flintlastic SA MidPly

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic SA Cap*
- Flintlastic SA Cap FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply of Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash[®], per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar[®] reflective granules

¹ In Configuration Two, Glasbase Base Sheet and Flintlastic SA NailBase are gang fastened to a substrate with Flintlastic SA NailBase on top.

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APP SYSTEMS

TABLE OF CONTENTS

Specification Nomenclature

APP Warranty Matrix

APP-C-2-T

APP-C-3-T

APP-C-4-T

APP-I-2-T

APP-I-3-T

APP-I-4-T

APP-IN-2-T

APP-IN-3-T

APP-IN-4-T

APP-N-2-T

APP-N-3-T

APP-N-4-T

APP-IN-2-CF

SPECIFICATION NOMENCLATURE

Please note: Each CertainTeed roof system specification includes multiple base, interply (if applicable) and cap sheet options. Warranty durations are dependent on both system specification and product pairing.

CertainTeed publishes the Commercial Roof Systems Specifications to guide in the specification of low-slope roof systems. The specifications are classified in alphanumeric combinations such as BUR(M)-N-5-A where:

Cap Sheet	(Surfacing)	Base Attachment	Number of Plies	Cap Application
SA Self Adhered	(G) Gravel Surface	C Fully-adhered/Non-insulated substrate	2, 3, 4, 5	S Self Adhered
APP Atactic Polypropylene	(M) Mineral Surfaced Cap Sheet	I Fully-adhered/Insulated substrate		T Torch Welded
SBS Styrene Butadiene Styrene	(S) Smooth	IN Mechanically attached through insulated substrate		A Hot Asphalt
BUR Built Up Roofing		N Mechanically attached through non-insulated substrate		C Cold Process (adhesive)
				CF CertaFast (base sheet Application)

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

APP SYSTEMS WITH BASE SHEET ADHERED

Warranty Duration	Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply ⁵	Cap	Applicable Specs	Notes
12 years	\$4.00/Sq	Optional ¹	Glasbase™ Base Sheet, Yosemite® Venting Base Sheet	—	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ³ , Flintlastic STA Plus	APP-C-2-T, APP-I-2-T	APP-I-2-T approved for re-cover
15 years	\$7.50/Sq	Optional ¹	Glasbase™ Base Sheet, Flintlastic APP Base T, All Weather/Empire Base, Yosemite® Venting Base Sheet	—	Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-C-2-T, APP-I-2-T	APP-I-2-T approved for re-cover
15 years	\$7.50/Sq	Optional ¹	Flintlastic APP Base T Black Diamond® Base Sheet	Optional	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ⁴ , Flintlastic STA Plus ⁴	APP-C-2-T, APP-I-2-T	—
15 years	\$7.50/Sq	Optional ²	Flintglas® Ply 4	Flintglas Ply 4	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ⁴ , Flintlastic STA Plus ⁴	APP-C-3-T, APP-I-3-T	—
20 years	\$12.50/Sq	Optional ¹	Black Diamond Base Sheet	Optional	Flintlastic GTA-FR, CoolStar, Flintlastic STA Plus ⁴	APP-C-2-T, APP-I-2-T	—
20 years	\$12.50/Sq	Double layer, second layer adhered	Flintlastic APP Base T Black Diamond Base Sheet	Optional	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ⁴ , Flintlastic STA Plus ⁴	APP-I-2-T	—
20 years	\$12.50/Sq	Optional ¹	Flintlastic Ultra Glass SA, Flintlastic STA	Optional	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ⁴ , Flintlastic STA Plus ⁴	APP-C-2-T, APP-I-2-T	—
20 years	\$12.50/Sq	Double layer, second layer adhered	Flintglas Premium Ply 6	Flintglas Premium Ply 6	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ⁴ , Flintlastic STA Plus ⁴	APP-I-3-T	—
25 years	\$15.00/Sq	Optional ²	All Weather/Empire Base, Flintlastic Poly SMS, Black Diamond Base Sheet	Flintlastic STA Plus	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-C-3-T, APP-I-3-T	—
25 years	\$15.00/Sq	Double layer, second layer adhered	Flintlastic Ultra Glass SA, Flintlastic Ultra Poly SMS	Optional	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-I-2-T	—
25 years	\$15.00/Sq	Double layer, second layer adhered	Black Diamond Base Sheet, Flintlastic Ultra Glass SA	Flintlastic STA	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-I-3-T	—

Notes: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "APP-I-2-T"

2. If "Optional" Insulation/Coverboard is utilized, refer to "APP-I-3-T"

3. Requires coating of FlintCoat® A-300 or FlintCoat W.

4. Requires coating of FlintCoat A-300 or FlintCoat W; proof of recoat required in year 10 and 20.

5. If "Optional" interply is utilized, ply number in specification ID increases by one (i.e APP-I-2-T becomes APP-I-3-T).

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

APP SYSTEMS WITH MECHANICALLY ATTACHED BASE SHEET

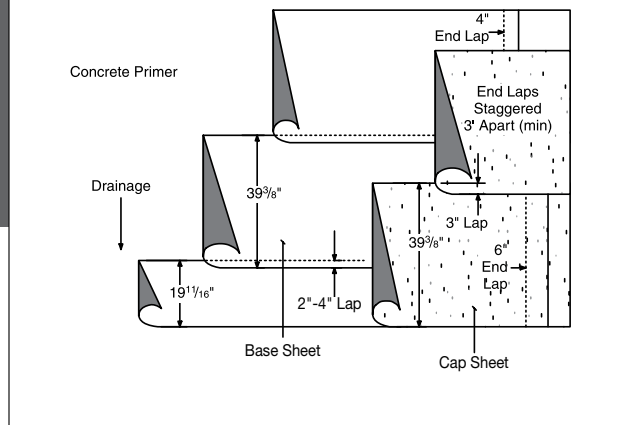
Warranty Duration	Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Applicable Specs	Notes
12 years	\$4.00/Sq	Optional ¹	Glasbase™ Base Sheet, Flintlastic APP Base T, All Weather/Empire® Base Sheet, Yosemite® Venting Base Sheet	—	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ³ Flintlastic STA Plus	APP-IN-2-T, APP-N-2-T	Approved for re-cover
15 years	\$7.50/Sq	Optional ¹	Glasbase™ Base Sheet, Flintlastic APP Base T, Yosemite® Venting Base Sheet	—	Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-IN-2-T, APP-N-2-T	Approved for re-cover
15 years	\$7.50/Sq	Optional ²	Glasbase Base Sheet, Flintlastic APP Base T, All Weather/Empire Base Sheet	Flintlastic APP Base T, Black Diamond® Base Sheet	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ³ Flintlastic STA Plus ³	APP-IN-3-T, APP-N-3-T	—
20 years	\$12.50/Sq	Optional ²	Glasbase Base Sheet, All Weather/Empire Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS	Flintlastic Ultra Glass SA, Black Diamond® Base Sheet, Flintlastic STA, Flintlastic Ultra Poly SMS	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA ⁴ Flintlastic STA Plus ⁴	APP-IN-3-T, APP-N-3-T	—
20 years	\$12.50/Sq	Single layer, minimum 1.5" and approved coverboard	CertaFast system with Flintlastic Ultra Poly SMS	—	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-IN-2-CF	—
25 years	\$15.00/Sq	Optional ²	All Weather/Empire Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS	Flintlastic STA Plus, Flintlastic Ultra Glass SA, Flintlastic Ultra Poly SMS	Flintlastic GTA, Flintlastic GTA-FR, Flintlastic STA Plus ⁴	APP-IN-3-T, APP-N-3-T	—

Notes: Unless noted, prior approval required by CT Tech Services for re-cover.

Yosemite Venting Base Sheet may be appropriate over Lightweight Insulating Concrete or in re-cover applications.

1. If "Optional" Insulation/Coverboard is utilized, refer to "APP-IN-2-T"*
2. If "Optional" Insulation/Coverboard is utilized, refer to "APP-IN-3-T"*
3. Requires coating of FlintCoat® A-300 or FlintCoat W.
4. Requires coating of FlintCoat A-300 or FlintCoat W; proof of recoat required in year 10 and 20.

APP-C-2-T



Adhered base sheet and torch-welded APP modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)
(No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

Hot Asphalt Applied

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered¹

- Black Diamond® Base Sheet
- Flintlastic Ultra Glass SA

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. Oneply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

FINAL SURFACING:

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

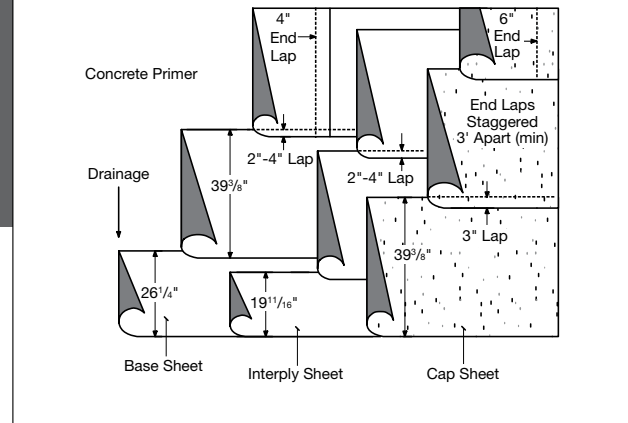
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

APP-C-3-T

Adhered base sheet, adhered interply sheet and torch-welded APP modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved Interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(No moppings if base and ply are torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

Hot Asphalt Applied

- All Weather/Empire® Base Sheet
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA

- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered¹

- Black Diamond® Base Sheet
- Flintlastic Ultra Glass SA

APPROVED INTERPLY SHEETS:

(one of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet**
- Flintlastic Ultra Glass SA**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

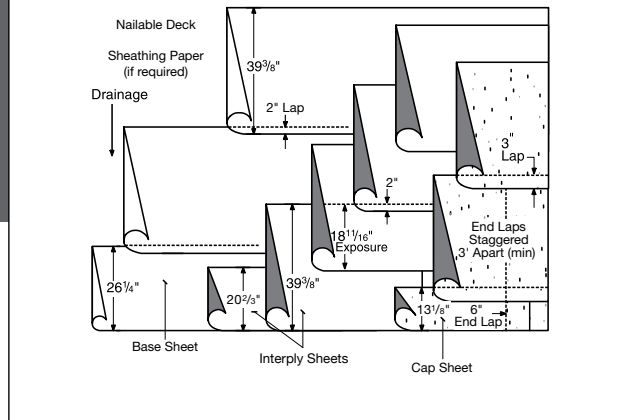
** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

APP-C-4-T



Adhered base sheet, two adhered interply sheets and torch-welded APP modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheet (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings)
(No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

Hot Asphalt Applied

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered¹

- Black Diamond® Base Sheet
- Flintlastic Ultra Glass SA

APPROVED INTERPLY SHEETS:

(two of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet**
- Flintlastic Ultra Glass SA**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. Oneply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

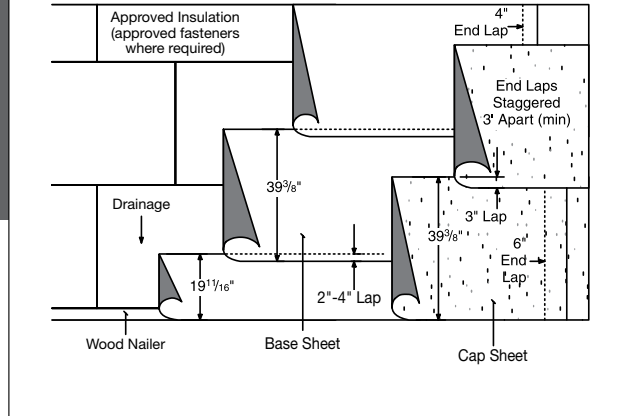
¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

Consult CertainTeed General Recommendations for noted section references.

CertainTeed
SAINT-GOBAIN

APP-I-2-T

Insulated substrates: adhered base sheet and torch-welded APP modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0), or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard.
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping) (No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

Hot Asphalt Applied

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

TORCH WELDED

- Flintlastic APP Base T**
- Flintlastic STA**
- Flintlastic STA Plus**
- Flintlastic Ultra Poly SMS**

Self-Adhered

- Black Diamond® Base Sheet
- Flintlastic Ultra Glass SA

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

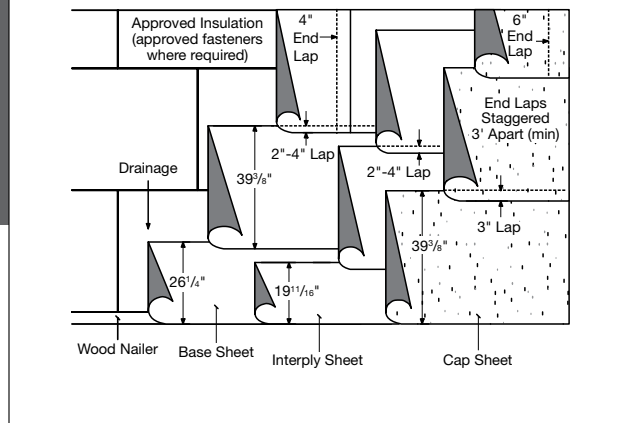
* Available with CoolStar® reflective granules

** Over approved gypsum coverboards only

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APP-I-3-T



Insulated substrates: adhered base sheet, adhered interply sheet and torch-welded APP modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6": 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0), or self-adhered (Sec. 10.2).

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0), or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard.
- Base sheet (1 ply)
- Interply sheet (1 ply)

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings) (No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

Hot Asphalt Applied

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA**
- Flintlastic STA Plus**
- Flintlastic Ultra Poly SMS**

Self-Adhered

- Black Diamond® Base Sheet
- Flintlastic Ultra Glass SA

APPROVED INTERPLY SHEETS:

(One of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet***
- Flintlastic Ultra Glass SA***

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

** Over approved gypsum coverboards only

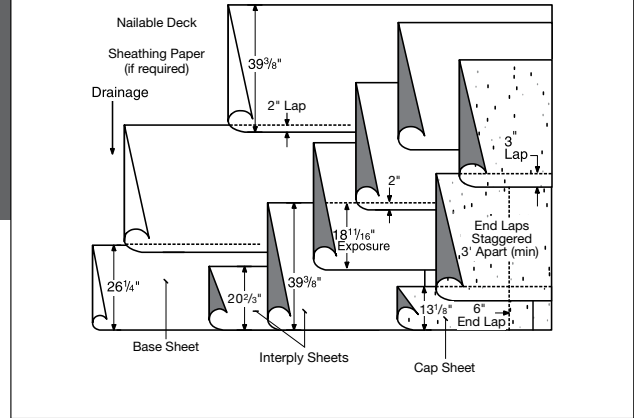
*** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

Consult CertainTeed General Recommendations for noted section references.

CertainTeed
SAINT-GOBAIN

APP-I-4-T

Insulated substrates: adhered base sheet, two adhered interply sheets and torch-welded APP modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7). Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0), or self-adhered (Sec. 10.2). Two approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0), or self-adhered (Sec. 10.2). Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard.
- Base sheet (1 ply)
- Interply sheets (2 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings) (No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(One of the following)

Hot Asphalt Applied

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

Torch Welded

- Flintlastic APP Base T**
- Flintlastic STA**
- Flintlastic STA Plus**
- Flintlastic Ultra Poly SMS**

Self-Adhered

- Black Diamond® Base Sheet
- Flintlastic Ultra Glass SA

APPROVED INTERPLY SHEETS:

(Two of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet***
- Flintlastic Ultra Glass SA***

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

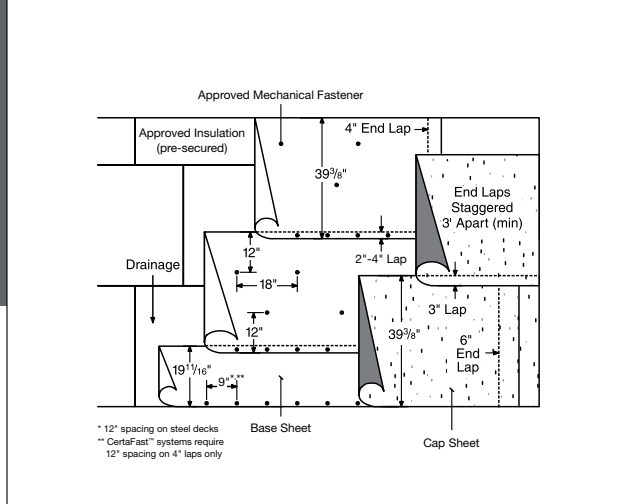
** Over approved gypsum coverboards only

*** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

APP-IN-2-T



Base sheet mechanically attached through insulated substrate and torch-welded APP modified cap

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of Insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

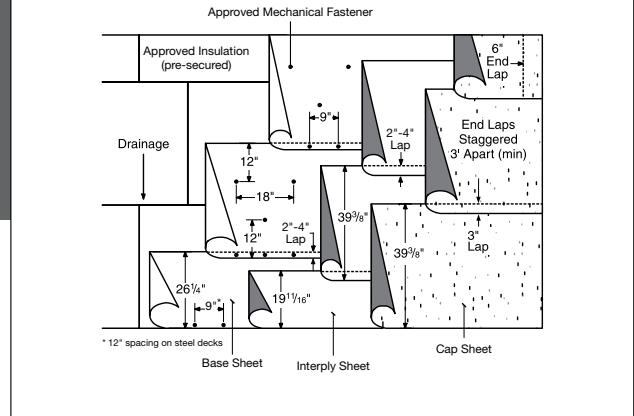
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

Consult CertainTeed General Recommendations for noted section references.

APP-IN-3-T

Base sheet mechanically attached through insulated substrate, adhered interply sheet and torch-welded APP modified cap



SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of Insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (1 mopping) (no mopping if interply torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS

- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(One of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet**
- Flintlastic Ultra Glass SA**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

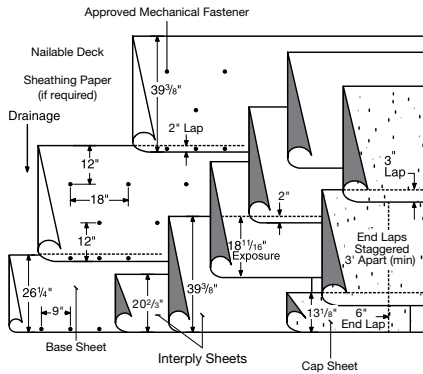
* Available with CoolStar® reflective granules

** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APP-IN-4-T



Base sheet mechanically attached through insulated substrate, two adhered interply sheets and torch-welded APP modified cap

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet mechanically attached with approved screws and plates (Sec. 15.4.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of Insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (2 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (2 moppings) (no moppings if interply torch-welded or self-adhered)

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(Two of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet**
- Flintlastic Ultra Glass SA**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

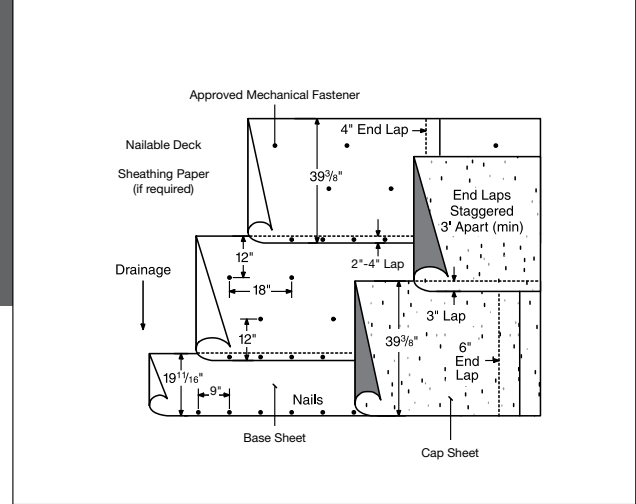
* Available with CoolStar® reflective granules

** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

Consult CertainTeed General Recommendations for noted section references.

APP-N-2-T

Base sheet mechanically attached through substrate and torch-welded APP modified cap



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet mechanically attached to approved substrate (Sec. 15.0)

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

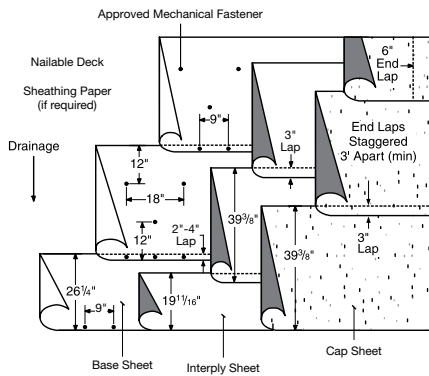
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APP-N-3-T



Base sheet mechanically attached through substrate, adhered interply sheet and torch-welded APP modified cap

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet mechanically attached to approved substrate (Sec. 15.0)

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)
(No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS

- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(One of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet**
- Flintlastic Ultra Glass SA**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

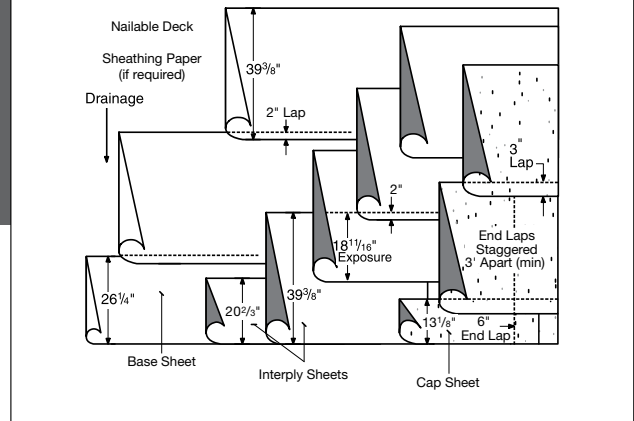
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

APP-N-4-T

Base sheet mechanically attached through substrate, two adhered interply sheets and torch-welded APP modified cap



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet mechanically attached to approved substrate (Sec. 15.0)

Two approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(No moppings if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic APP Base T
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(Two of the following)

Hot Asphalt Applied

- All Weather/Empire Base Sheet
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet
- Yosemite Venting Base Sheet

Torch Welded

- Flintlastic APP Base T
- Flintlastic STA
- Flintlastic STA Plus
- Flintlastic Ultra Poly SMS

Self-Adhered

- Black Diamond Base Sheet**
- Flintlastic Ultra Glass SA**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0. Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

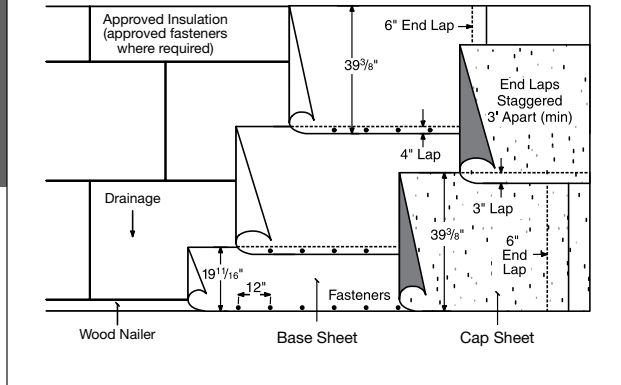
* Available with CoolStar® reflective granules

** Not approved over Flintlastic APP Base T, Flintlastic STA or Flintlastic STA Plus

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APP-IN-2-CF



Base sheet mechanically attached through insulated substrate with heat welded side laps and torch-welded APP modified cap

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and approved gypsum coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet mechanically attached to approved substrate with heat welded side laps (Sec. 15.4.3)

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and approved gypsum coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

APPROVED BASE SHEETS:

- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTA*
- Flintlastic GTA-FR*
- Flintlastic STA
- Flintlastic STA Plus

FINAL SURFACING:

For optional surfacing see Section 14.0.

Flintlastic STA and STA Plus (used as cap sheets) require reflective coating.

- FlintCoat A-300 or W (required over Flintlastic STA and STA Plus)

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

TABLE OF CONTENTS

Specification Nomenclature

SBS Warranty Matrix

HOT ASPHALT

SBS-C-2-A

SBS-C-3-A

SBS-C-4-A

SBS-I-2-A

SBS-I-3-A

SBS-I-4-A

SBS-IN-2-A

SBS-IN-3-A

SBS-IN-4-A

SBS-N-2-A

SBS-N-3-A

SBS-N-4-A

SBS(G)-C-2-A

SBS(G)-I-2-A

SBS(G)-IN-2-A

SBS(G)-N-2-A

TORCH-WELDED

SBS-C-2-T

SBS-C-3-T

SBS-C-4-T

SBS-I-2-T

SBS-I-3-T

SBS-I-4-T

SBS-IN-2-T

SBS-IN-3-T

SBS-IN-4-T

SBS-N-2-T

SBS-N-3-T

SBS-N-4-T

SBS-IN-2-CF

COLD PROCESS

SBS-C-2-C

SBS-C-3-C

SBS-C-4-C

SBS-I-2-C

SBS-I-3-C

SBS-I-4-C

SBS-IN-2-C

SBS-IN-3-C

SBS-IN-4-C

SBS-N-2-C

SBS-N-3-C

SBS-N-4-C

SPECIFICATION NOMENCLATURE

Please note: Each CertainTeed roof system specification includes multiple base, interply (if applicable) and cap sheet options. Warranty durations are dependent on both system specification and product pairing.

CertainTeed publishes the Commercial Roof Systems Specifications to guide in the specification of low-slope roof systems. The specifications are classified in alphanumeric combinations such as BUR(M)-N-5-A where:

Cap Sheet	(Surfacing)	Base Attachment	Number of Plies	Cap Application
SA Self Adhered	(G) Gravel Surface	C Fully-adhered/Non-insulated substrate	2, 3, 4, 5	S Self Adhered
APP Atactic Polypropylene	(M) Mineral Surfaced Cap Sheet	I Fully-adhered/Insulated substrate		T Torch Welded
SBS Styrene Butadiene Styrene	(S) Smooth	IN Mechanically attached through insulated substrate		A Hot Asphalt
BUR Built Up Roofing		N Mechanically attached through non-insulated substrate		C Cold Process (adhesive)
				CF CertaFast (base sheet application)

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

SBS SYSTEMS WITH BASE SHEET ADHERED

Warranty Duration	NDL Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Applicable Specs	Notes
12 years	\$4.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ¹	Glasbase™ Base Sheet, All Weather/Empire® Base Sheet, Yosemite® Venting Base Sheet	Flintlastic Ultra Poly SMS	Flood coat and gravel	SBS(G)-I-2-A, SBS(G)-C-A	Approved for re-cover
12 years	\$4.00/Sq	Optional ¹	Glasbase Base Sheet, Yosemite Venting Base Sheet	Optional	Flintlastic GMS, Flintlastic FR-P, Flintlastic FR Cap 30 T	SBS-I-2-A, SBS-I-2-C, SBS-I-2-T	Approved for re-cover
15 years	\$7.50/Sq	Optional ¹	All Weather/Empire Base Sheet, Flintlastic® Base 20, Flintlastic Base 20 T, Flintlastic Poly SMS, Black Diamond® Base Sheet	Optional	Flintlastic GMS, Flintlastic FR-P, Flintlastic FR Cap 30, Flintlastic FR Cap 30 T, Flintlastic GTS-FR	SBS-I-2-A, SBS-I-2-C, SBS-I-2-T	—
15 years	\$7.50/Sq	Optional ²	Flintglas® Ply 4	Flintglas Ply 4	Flintlastic GMS, Flintlastic FR-P	SBS-I-3-A, SBS-C-3-A, SBS-I-3-T, SBS-C-3-T	—
20 years	\$12.50/Sq	Double layer, second layer adhered	Flintglas Premium Ply 6	Flintglas Premium Ply 6	Flintlastic GMS, Flintlastic FR-P, Flintlastic Premium FR-P, Flintlastic GTS-FR	SBS-I-3-A, SBS-I-3-T	—
20 years	\$12.50/Sq	Double layer, second layer adhered	Flintlastic Base 20 ³ , Flintlastic Base 20 T, Black Diamond Base Sheet	Optional	Flintlastic FR Cap 30 ² , Flintlastic FR Cap 30 T	SBS-I-2-A, SBS-I-2-C, SBS-I-2-T	—
20 years	\$12.50/Sq	Optional ²	Flintlastic Ultra Poly SMS, Flintlastic Ultra Glass SA	Optional	Flintlastic GMS, Flintlastic FR-P, Flintlastic Premium FR-P, Flintlastic GTS-FR	SBS-C-2-A, SBS-I-2-A, SBS-I-2-T, SBS-C-2-T	—
20 years	\$12.50/Sq	Optional ¹	Black Diamond Base Sheet	Optional	Flintlastic GTS-FR, CoolStar, Flintlastic Premium FR-P, CoolStar	SBS-I-2-A, SBS-I-2-C ⁴	—
25 years	\$15.00/Sq	Double layer, second layer adhered	Flintlastic Ultra Poly SMS, Flintlastic Ultra Glass SA	Optional	Flintlastic Premium FR-P, Flintlastic GTS-FR	SBS-I-2-A, SBS-I-2-C, SBS-I-2-T	—
25 years	\$15.00/Sq	Double layer, second layer adhered	Black Diamond Base Sheet, Flintlastic Poly SMS	Flintlastic Poly SMS	Flintlastic Premium FR-P, Flintlastic GTS-FR	SBS-I-3-A, SBS-I-3-C, SBS-I-3-T	—

Note: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "SBS-I-2-X"
2. If "Optional" Insulation/Coverboard is utilized, refer to "SBS-I-3-X"
4. Not applicable for Black Diamond Base Sheet

* Please see the Specification Nomenclature chart on the preceding page to determine the X values.

3. CertainTeed's FlintBond® SBS Modified Adhesive must be utilized to obtain 20-year warranty duration.

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

SBS SYSTEMS WITH BASE SHEET MECHANICALLY ATTACHED

Warranty Duration	NDL Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Applicable Specs	Notes
12 years	\$4.00/Sq	Optional ¹	Glasbase™ Base Sheet, Yosemite Venting Base Sheet	Flintlastic Ultra Poly SMS	Flood coat and gravel	SBS(G)-IN-2-A, SBS(G)-N-2-A	Approved for re-cover
12 years	\$4.00/Sq	Optional ¹	Glasbase Base Sheet, All Weather/Empire® Base Sheet, Yosemite Venting Base Sheet	Optional	Flintlastic GMS, Flintlastic FR-P	SBS-N-2-A, SBS-IN-2-A, SBS-N-2-C, SBS-IN-2-C, SBS-N-2-T, SBS-IN-2-T	Approved for re-cover
15 years	\$7.50/Sq	Optional ¹	Flintlastic Poly SMS	Optional	Flintlastic GMS, Flintlastic FR-P	SBS-IN-2-A, SBS-N-2-A	—
20 years	\$12.50/Sq	Optional	Glasbase Base Sheet, All Weather/Empire Base Sheet	Flintlastic Base 20 ² , Flintlastic Base 20 T, Black Diamond Base Sheet, Flintlastic Poly SMS	Flintlastic FR Cap 30 ³ , Flintlastic FR Cap 30 T, Flintlastic GTS-FR, Flintlastic Premium FR-P	SBS-IN-3-A, SBS-IN-3-C, SBS-IN-3-T	—
20 years	\$12.50/Sq	Single layer, minimum 1.5" and approved cover	CertaFast System with Flintlastic Ultra Poly SMS	—	Flintlastic GMS, Flintlastic FR-P, Flintlastic Premium FR-P, Flintlastic GTS-FR	SBS-IN-2-CF	—
25 years	\$15.00/Sq	Single layer, minimum 1.5"	All Weather/Empire Base Sheet, Flintlastic Base 20, Flintlastic Poly SMS	Flintlastic Ultra Poly SMS, Flintlastic Ultra Glass SA	Flintlastic Premium FR-P, Flintlastic GTS-FR	SBS-IN-3-A, SBS-IN-3-C, SBS-IN-3-T	—

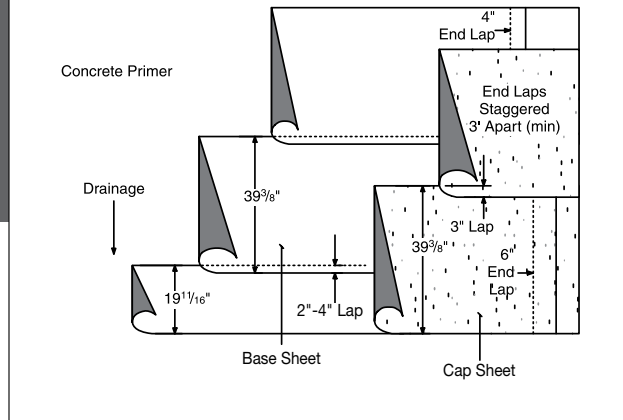
Notes: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "SBS-IN-2-X"
2. If "Optional" Insulation/Coverboard is utilized, refer to "SBS-IN-2-A"
3. If "Optional" Insulation/Coverboard is utilized, refer to "SBS-IN-3-X"

* Please see the Specification Nomenclature chart on the preceding page to determine the X values.

4. CertainTeed's FlintBond® SBS Modified Adhesive must be utilized to obtain 20-year warranty duration.

SBS-C-2-A



Base sheet and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(One mopping if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. Oneply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

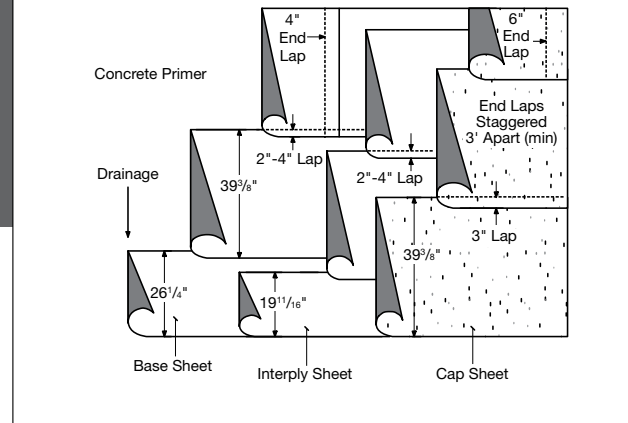
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-C-3-A

Base sheet, one interply sheet and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings)
(One or two moppings if base and/or interply are self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintglas® Ply 4
- Flintglas® Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- Flintlastic Base 20
- Black Diamond Base Sheet (self-adhered)
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

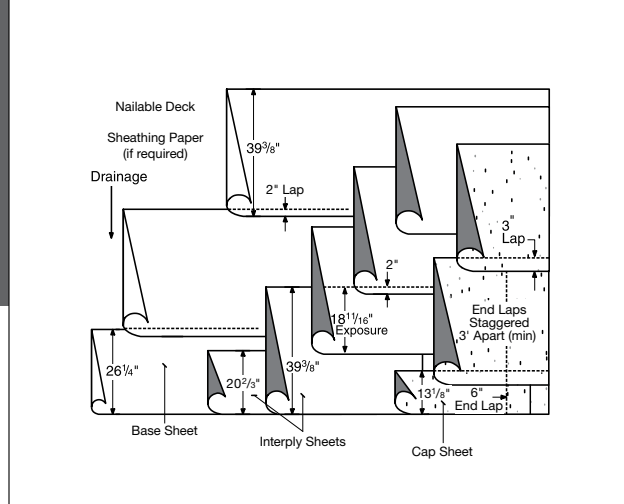
**Available with CoolStar® reflective granules*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-C-4-A



Base sheet, two interply sheets and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (four moppings)
(One or two moppings if base and/or interply are self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet
(self-adhered)^{1,2}
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintlastic Base 20
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

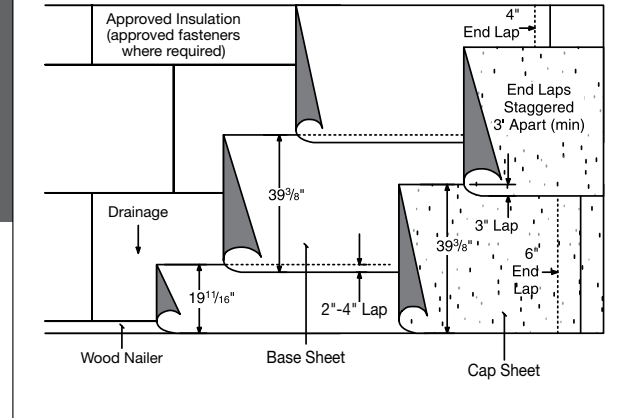
*Available with CoolStar® reflective granules

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

² Must be paired with interplies set in hot asphalt

SBS-I-2-A

Insulated substrates: base sheet and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings) (One mopping if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

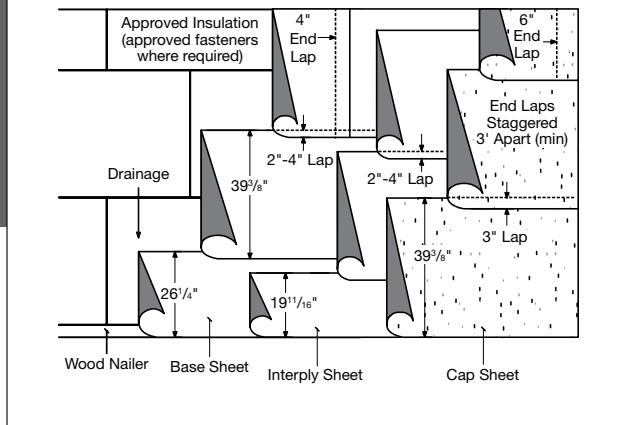
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-I-3-A



Insulated substrates: base sheet, one interply sheet and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings) (One or two moppings if base and/or interply are self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintglass® Ply 4
- Flintglass Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/ Empire Base Sheet
- Black Diamond Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

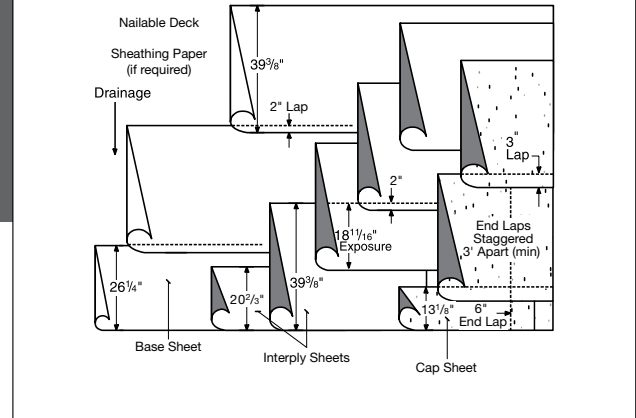
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-I-4-A

Insulated substrates: base sheet, two interply sheets and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (four moppings) (One or two moppings if base and/or interply are self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet

APPROVED INTERPLY SHEETS (2 PLYS):

(two of the following)

- Flintlastic Base 20
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

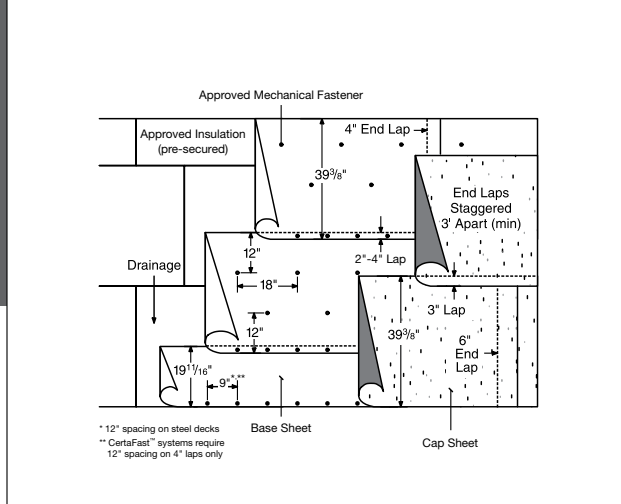
**Available with CoolStar® reflective granules*

¹ Must be paired with interplies set in hot asphalt

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-IN-2-A



Base sheet mechanically attached through insulated substrate and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of Insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

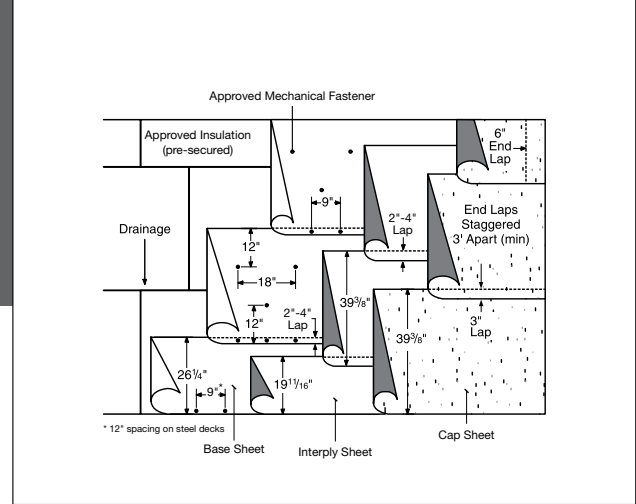
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-IN-3-A

Base sheet mechanically attached through insulated substrate, one interply sheet and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of Insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings) (One mopping if interply is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

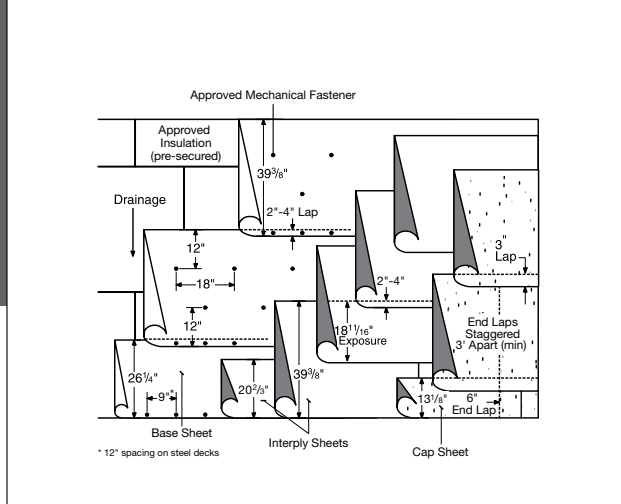
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-IN-4-A



Base sheet mechanically attached through insulated substrate, two interply sheets and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of Insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings) (One mopping if interply sheets are self-adhered)

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- All Weather Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

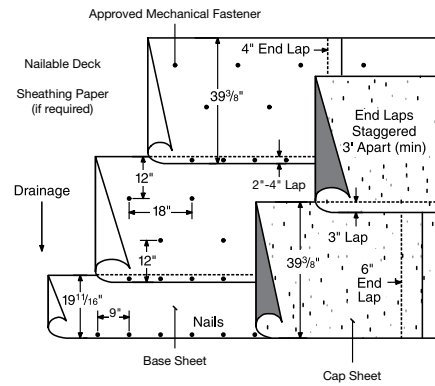
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

Consult CertainTeed General Recommendations for noted section references.

SBS-N-2-A

Base sheet mechanically attached through substrate, and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).
Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

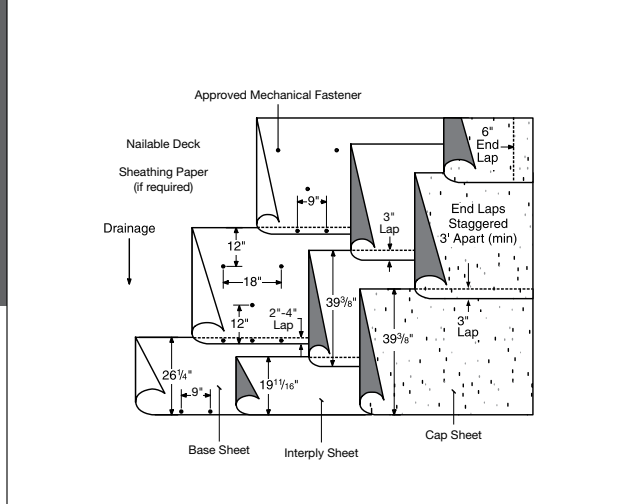
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-N-3-A



Base sheet mechanically attached through substrate, one interply sheet and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(One mopping if interply is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/ Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

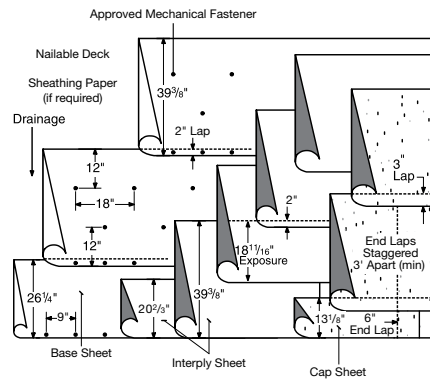
*Available with CoolStar® reflective granules

Consult CertainTeed General Recommendations for noted section references.

CertainTeed
SAINT-GOBAIN

SBS-N-4-A

Base sheet mechanically attached through substrate, two interply sheets and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Two approved interply sheets set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved cap sheet, mopped in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings)
(One mopping if interply sheets are self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(two of the following)

- All Weather/ Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

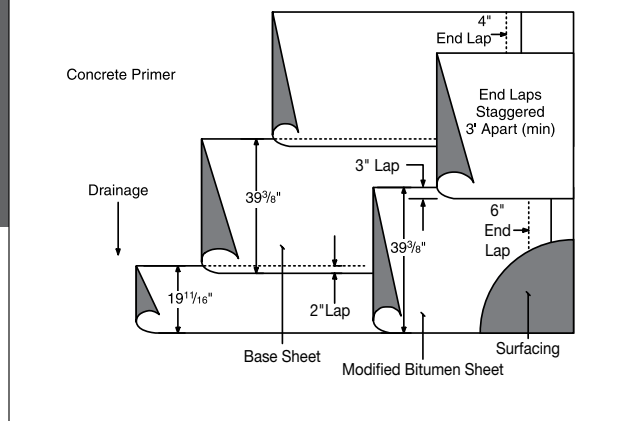
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS(G)-C-2-A



**Base sheet, one modified bitumen sheet
and a final surfacing**

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheet, set in hot asphalt (Sec. 7.0).

Approved final surfacing (Sec. 14.3)

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Modified bitumen sheet (1 ply)
- Flood coat and gravel
- ASTM D 312 asphalt (two moppings)
(One mopping if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/ Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹

- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

- Flintlastic Ultra Poly SMS

FINAL SURFACING (REQUIRED):

Asphalt flood coat and gravel (Sec. 14.3).

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

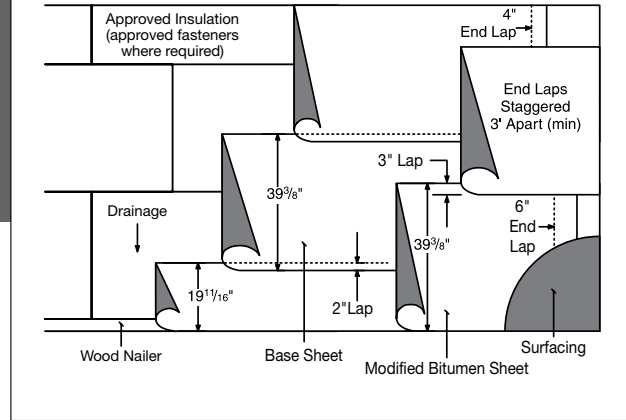
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS(G)-I-2-A

Insulated substrates: base sheet, one modified bitumen sheet and a final surfacing



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheet, set in hot asphalt (Sec. 7.0).

Approved final surfacing (Sec. 14.3)

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Modified bitumen sheet (1 ply)
- Flood coat and gravel
- ASTM D 312 asphalt (two full moppings and one flood coat) (One mopping if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/ Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)*
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)*
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

- Flintlastic Ultra Poly SMS

FINAL SURFACING (REQUIRED):

Asphalt flood coat and gravel (Sec. 14.3).

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

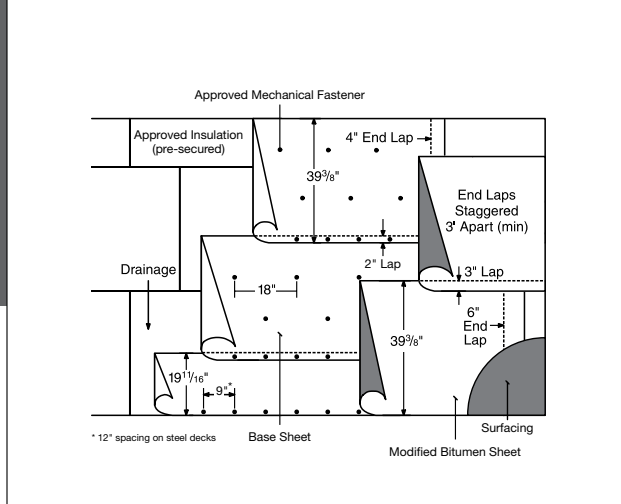
**Coverboard not required*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS(G)-IN-2-A

Base sheet, one modified bitumen sheet and a final surfacing



SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheet, set in hot asphalt (Sec. 7.0).

Approved final surfacing (Sec. 14.3)

SUMMARY OF MATERIALS:

- Insulation and/or coverboard
- Base sheet (1 ply)
- Modified bitumen sheet (1 ply)
- Flood coat and gravel
- ASTM D 312 asphalt (one full mopping and one flood coat)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/ Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

- Flintlastic Ultra Poly SMS

FINAL SURFACING (REQUIRED):

Asphalt flood coat and gravel (Sec. 14.3).

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

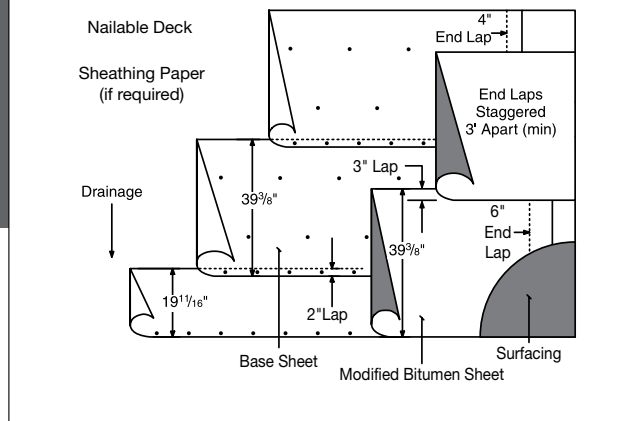
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS(G)-N-2-A

Base sheet mechanically attached through substrate, one modified bitumen sheet and a final surfacing



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheet, set in hot asphalt (Sec. 7.0).

Approved final surfacing (Sec. 14.3)

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Modified bitumen sheet (1 ply)
- Flood coat and gravel
- ASTM D 312 asphalt (one full mopping and one flood coat)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/ Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

- Flintlastic Ultra Poly SMS

FINAL SURFACING (REQUIRED):

Asphalt flood coat and gravel (Sec. 14.3).

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

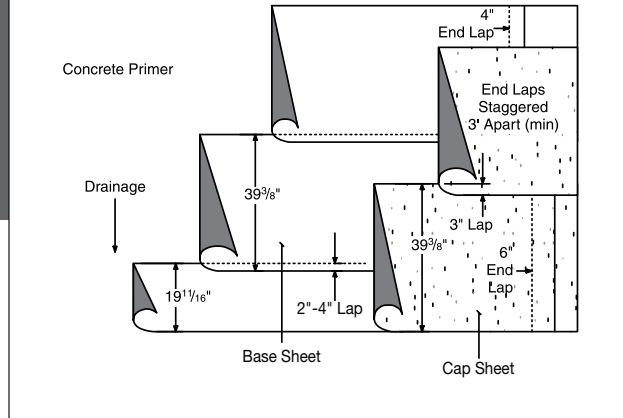
Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-C-2-T



Base sheet and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0), or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)
(No mopping if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintlastic Base 20 T
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

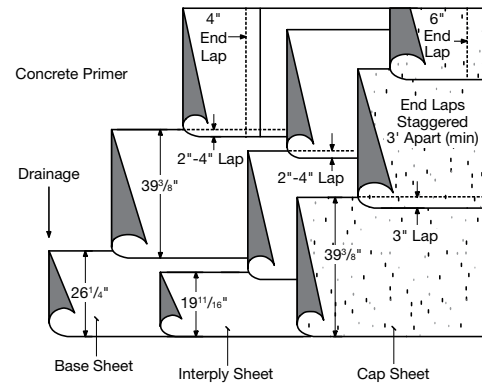
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-C-3-T

Base sheet, one interply sheet and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(No moppings if base and interply are torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Base 20 T
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/ Empire Base Sheet
- Black Diamond Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20 T
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

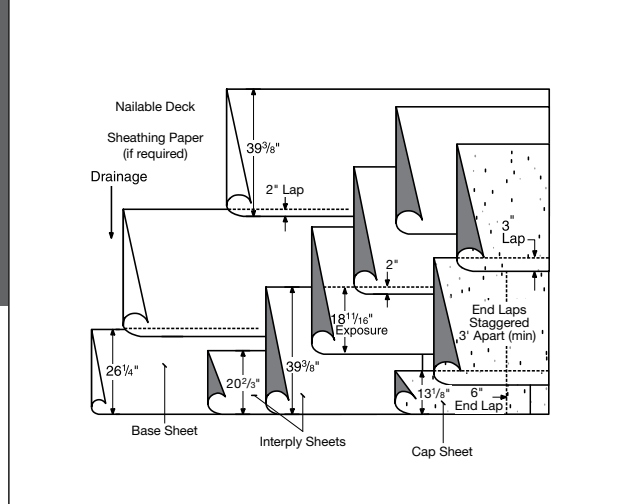
**Available with CoolStar® reflective granules*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-C-4-T



Base sheet, two interply sheets and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Two approved interply sheets set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- FlintBond adhesive (four moppings)
(three moppings if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond Base Sheet
(self-adhered)^{1,2}
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered^{**})¹
- Flintlastic Ultra Poly SMS
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered^{**})
- Flintlastic Ultra Poly SMS
- All Weather/Empire Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing, see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

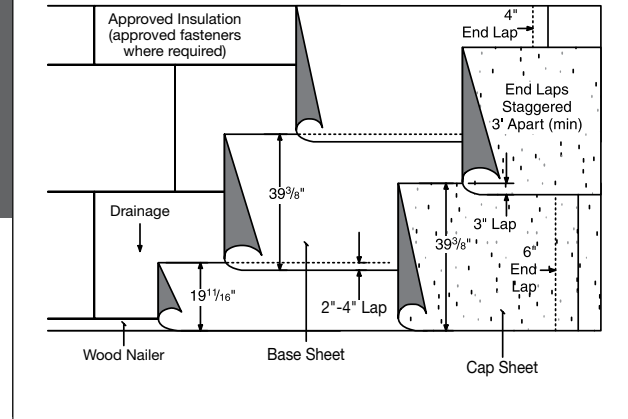
***May require torch warming in winter months (Sec. 10.2).*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

² Must be paired with torch-applied interplies

SBS-I-2-T

Insulated substrates: base sheet and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping) (No mopping if base is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintlastic Base 20
- Flintlastic Base 20 T**
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

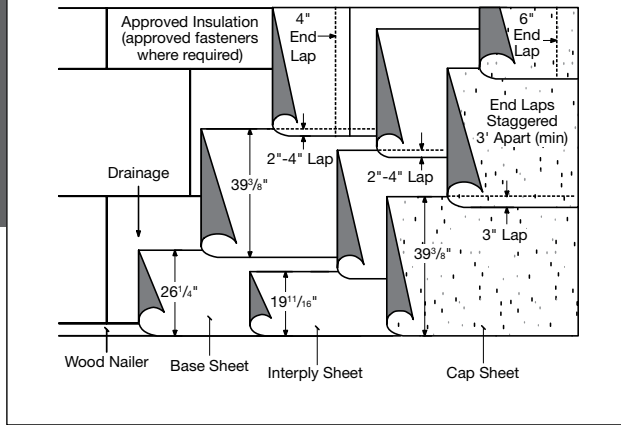
*Available with CoolStar® reflective granules

** Over approved gypsum coverboards only

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

SBS-I-3-T



Insulated substrates: base sheet, one interply sheet, and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings) (No moppings if base and interply are torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintglas® Ply 4
- Flintglas Ply 6
- Flintlastic Base 20
- Flintlastic Base 20 T**
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- Black Diamond Base Sheet (self-adhered)
- Flintlastic Base 20 T
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Flintglas Ply 4
- Flintglas Ply 6

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

**Over approved gypsum coverboards only

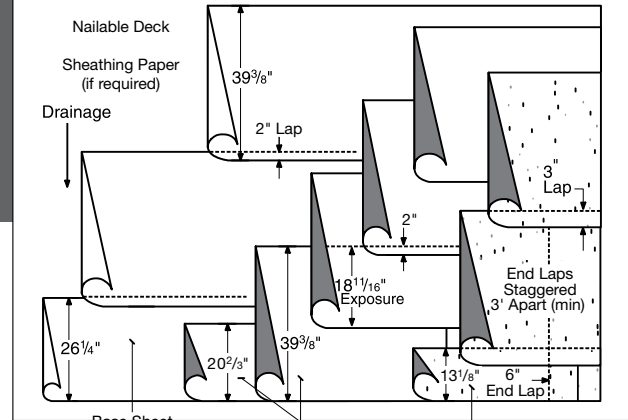
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-I-4-T

Insulated substrates: base sheet, two interply sheets and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (four moppings) (One or two moppings if base and/or interply are self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintglas® Ply 4
- Flintglas Ply 6
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- All Weather/ Empire Base Sheet
- Flintlastic Base 20
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing, see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

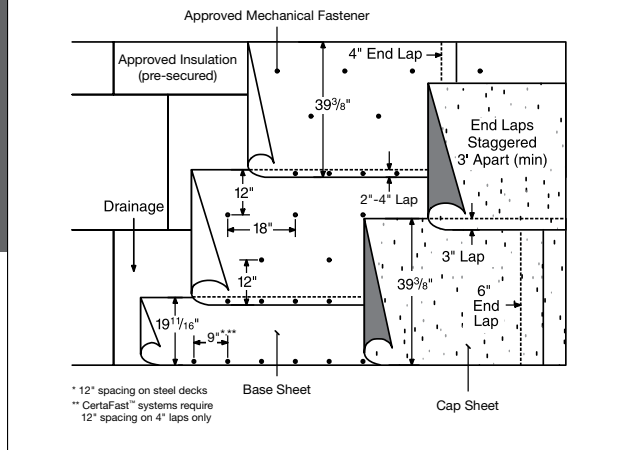
**Available with CoolStar® reflective granules*

¹ Must be paired with torch-applied interplies

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

SBS-IN-2-T



Base sheet mechanically attached through insulated substrate and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Insulation
- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

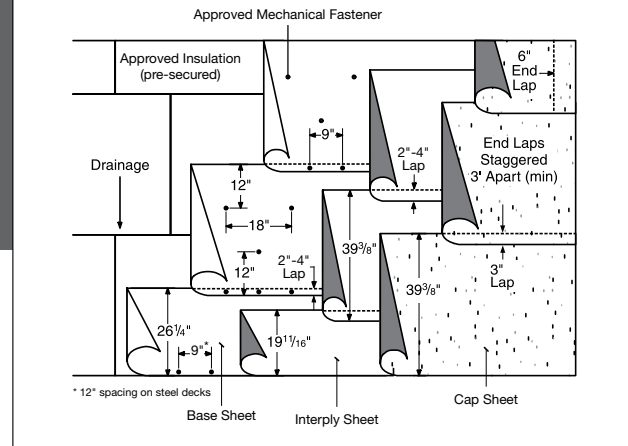
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-IN-3-T

Base sheet mechanically attached through insulated substrate, one interply sheet and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)
(No mopping if interply is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/ Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintglas Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Base 20 T
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS (torch welded or hot asphalt applied)

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

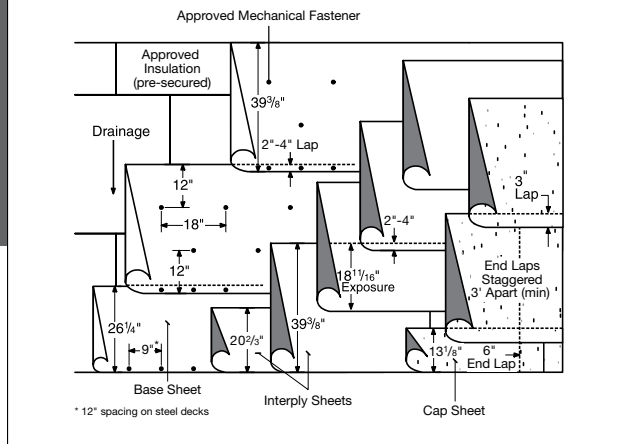
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

SBS-IN-4-T



Base sheet mechanically attached through insulated substrate, two interply sheets and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Two approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(No mopping if interply sheets are torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLYS):

(two of the following)

- All Weather/ Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Base 20
- Flintlastic Base 20 T
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS (torch welded or hot asphalt applied)

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

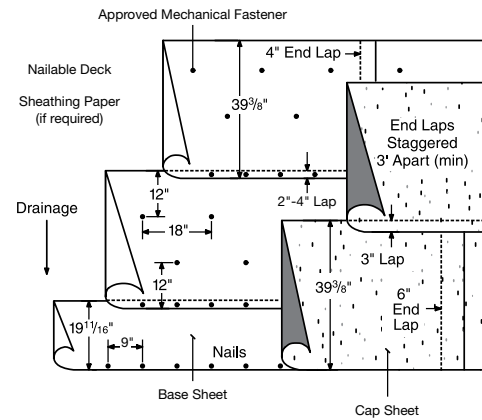
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-N-2-T

Base sheet mechanically attached through substrate and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).
Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

NOTE: A second layer of UL G2 base sheet can be mechanically attached, gang fastened with the first layer, if specified or required to meet desired fire rating.

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

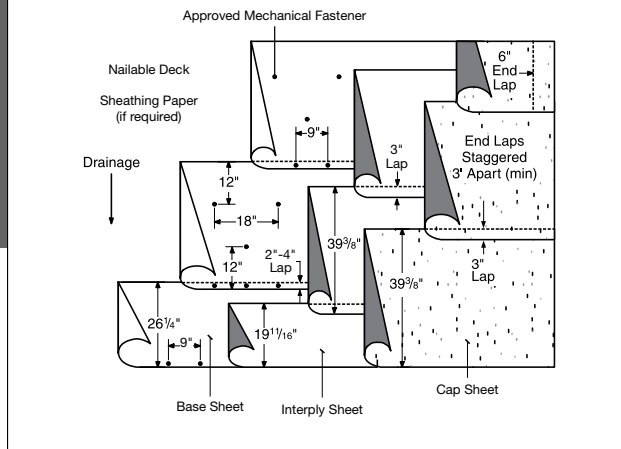
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-N-3-T



Base sheet mechanically attached through substrate, one interply sheet and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheet set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (one mopping)
(No mopping if interply is torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/ Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Base 20 T
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS (torch welded or hot asphalt applied)

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

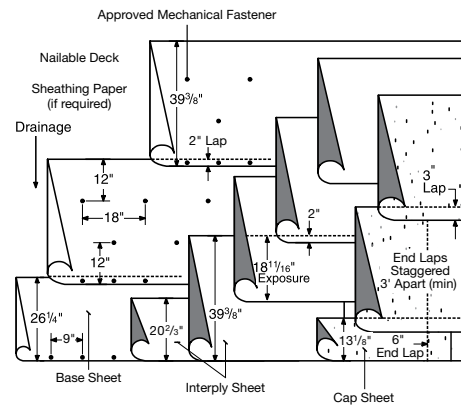
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-N-4-T

Base sheet mechanically attached through substrate, two interply sheets and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in hot asphalt (Sec. 7.0), torch-welded (Sec. 8.0) or self-adhered (Sec. 10.2).

Approved cap sheet, torch-welded (Sec. 8.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (two moppings)
(No mopping if interply sheets are torch-welded or self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- All Weather/ Empire Base Sheet
- Black Diamond® Base Sheet (self-adhered)
- Flintglas® Ply 4
- Flintglas Premium Ply 6
- Flintlastic Base 20
- Flintlastic Base 20 T
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS (torch welded or hot asphalt applied)

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30 T*
- Flintlastic GTS-FR*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

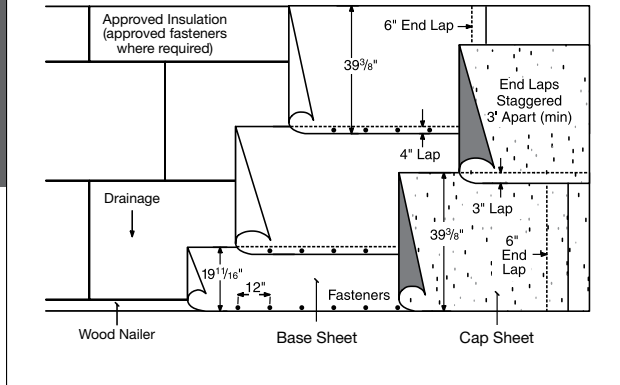
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-IN-2-CF



Base sheet mechanically attached through insulated substrate with heat welded side laps and torch-welded SBS modified cap

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and approved gypsum coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet mechanically attached to approved substrate with heat welded side laps (Sec. 15.4.3)

Approved cap sheet, torch welded (Sec. 8.0)

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)

APPROVED BASE SHEETS:

- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic GTS-FR

FINAL SURFACING:

For optional surfacing see Section 14.0.

- FlintCoat A-300 or W

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

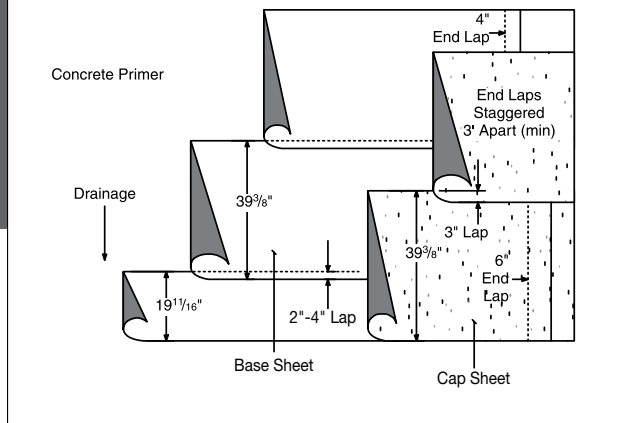
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.



Base sheet and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in FlintBond® cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (two moppings)
(One mopping if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)^{1**}
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

**May require torch warming in winter months (Sec. 10.2)

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

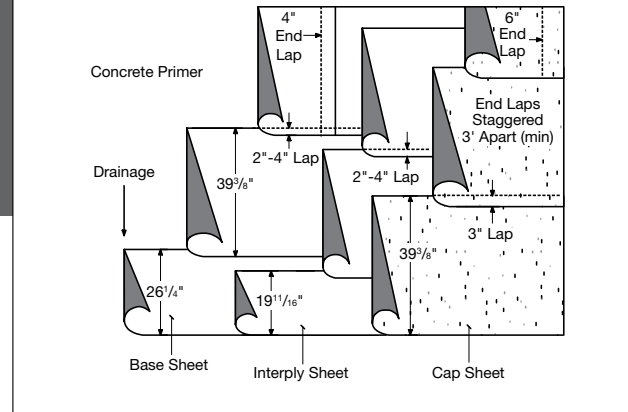
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-C-3-C

Base sheet, one interply sheet and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in FlintBond® cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved interply sheet set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (three moppings)
(Two moppings if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA
(self-adhered)^{1**}
- Flintlastic Ultra Poly SMS

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/Empire Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA
(self-adhered)^{**}
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

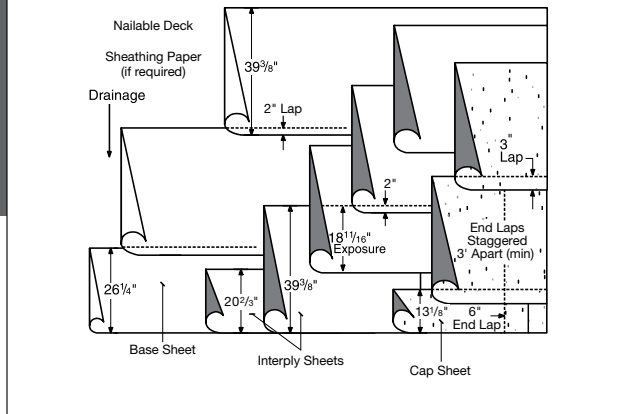
**Available with CoolStar® reflective granules*

***May require torch warming in winter months
(Sec. 10.2)*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Two approved interply sheets set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- FlintBond adhesive (four moppings) (three moppings if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered**)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered**)¹
- Flintlastic Ultra Poly SMS
- All Weather/Empire Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing, see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

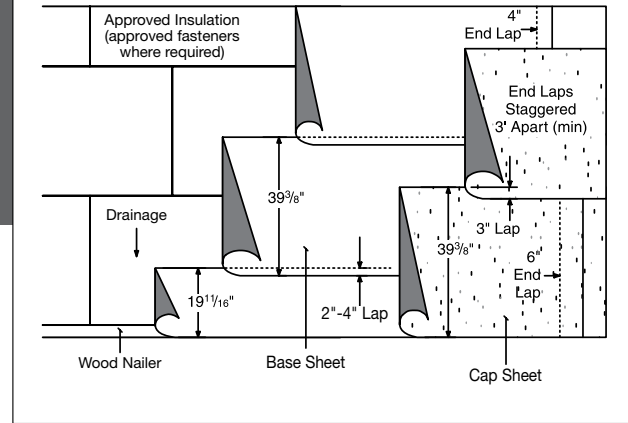
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-I-2-C

Insulated substrates: base sheet and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in FlintBond® cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (two moppings) (One mopping if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

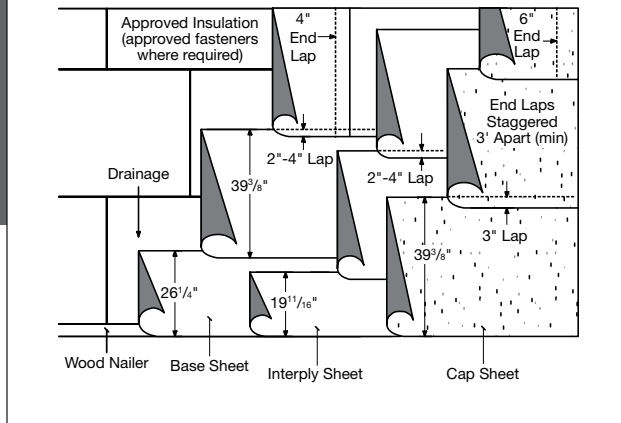
**Available with CoolStar® reflective granules*

***May require torch warming in winter months (Sec. 10.2)*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-I-3-C



Insulated substrates: base sheet, one interply sheet and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in FlintBond® cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved interply sheet set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (three moppings)
(Two moppings if base is self adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/Empire Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)******
- Flintlastic Ultra Poly SMS
- Glasbase Base Sheet

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

**May require torch warming in winter months (Sec. 10.2)

***If not used as base ply

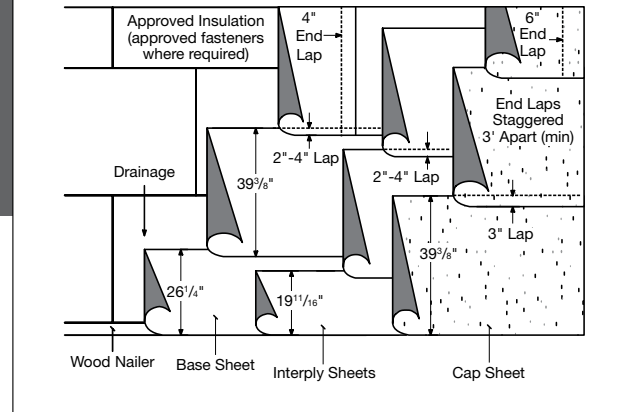
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-I-4-C

Insulated substrates: base sheet, two interply sheets and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2)

Two approved interply sheets set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- FlintBond adhesive (four moppings) (three moppings if base is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing, see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One-ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

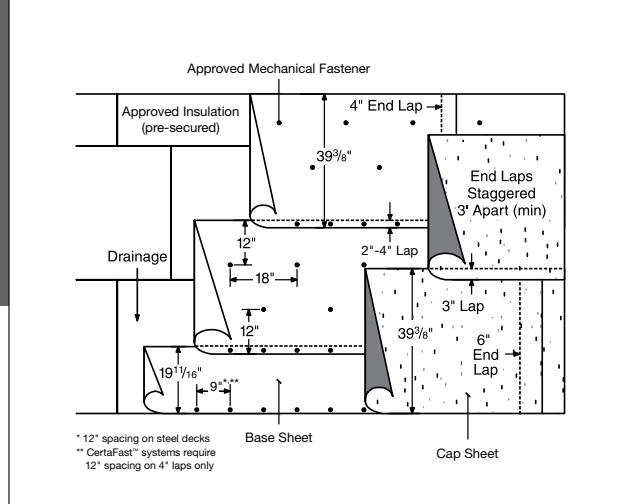
* Available with CoolStar® reflective granules

** May require torch warming in winter months (Sec. 10.2)

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-IN-2-C



Base sheet mechanically attached through insulated substrate and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved cap sheet set in FlintBond® cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond Adhesive (one mopping)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS**
- Flintlastic Ultra Poly SMS**

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

*Available with CoolStar® reflective granules

**CertaFast system approved

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

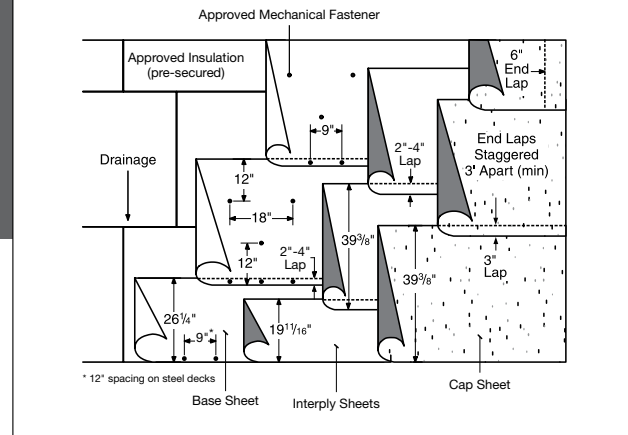
Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

CertainTeed
SAINT-GOBAIN

SBS-IN-3-C

Base sheet mechanically attached through insulated substrate, one interply sheet and an SBS modified cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Approved interply sheet set in FlintBond® cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (two moppings)
(One mopping if interply is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/Empire Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

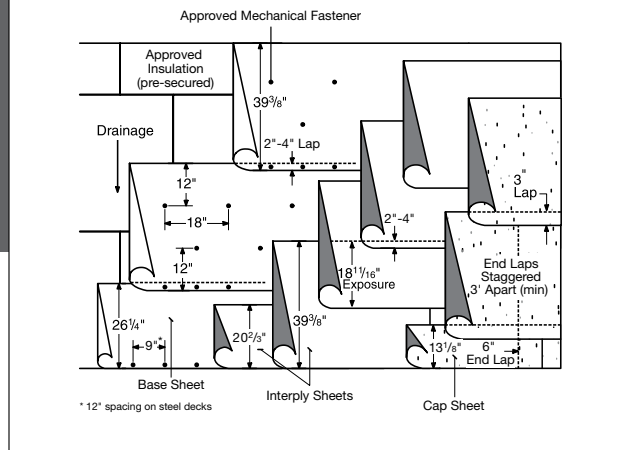
**Available with CoolStar® reflective granules*

***May require torch warming in winter months (Sec. 10.2)*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-IN-4-C



Base sheet mechanically attached through insulated substrate, two interply sheets and an SBS modified cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Insulation pre-secured with mechanical attachment.

Approved base sheet, mechanically attached with approved screws and plates (Sec. 15.4.2).

Two approved interply sheets set in FlintBond® cold process adhesive (Sec. 9.0).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheet (2 plies)
- Cap sheet (1 ply)
- FlintBond adhesive (three moppings)

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- All Weather/Empire Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

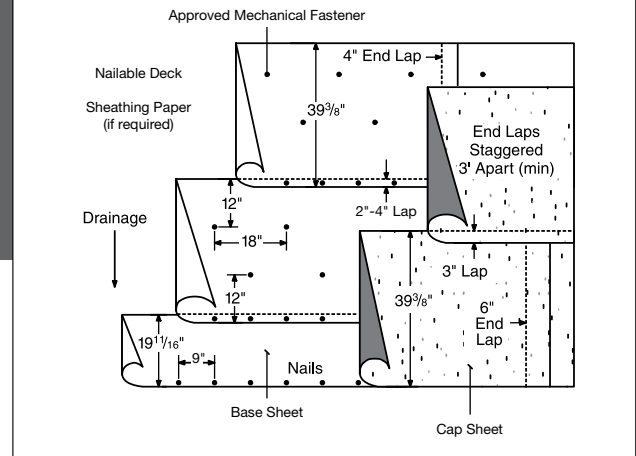
*Available with CoolStar® reflective granules

Consult CertainTeed General Recommendations for noted section references.

CertainTeed
SAINT-GOBAIN

SBS-N-2-C

Base sheet mechanically attached through substrate and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved cap sheet set in FlintBond® cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (one mopping)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

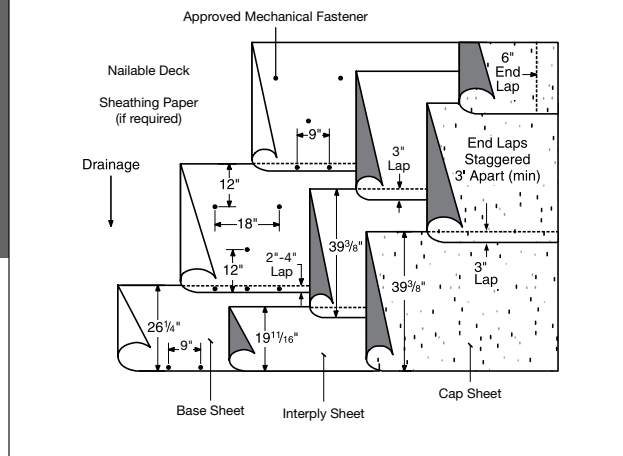
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

SBS-N-3-C



Base sheet mechanically attached through substrate, one interply sheet and an SBS modified cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheet set in FlintBond cold process adhesive (Sec. 9.0) or self-adhered (Sec. 10.2).

Approved cap sheet set in FlintBond® cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheet (1 ply)
- Cap sheet (1 ply)
- FlintBond adhesive (two moppings)
(One mopping if interply is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED INTERPLY SHEETS:

(one of the following)

- All Weather/ Empire Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules
**May require torch warming in winter months
(Sec. 10.2)*

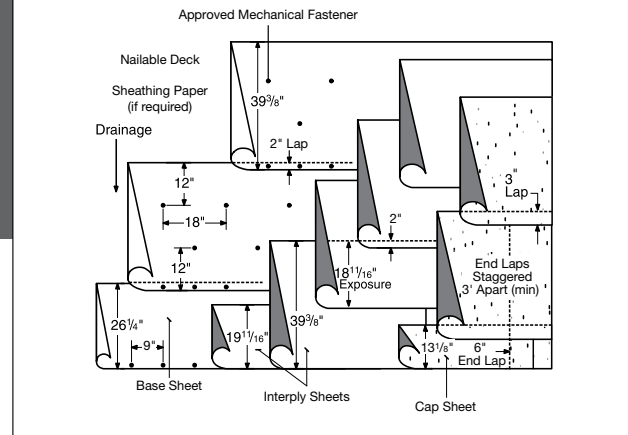
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

SBS-N-4-C

Base sheet mechanically attached through substrate, two interply sheets and an SBS modified cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in FlintBond® cold process adhesive (Sec. 9.0).

Approved cap sheet set in FlintBond cold process adhesive (Sec. 9.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 plies)
- Cap sheet (1 ply)
- FlintBond adhesive (three moppings)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED INTERPLY SHEETS:

(two of the following)

- All Weather/Empire Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS

APPROVED CAP SHEETS:

(one of the following)

- Flintlastic FR Cap 30*
- Flintlastic FR-P*
- Flintlastic GMS*
- Flintlastic Premium FR-P*

FINAL SURFACING:

For optional surfacing see Section 14.0.

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

**Available with CoolStar® reflective granules*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any Application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per Applicable local building codes.

BUR SYSTEMS

TABLE OF CONTENTS

Specification Nomenclature

BUR Warranty Matrix

BUR(G)-C-4-A

BUR(G)-I-4-A

BUR(G)-N-3-A

BUR(G)-N-4-A

BUR(M)-C-4-A

BUR(M)-C-5-A

BUR(M)-I-4-A

BUR(M)-I-5-A

BUR(M)-N-4-A

BUR(M)-N-5-A

BUR(S)-C-4-A

BUR(S)-I-4-A

BUR(S)-N-4-A

SPECIFICATION NOMENCLATURE

Please note: Each CertainTeed roof system specification includes multiple base, ply (if applicable) and cap sheet options. Warranty durations are dependent on both system specification and product pairing.

CertainTeed publishes the Commercial Roof Systems Specifications to guide in the specification of low-slope roof systems. The specifications are classified in alphanumeric combinations such as BUR(M)-N-5-A where:

Cap Sheet	(Surfacing)	Base Attachment	Number of Plies	Cap Application
SA Self Adhered	(G) Gravel Surface	C Fully-adhered/Non-insulated substrate	2, 3, 4, 5	S Self Adhered
APP Atactic Polypropylene	(M) Mineral Surfaced Cap Sheet	I Fully-adhered/Insulated Substrate		T Torch Welded
SBS Styrene Butadiene Styrene	(S) Smooth	IN Mechanically attached through insulated substrate		A Hot Asphalt
BUR Built Up Roofing		N Mechanically attached through non-insulated substrate		C Cold Process (adhesive)
				CF CertaFast (base sheet application)

Note: Unless noted, prior Approval required by CT Tech Services for re-cover.

¹Special conditions Apply. Requires Integrity Maintenance Coverage®, Gold Star contractors only.

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

BUR SYSTEMS WITH BASE SHEET ADHERED

Warranty Duration	Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Applicable Specs	Notes
10 years	\$6.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ¹	Glasbase™ Base Sheet, Flintglas® Ply 4, All Weather/Empire® Base	3-Flintglas Ply 4	Flood coat and gravel or approved coating	BUR(G)-I-4-A, BUR(S)-I-4-A, BUR(G)-N-4-A, BUR(S)-N-4-A, BUR(G)-C-4-A, BUR(S)-C-4-A	Approved for re-cover
10 years	\$6.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ²	Glasbase Base Sheet, Flintglas Ply 4, All Weather/Empire Base	2-Flintglas Ply 4	Flintglas MS Cap Sheet	BUR(M)-I-4-A, BUR(M)-N-4-A, BUR(M)-C-4-A	Approved for re-cover
15 years	\$10.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ¹	Glasbase Base Sheet, Flintglas Premium Ply 6, All Weather/Empire Base	3-Flintglas Premium Ply 6	Flood coat and gravel or approved coating	BUR(G)-I-4-A, BUR(S)-I-4-A, BUR(G)-N-4-A, BUR(S)-N-4-A, BUR(G)-C-4-A, BUR(S)-C-4-A	—
15 years	\$10.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ²	Glasbase Base Sheet, Flintglas Premium Ply 6, All Weather/Empire Base	2-Flintglas Premium Ply 6	Flintglas MS Cap Sheet	BUR(M)-I-4-A, BUR(M)-N-4-A, BUR(M)-C-4-A	—
15 years	\$10.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ³	Glasbase Base Sheet, Flintglas Ply 4, All Weather/Empire Base	3-Flintglas Ply 4	Flintglas MS Cap Sheet	BUR(M)-I-5-A, BUR(M)-N-5-A, BUR(M)-C-5-A	—
20 years	\$15.00/Sq	Optional (coverboard required over polyisocyanurate if base is mopped) ³	Glasbase Base Sheet, Flintglas Premium Ply 6, All Weather/Empire Base, Black Diamond® Base Sheet	3-Flintglas Premium Ply 6	Flintglas MS Cap Sheet	BUR(M)-I-5-A, BUR(M)-N-5-A, BUR(M)-C-5-A	—
20 years	\$15.00/Sq	Double layer of insulation; coverboard required if base is mopped	Glasbase Base Sheet, Flintglas Premium Ply 6, All Weather/Empire Base, Black Diamond® Base Sheet	3-Flintglas Premium Ply 6	Flood coat and gravel or approved coating	BUR(G)-I-4-A, BUR(S)-I-4-A	—
20 years	\$15.00/Sq	Double layer of insulation; coverboard required if base is mopped	Glasbase Base Sheet, Flintglas Premium Ply 6, All Weather/Empire Base, Black Diamond® Base Sheet	2-Flintglas Premium Ply 6	Flintglas MS Cap Sheet	BUR(M)-I-4-A	—

Note: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "BUR(G or S)-X-4-A"*

2. If "Optional" Insulation/Coverboard is utilized, refer to "BUR(M)-X-4-A"*

3. If "Optional" Insulation/Coverboard is utilized, refer to "BUR(M)-X-5-A"*

* Please see the Specification Nomenclature chart on the preceding page to determine the X values.

WARRANTY DURATION MATRIX

Roll goods listed under Base, Interply or Cap columns and separated by a comma are options for system configurations within each respective warranty duration row; these are not intended to be installed together or additively.

BUR SYSTEMS WITH MECHANICALLY ATTACHED BASE SHEET

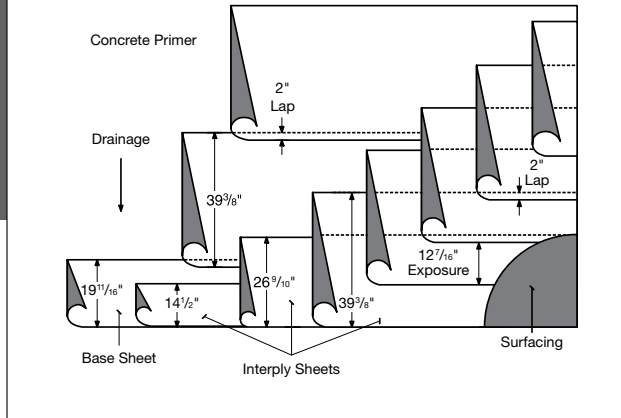
Warranty Duration	Warranty Fee (100 Sq Min)	Insulation/Coverboard	Base	Interply	Cap	Application Specs	Notes
10 years	\$6.00/Sq	Optional ¹	Glasbase™ Base Sheet	3-Flintglas® Ply 4	Flood coat and gravel or approved coating	BUR(G)-N-4-A, BUR(G)-IN-4-A, BUR(S)-N-4-A, BUR(S)-IN-4-A	Approved for re-cover
10 years	\$6.00/Sq	Optional ²	Glasbase Base Sheet	2-Flintglas Ply 4	Flintglas MS Cap Sheet	BUR(M)-N-4-A, BUR(M)-IN-4-A	Approved for re-cover
15 years	\$10.00/Sq	Optional ¹	Glasbase Base Sheet	3-Flintglas Premium Ply 6	Flood coat and gravel or approved coating	BUR(G)-N-4-A, BUR(G)-IN-4-A, BUR(S)-N-4-A, BUR(S)-IN-4-A	—
15 years	\$10.00/Sq	Optional ²	Glasbase Base Sheet	2-Flintglas Premium Ply 6	Flintglas MS Cap Sheet	BUR(M)-N-4-A, BUR(M)-IN-4-A	—
15 years	\$10.00/Sq	Optional ³	Glasbase Base Sheet	3-Flintglas Ply 4	Flintglas MS Cap Sheet	BUR(M)-N-5-A, BUR(M)-IN-5-A	—
20 years	\$15.00/Sq	Optional ³	Glasbase Base Sheet	3-Flintglas Premium Ply 6	Flintglas MS Cap Sheet	BUR(M)-N-5-A, BUR(M)-IN-5-A	—
20 years	\$15.00/Sq	Double layer of insulation	Glasbase Base Sheet	3-Flintglas Premium Ply 6	Flood coat and gravel or approved coating	BUR(G)-IN-4-A, BUR(S)-IN-4-A	—
20 years	\$15.00/Sq	Double layer of insulation	Glasbase Base Sheet	2-Flintglas Premium Ply 6	Flintglas MS Cap Sheet	BUR(M)-IN-4-A	—

Note: Unless noted, prior approval required by CT Tech Services for re-cover.

1. If "Optional" Insulation/Coverboard is utilized, refer to "BUR(G or S)-X-4-A"
2. If "Optional" Insulation/Coverboard is utilized, refer to "BUR(M)-X-4-A"
3. If "Optional" Insulation/Coverboard is utilized, refer to "BUR(M)-X-5-A"

* Please see the Specification Nomenclature chart on the preceding page to determine the X values.

BUR(G)-C-4-A



Self-adhered SBS base sheet or hot asphalt mopped BUR or SBS modified base sheet, three hot asphalt applied BUR interply sheets and a final surfacing

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

FINAL SURFACING:

Asphalt flood coat and gravel (Sec. 14.3).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (3 plies)
- Flood coat and gravel
- ASTM D 312 asphalt (four moppings)
(Three moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas Ply 4*
- Flintglas Premium Ply 6*

SURFACING (REQUIRED):

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

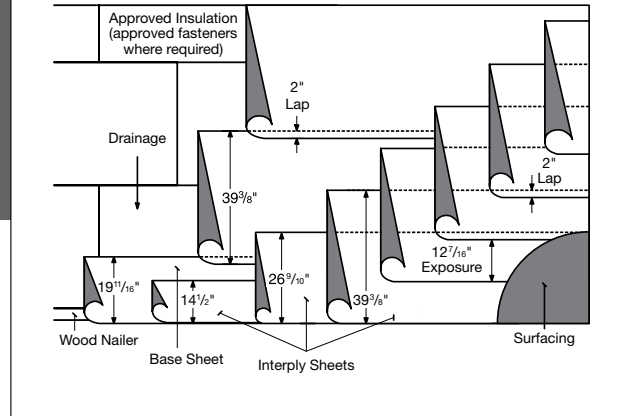
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

BUR(G)-I-4-A

Insulated substrates: self-adhered SBS base sheet or hot asphalt mopped BUR or SBS modified base sheet, three hot asphalt applied BUR interply sheets and a final surfacing



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

FINAL SURFACING:

Asphalt flood coat and gravel (Sec. 14.3).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheets (3 plies)
- Flood coat and gravel
- ASTM D 312 asphalt (four moppings) (Three moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)**
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

SURFACING (REQUIRED):

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

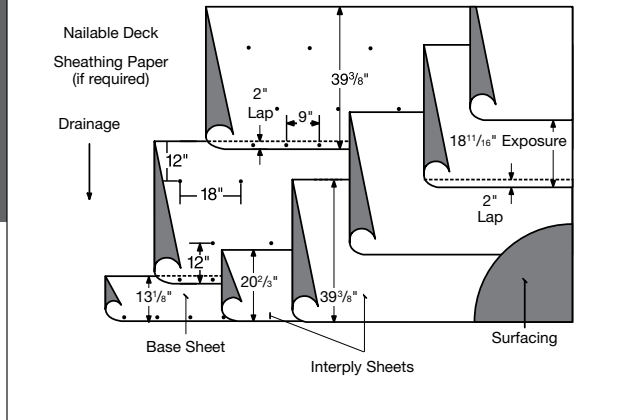
**For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.*

***Coverboard not required*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

BUR(G)-N-3-A



BUR or SBS base sheet mechanically attached through substrate, two adhered BUR interply sheets and final surfacing

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in hot asphalt (Sec. 7.0).

FINAL SURFACING:

Asphalt flood coat and gravel (Sec. 14.3).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 plies)
- Flood coat and gravel
- ASTM D 312 asphalt (two moppings)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS

(2 PLIES):

(two of the following)

- Flintglas® Ply 4
- Flintglas Premium Ply 6

SURFACING (REQUIRED):

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

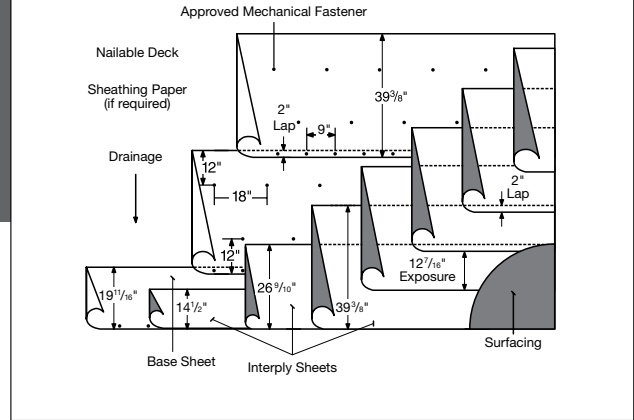
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

BUR(G)-N-4-A

BUR or SBS base sheet mechanically attached through substrate, three adhered BUR interply sheets and final surfacing



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 3" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved final surfacing (Sec. 14.3)

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (3 plies)
- Flood coat and gravel
- ASTM D 312 asphalt (three moppings)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS

(3 PLIES):

(three of the following)

- Flintglas® Ply 4
- Flintglas Premium Ply 6

FINAL SURFACING (REQUIRED):

- Asphalt flood coat – 60 lbs/sq
- Gravel surfacing – 400 lbs/sq

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

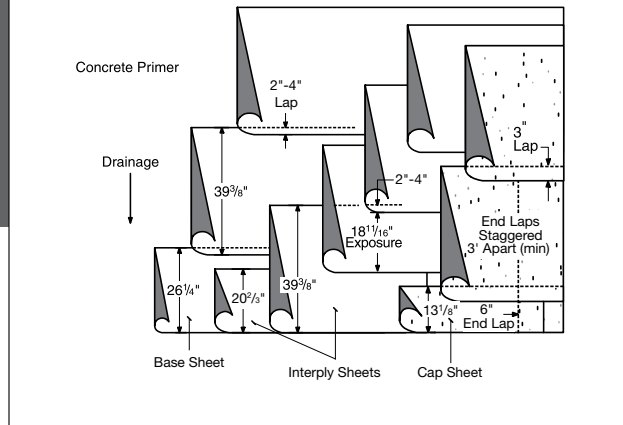
Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

BUR(M)-C-4-A



Self-adhered SBS modified base sheet or hot asphalt mopped BUR or SBS modified base sheet, two hot asphalt applied BUR interply sheets and BUR cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved mineral-surfaced cap sheet set in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (2 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (four moppings) (Three moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

APPROVED CAP SHEETS:

- Flintglas MS Cap**

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.*

***Available with CoolStar® reflective granules*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

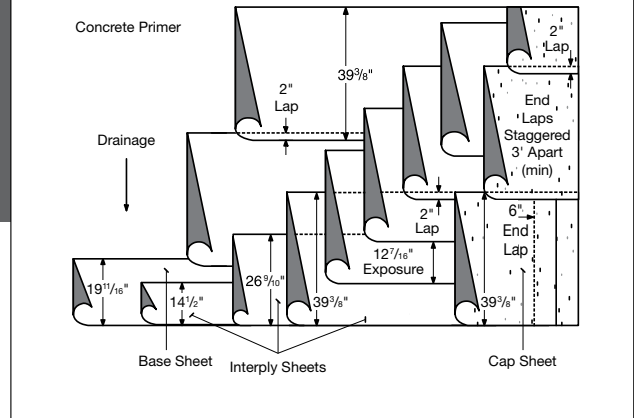
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

BUR(M)-C-5-A

Self-adhered SBS modified base sheet or hot asphalt mopped BUR or SBS modified base sheet, three hot asphalt applied BUR interply sheets and BUR cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved mineral-surfaced cap sheet set in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (3 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (five moppings) (Four moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

APPROVED CAP SHEETS:

- Flintglas MS Cap**

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.*

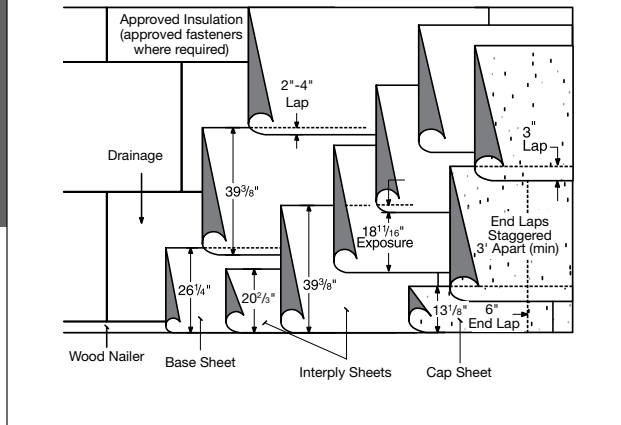
***Available with CoolStar® reflective granules*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

BUR(M)-I-4-A



Insulated substrates: self-adhered SBS modified base sheet or hot asphalt mopped BUR or SBS modified base sheet, two hot asphalt applied BUR interply sheets and BUR cap sheet

SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or Approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder / anchor sheets (Sec. 4.7)

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved mineral-surfaced cap sheet set in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/ or coverboard
- Base sheet (1 ply)
- Interply sheets (2 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (four moppings) (Three moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)**
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (2 PLIES):

(two of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

APPROVED CAP SHEETS:

- Flintglas MS Cap***

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.

**Coverboard not required

***Available with CoolStar® reflective granules

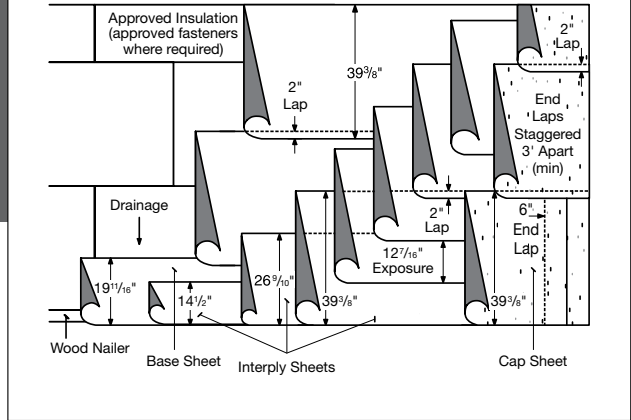
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

BUR(M)-I-5-A

Insulated substrates: self-adhered SBS modified base sheet or hot asphalt mopped BUR or SBS modified base sheet, three hot asphalt applied BUR interply sheets and BUR cap sheet



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved mineral-surfaced cap sheet set in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheets (3 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (five moppings) (Four moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)**
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

APPROVED CAP SHEETS:

- Flintglas MS Cap***

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.

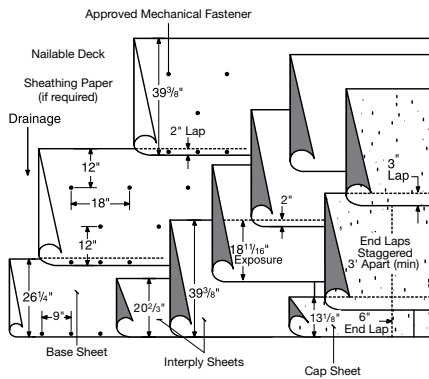
**Coverboard not required

***Available with CoolStar® reflective granules

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

BUR(M)-N-4-A



BUR or SBS base sheet mechanically attached through substrate, two adhered BUR interply sheets and BUR cap sheet

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved mineral-surfaced cap sheet set in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (2 ply)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (three moppings)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS

(2 PLIES):

(two of the following)

- Flintglas® Ply 4
- Flintglas Premium Ply 6

APPROVED CAP SHEETS:

- Flintglas MS Cap*

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

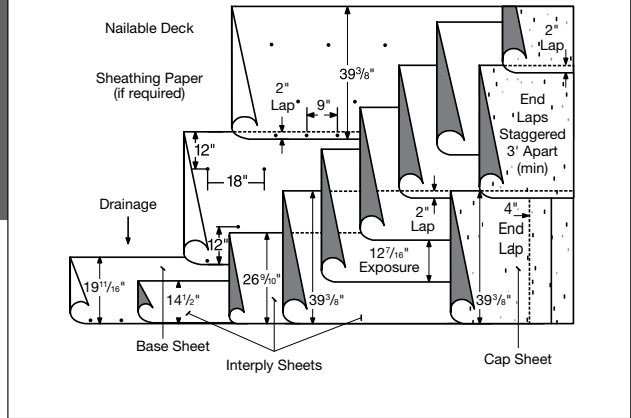
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

BUR(M)-N-5-A

BUR or SBS base sheet mechanically attached through substrate, three adhered BUR interply sheets and BUR cap sheet



SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in hot asphalt (Sec. 7.0).

Approved mineral-surfaced cap sheet set in hot asphalt (Sec. 7.0).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (3 plies)
- Cap sheet (1 ply)
- ASTM D 312 asphalt (four moppings)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS

(3 PLIES):

(three of the following)

- Flintglas® Ply 4
- Flintglas Premium Ply 6

APPROVED CAP SHEETS:

- Flintglas MS Cap*

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

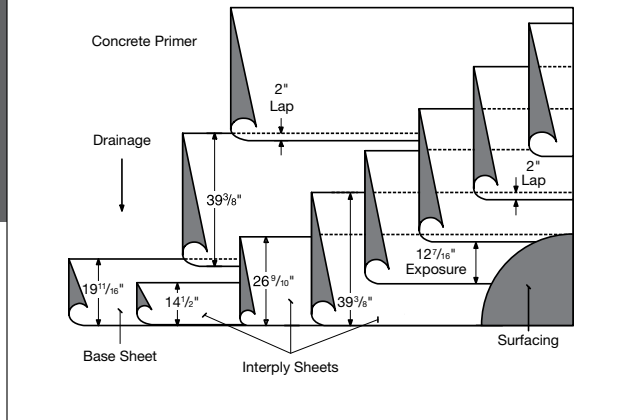
Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

* Available with CoolStar® reflective granules

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

BUR(S)-C-4-A



Self-adhered SBS modified base sheet or hot asphalt mopped BUR or SBS modified base sheet, three hot asphalt applied BUR interply sheets and a coating

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec 3.12)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

FINAL SURFACING:

Approved final surfacing (Sec. 14.3).

SUMMARY OF MATERIALS:

- FlintPrime® asphalt primer
- Base sheet (1 ply)
- Interply sheets (3 ply)
- Final surfacing
- ASTM D 312 asphalt (four moppings) (Three moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)¹
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)¹
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

SURFACING (REQUIRED):

1 Asphalt glaze coat – 15 lbs/sq

followed by:

2 FlintCoat®-E

followed by either:

3 FlintCoat-A 300 or
FlintCoat-W

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

** For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.*

¹ Roof systems self-adhered to wood decks are limited to Asphaltic Membrane Limited Warranties on Systems

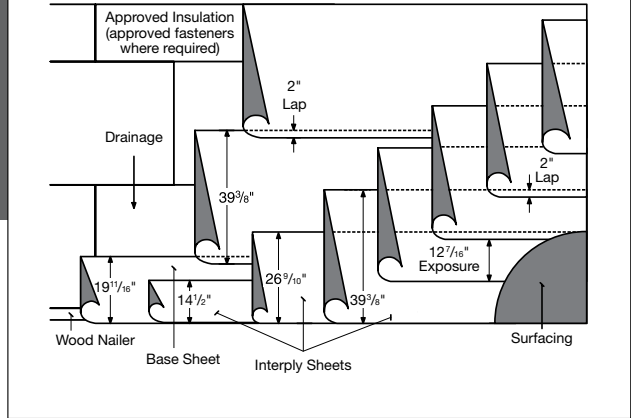
WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

BUR(S)-I-4-A

Insulated substrates: Self-adhered SBS modified base sheet or hot asphalt mopped BUR or SBS modified base sheet, three hot asphalt Applied BUR interply sheets and a coating



SUBSTRATE:

- Steel (Sec. 3.5)
- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Insulation (Sec. 4.0)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

One or more layers of approved insulation and/or coverboard:

- Base layer mechanically attached and additional layers mechanically attached or adhered in hot asphalt or approved adhesive.
- Base layer and additional layers adhered in hot asphalt or approved adhesive.
- Vapor retarder/anchor sheets (Sec. 4.7).

Approved base sheet set in hot asphalt (Sec. 7.0) or self-adhered (Sec. 10.2).

Approved interply sheets set in hot asphalt (Sec. 7.0).

FINAL SURFACING:

Approved final surfacing (Sec. 14.3).

SUMMARY OF MATERIALS:

- One or more layers of insulation and/or coverboard
- Base sheet (1 ply)
- Interply sheets (3 ply)
- Final surfacing
- ASTM D 312 asphalt (four moppings) (Three moppings if base sheet is self-adhered)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Black Diamond® Base Sheet (self-adhered)**
- Flintlastic Base 20
- Flintglas® Ply 4*
- Flintglas Premium Ply 6*
- Flintlastic Poly SMS
- Flintlastic Ultra Glass SA (self-adhered)**
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas Ply 4
- Flintglas Premium Ply 6

SURFACING (REQUIRED):

- 1 Asphalt glaze coat – 15 lbs/sq

followed by:

- 2 FlintCoat®-E

followed by either:

- 3 FlintCoat-A 300 or FlintCoat-W

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

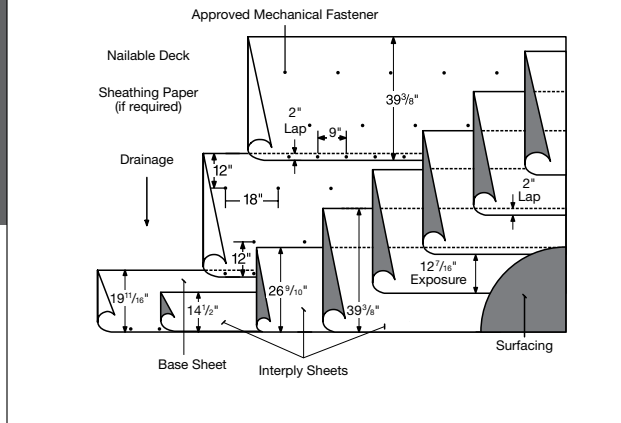
** For systems substituting ply sheet for the base ply, install all ply sheets in a shingled pattern. Exposure and starter dimensions should be adjusted accordingly to obtain required coverage and headlap, per NRCA recommendations.*

*** Coverboard not required*

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

BUR(S)-N-4-A



BUR or SBS modified base sheet mechanically attached through substrate, three hot asphalt applied BUR interply sheets and a coating

SUBSTRATE:

- Concrete (Sec. 3.6-3.9)
- Wood (Sec. 3.10-3.11)
- Poured Gypsum (Sec. 3.12)
- Wood Fiber (Sec. 3.13)
- Re-cover (Sec. 5.0)

MAXIMUM SLOPE:

Up to 6" : 12" (Sec. 15.3)

ROOF ASSEMBLY:

Approved base sheet, mechanically attached to approved substrate (Sec. 15.0).

Approved interply sheets set in hot asphalt (Sec. 7.0).

FINAL SURFACING:

Selected final surfacing (Sec. 14.3).

SUMMARY OF MATERIALS:

- Base sheet (1 ply)
- Interply sheets (3 ply)
- Final surfacing
- ASTM D 312 asphalt (three moppings)

APPROVED BASE SHEETS:

(one of the following)

- All Weather/Empire® Base Sheet
- Flintlastic Base 20
- Flintlastic Poly SMS
- Flintlastic Ultra Poly SMS
- Glasbase™ Base Sheet
- Yosemite® Venting Base Sheet

APPROVED INTERPLY SHEETS (3 PLIES):

(three of the following)

- Flintglas® Ply 4
- Flintglas Premium Ply 6

SURFACING (REQUIRED):

1 Asphalt glaze coat – 15 lbs/sq

followed by:

2 FlintCoat®-E

followed by either:

3 FlintCoat-A 300 or
FlintCoat-W

FLASHING ASSEMBLY:

- **Standard.** Over a base sheet or bonded to a primed substrate. One ply Flintlastic® modified cap sheet, per CT detail.
- **Premium.** Over a base sheet or bonded to a primed substrate. One smooth and one granulated modified membrane flashing, per CT detail.
- **Premium Alternate.** Over a base sheet or bonded to a primed substrate. One smooth modified membrane and CT SmartFlash®, per CT detail.

Asphalt: Type III or Type IV (Sec. 7.0).

Cants: In angles of roof deck and vertical surfaces, the roofing contractor shall furnish and install an approved cant strip with a minimum 3" face.

WARRANTY DURATIONS FOR THIS SPECIFICATION VARY BASED ON ROLL MATERIAL SELECTION; SEE WARRANTY MATRIX.

Applicable local building code may require more stringent installation requirements such as, but not limited to, increased fastener or adhesive densities to meet required wind uplift pressures. Consult local building code and uplift requirements prior to any application of CertainTeed roofing materials. CertainTeed is not responsible for failure to install roofing products per applicable local building codes.

Consult CertainTeed General Recommendations for noted section references.

CONSTRUCTION DETAILS

TABLE OF CONTENTS

INTRODUCTION

FOREWORD

CT-01	Edge Flashing
CT-01A	Edge Flashing - Alternate
CT-01B	Edge Flashing - Gutter
CT-02	Edge Flashing - BUR, Gravel Stop
CT-03	Curb Flashing
CT-04	Curb Equipment Flashing
CT-05	Wood Area Divider Flashing
CT-06	Base Flashing and Wall Covering on Wood Parapet Wall
CT-06A	Base Flashing and Wall Covering on Concrete/Masonry Parapet Wall
CT-07	Base Flashing on Concrete/Masonry Wall with Metal Counterflashing
CT-08	Base Flashing and Wall Covering on Steel or Stucco Wall with "Z" Bar
CT-09	Base Flashing on Parapet Wall, Inside Corner
CT-10	Base Flashing on Parapet Wall, Outside Corner
CT-11	Through-Wall Scupper Flashing
CT-12	Drain Flashing
CT-13	Pipe Flashing - Lead or Sheet Metal
CT-13A	Pipe Flashing - Lead or Sheet Metal - Surface Mounted (Retrofit)
CT-14	Pipe Flashing - Lead or Sheet Metal - BUR Only
CT-15	Penetration Pan (Pitch Pan) Flashing
CT-16	Multi-Piping through Roof Deck Flashing
CT-17	Mechanical Equipment Stand Flashing
CT-18	Pipe Roller Support Flashing
CT-19	Low Profile Flexible Expansion Joint Flashing
CT-19A	Raised Flexible Expansion Joint Flashing
CT-19B	Roof to Wall Expansion Joint Flashing
CT-20	Roof Vent Flashing
CT-21	Seismic Strap Flashing
CT-22	End Lap Detail
CT-23	Steep to Low-Slope Roof Transition Flashing
CT-24	Mansard Roof Transition Flashing
CT-25	Termination Bar Flashing

CONSTRUCTION DETAILS

TABLE OF CONTENTS (Continued)

CT-26	Hot Pipe Flashing
CT-27	Structural Member Thru Roof Deck Flashing
CT-28	Lightning Terminal Flashing
CT-29	Back Nailing - Insulated or Non-Nailable Substrates
CT-29A	Back Nailing - Nailable Substrates
CT-30	Vapor Retarder
CT-30A	Vapor Retarder - Alternate
CTL-01A	SmartFlash® - One ply Base Flashing with Cut-in Reglet
CTL-01B	SmartFlash - One ply Base Flashing with Counterflashing
CTL-03	SmartFlash - Parapet Wall with Metal Coping Cap
CTL-15	SmartFlash - Field-Fabricated Outside Corner Flashing
CTL-16	SmartFlash - Field-Fabricated Inside Corner Flashing
CTL-17	SmartFlash - Door Sill Flashing
CTL-18	SmartFlash - Tie-In to Modified Bitumen/BUR Membrane
CTL-18A	SmartFlash - Tie-In to EPDM Membrane
CTL-19	SmartFlash - Tie-In to Modified Bitumen/BUR Membrane with Cut-in Reglet
CTL-20	SmartFlash - Tie-In to Modified Bitumen/BUR Membrane
CTL-21	SmartFlash - Field-Fabricated Pipe Penetration Flashing
CTL-23	SmartFlash - Irregular Penetration Angle Flashing
CTL-24	SmartFlash - Wide Flange Flashing
CTL-25	SmartFlash - Irregular Penetration Uni-Strut Channel Flashing
CTL-27	SmartFlash - Curb/Pad Encapsulation Flashing
CTL-28	SmartFlash - One ply Curb Flashing
Appendix	
Appendix 1 - Insulation Fastening Guide	
Appendix 2 - Flashing Specifications	
Appendix 3 - Product and System Selection Guide	

Published Construction Details in this manual are intended for guidance only. NRCA, WSRCA, and MRCA construction details also meet CertainTeed warranty requirements.

INTRODUCTION

CONSTRUCTION DETAILS

Roofs are frequently interrupted by the intersection of adjoining roof sections adjacent walls, or penetrations such as skylights, mechanical equipment curbs and plumbing soil-pipe stacks. This creates opportunities for leakage. Special steps must be taken at these locations for weather protection.

The components used to control water entry at these locations are usually called flashings. The way in which the individual roofing, flashing and counterflashing components interface and are configured is called a detail.

Tight control of details is essential to long-term roof performance, whatever the type of roof construction. The low-slope membrane roofing and flashing details discussed in this manual are considered general details, not specifically designed for any particular low-slope roof assembly. The details show the general components that are commonly used and the sequence in which these components may be put together to provide weatherproof flashing for the condition shown. Contractors and designers should be aware that these general details may need to be altered to suit the specific flashing conditions on any particular roofing project. The project designer is responsible for the design of the actual, specific details for any given project.

The designer should consider CT's requirements and guidelines when beginning a project. The following should also be considered:

1. METAL FLASHING COMPONENTS

Because metals have different thermal expansion and contraction characteristics than most roof membrane materials, when possible, it is advisable to isolate metal flashings from the roof membrane and membrane flashing. Embedding (sandwiching) metal flashing flanges into the roof membrane or membrane flashing, at certain flashing details, can result in differential movement that can fatigue the membrane materials and may later cause tears, splits or cracks in the membrane flashing or roof membrane. For this reason, the solid securement of all flashing accessories to wood nailers is essential.

2. WOOD NAILERS AND BLOCKING

Wood nailers and blocking at roof edges and other points of termination are among the many details shown in this manual. Among other advantages, the nailers provide protection for the edge of the insulation and also provide a substrate on which the terminating roofing and membrane flashing materials can be anchored. The nailers must be securely attached to the roof deck and/or structural framing system. In the design of the specific details for a project, the designer should design and clearly indicate the manner in which wood nailers and/or blocking are to be incorporated into the detail conditions. The designer should also specify the means of attachment, as well as the fastening schedule for wood nailers and/or blocking.

3. UNDERWRITERS LABORATORIES OR FACTORY MUTUAL REQUIREMENTS

The designer should consult Factory Mutual Research Corporation (FMRC) or Underwriters Laboratories (UL) publications if the building owner's insurance carrier or project specifier requires compliance with FMRC or UL requirements for specific roof deck, insulation, membrane and attachment criteria.

4. ROOFTOP EQUIPMENT AND RELATED FLASHING

Although not recommended by CertainTeed, the roof is often used as the location for ventilating, heating and air-conditioning equipment. The building owner may encounter weatherproofing-related problems with mechanical equipment because of the design of that equipment and the lack of clearly defined responsibility for its installation and weatherproofing by all involved contractors, materials suppliers and manufacturers.

Heating, ventilating and air-conditioning housings and equipment can be attributed to one or more of the following weatherproofing problems and/or deficiencies:

- Poor design of the curb, for the HVAC equipment, intended to accept the membrane flashing.
- Improper design of the equipment's exterior shell or housing that is exposed to the weather, letting water enter the building directly through the unit.

INTRODUCTION

CONSTRUCTION DETAILS

- Not providing adequate means to attach membrane base flashings or lack of adequate counterflashing to overlap and protect the membrane base flashing.
- Improper design of the structural framing or the roof deck intended to support the weight of the ventilating, heating and air-conditioning unit, which usually results in excessive roof deflection and resulting ponding water.
- Poor flashing of the penetration(s), such as the conduits, pipes and drain lines that extend through the roof to operate the HVAC equipment.
- The absence of service walkways around mechanical equipment.

5. GENERAL APPLICATION GUIDELINES

The base flashing is the bituminous flashing that provides the transition from the completed field membrane to a surface that is in a different plane than the field of the roof, such as a parapet wall or curb. The base flashings should always extend a minimum of 8" above the roof surface and 4" out onto the field membrane. The base flashing should not extend more than 24" above the roof surface. Base flashings should be secured at the top edge with the appropriate mechanical fasteners spaced 9" o.c. maximum to prevent sliding or sagging. Prior to the installation of the base flashing, the completed field membrane should be terminated 2" above the top of the cant at vertical transitions. All base flashings require additional treatment (counterflashing) at their vertical termination to ensure proper performance. Some of these treatments include metal counterflashing, metal cap, stone coping and additional reinforced bituminous treatment.

Allow for differential movement in the flashing system, particularly when the roof deck is not supported by the adjoining wall.

Cant strips should be used at right angle intersections to avoid stress to the base flashing and provide a solid backing. The cant strip should have a face that measures a minimum of 3". All masonry and/or concrete surfaces to receive base flashing should be primed with CertainTeed FlintPrime® Asphalt Primer and allowed to dry thoroughly prior to the application of the flashing.

Flintlastic® SBS base flashings can generally be applied using either hot asphalt or CertainTeed FlintBond® Modified Bitumen Trowel Grade Adhesive. Do not use conventional cut-back asphalt flashing cement to apply Flintlastic SBS base flashings. When hot asphalt is used to attach the base flashings, only ASTM D312 Type III and Type IV asphalts are acceptable. The asphalt should have a minimum temperature at the point of application of 400°F or be at the EVT, whichever is higher. In cold weather (below 40°F), special precautions must be taken to ensure that the asphalt reaches the flashing area at the proper temperature.

Flintlastic APP base flashings are designed for torch application. Smooth Flintlastic APP base flashings require coating with FlintCoat® or an acceptable roof coating.

6. FLINTLASTIC SA SELF-ADHERING SBS MODIFIED BITUMEN ROLL ROOFING

Flintlastic SA roofing membrane is a premium, self-adhering SBS modified bitumen roll roofing material suitable for use in accordance with CertainTeed specifications for most low-slope roof system applications. It is a self-adhered equivalent to CertainTeed's Flintlastic hot asphalt applied and cold adhesive applied SBS systems. The construction details in this section, as designated for Flintlastic SBS systems, are applicable for Flintlastic SA installations when the following general guidelines are followed:

- Use FlintPrime SA Primer where priming is required.
- Set all sheet metal flashings or fixtures in a bed of FlintBond Modified Bitumen Trowel Grade Adhesive and cant, caulk or seal the completed detail as diagramed. Seal all edge flashings with a bead of FlintBond Caulk Grade.
- All Flintlastic SA modified bitumen roll roofing materials are set in a bed of FlintBond Modified Bitumen Trowel Grade Adhesive whenever installed over, or coming in contact with, granuled surfaces such as at base flashings and wall coverings or at end laps, etc.
- Do not mix Flintlastic SA materials with other types of membrane materials. Flintlastic SA membranes are specifically designed to be applied together as a system.
- Smooth and secure each ply of Flintlastic SA materials with a weighted roller as each is installed.

INTRODUCTION

CONSTRUCTION DETAILS

7. SMARTFLASH® FLUID APPLIED FLASHING MEMBRANES

CertainTeed SmartFlash flashing membranes are two component, UV-stable, fluid-applied polyester reinforced membranes for use with non-standard details when design or field condition does not allow sufficient clearances for traditional Flintlastic® bituminous flashings. SmartFlash is designed to adhere over APP, SBS and traditional BUR membranes to provide extreme bond strength and seamless performance properties to a variety of common deck, wall and penetration surfaces. Its application is ideal for flashing difficult architectural configurations in areas of limited access and is resilient and unaffected by ponding water and ice conditions. SmartFlash membranes are ideally suited for new construction, retrofit and roof maintenance purposes. The applicator shall adhere to the following general guidelines:

- Application of SmartFlash is recommended while air temperatures are between 40 and 85 degrees Fahrenheit providing the substrate is 5 degrees above the dew point.

Application is a four-step process:

- Preparation and cleaning of substrate.
- Application of SmartFlash primer suitable for the substrate.
- Application of the SmartFlash membrane.
- Application of the surfacing material (if an optional surfacing is desired).

Substrate preparation:

- All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, curing agents, lacquers, or any other condition that would be detrimental to adhesion of the SmartFlash primer and substrate.
- Masonry/Structural Concrete – Areas of soft or scaling surfaces, recessed or faulty mortar joints or walls with broken, damaged or leaking coping shall be repaired prior to priming.
- Steel/Metal – Clean and prepare metal surfaces to near white metal with power tools. Notch steel surfaces to provide a rust stop. In addition to cleaning, all metal surfaces shall be abraded (ground) to provide a rough open surface. (A wire brush finish is not acceptable). Wipe prepared metal surface with MEK or other acceptable solvent cleaner prior to priming.

- Wood/Plywood – Shall be APA rated for exterior use. Strip plywood joints with 4" wide strips of SmartFlash membrane. Cover knot holes or cracks with strips of SmartFlash membrane.
- Existing asphaltic bituminous membranes – Smooth surface membranes with applied roof coatings shall have all loose coating removed and an adhesion test performed to confirm acceptable adhesion. Granule surfaced membranes shall have all loose granules removed from the surface by power brooming and vacuuming. Gravel surfaced membranes shall have all gravel spudded and removed and the roof surface thoroughly cleaned with all ridges and high points removed.

Application Recommendations:

- Pre-cut SmartFlash Fleece reinforcement for each penetration, bag, and place at each flashing/penetration location prior to mixing SmartFlash resin components.
- Mix only that amount of primer components A and B that can be applied in 15 minutes. Do not break down work packs into smaller quantities; mix the entire work pack.
- Exposure of SmartFlash primer in excess of eight (8) days or premature exposure to moisture may require removal and application of new SmartFlash primer.
- Mix only that amount of SmartFlash resin components A and B that can be used in 30 minutes. Do not break down work packs into smaller quantities; mix the entire work pack.
- Refer to the CertainTeed SmartFlash Application Manual for complete application steps and details.

The SmartFlash construction details featured in this section are provided as guidelines and may be modified to suit the specific flashing conditions on any given project. The design of the actual detail remains the responsibility of the designer.

FOREWORD

CONSTRUCTION DETAILS

This Construction Details Section has been assembled to provide technical information regarding the installation and design of quality low-slope membrane roofing and flashing details.

Contractors and designers should be aware that these details may need to be modified to suit the specific flashing conditions on any given roofing project. The design of the actual details for any project is the responsibility of the project designer.

Some design details, criteria and application techniques may vary based on climatic conditions, and each geographical area may utilize “area practices” that are sound and time-proven.

CertainTeed recommends that any roof assembly be designed only after a number of criteria have been carefully considered, including:

- Building and roof life expectancy
- Type of roof deck
- Code requirements
- Climate
- Exterior and interior temperature and humidity conditions
- Slope and drainage
- Thermal requirements
- Fire, wind and impact resistance

Criteria like these play an important role in the ultimate success or failure of every roof assembly. They should be considered by the designer in order to determine the applicable specification, the correct components of the roof assembly and the construction details to be used.

Anchor Sheet

Attach with appropriate fasteners spaced a minimum 9" o.c. in the laps with two additional rows spaced 18" o.c. in the field, staggered OR as required by code.

Fasten starting fasteners 6" in from the edge of the roof to avoid edge metal fastener overlap.

Flashing Collar

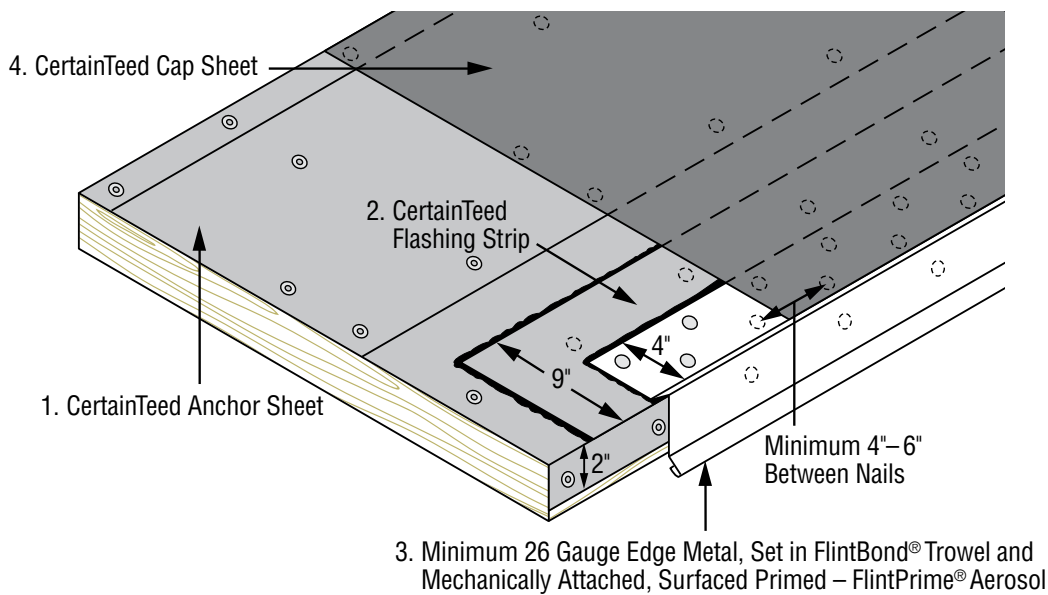
Fully adhere (self-adhered, torch, cold process or hot asphalt). **If self-adhered** apply FlintBond® Caulk to edge; **If torch-welded** ensure 1/4" bleed out at edge; **If using cold process** set in FlintBond Trowel with 1/4" bleed out at edge; **if using hot asphalt** ensure 1/4" bleed out at edge.

Edge Metal

Mechanically attach a minimum two staggered rows, 6" o.c. or as required by building code; endlaps should receive two nails. Edge Metal shall have a minimum 3/4" rise for gravel surfaced membranes and a 3/8" rise for smooth or mineral surfaced membranes.

Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt). **If self-adhered**, in cold weather¹ where Flintlastic® SA Cap (FR) Sheet overlaps Edge Metal surface, hot air weld² with bead of FlintBond Caulk at edge.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt) Proper attachment is defined by specified system, product selection and deck type.

Edge Metal

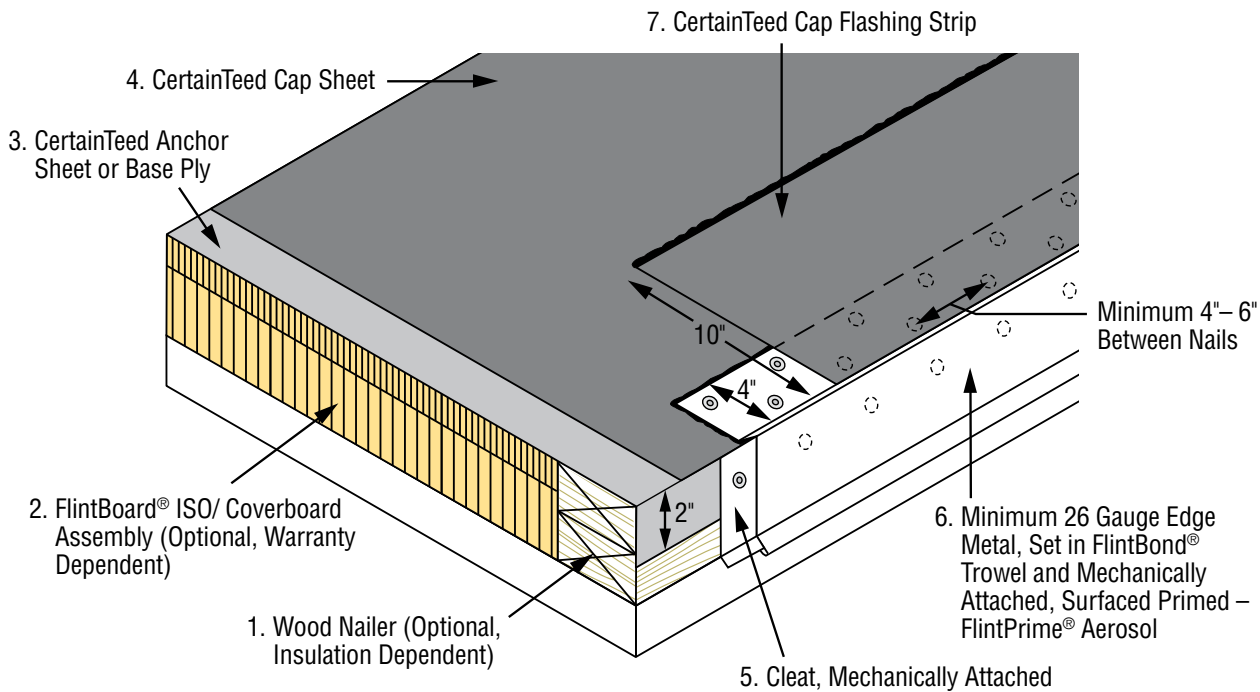
Mechanically attach a minimum two staggered rows, 6" o.c. or as required by building code; endlaps should receive two nails. Edge Metal shall have a minimum 3/4" rise for gravel surfaced membranes and a 3/8" rise for smooth or mineral surfaced membranes.

Cap Sheet

Fully adhere in accordance with the approved, published product application method.

Cap Sheet Flashing Strip

Treat the granulated surface of Cap Sheet where granule overlap occurs: **If self-adhered or cold process** apply FlintBond® Trowel to entire lapped surface or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** ensure 1/4" bleed out.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply, Field

Mechanically attach or Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type. Ensure base sheet is extended below wood nailer blocking.

Flashing Collar

Fully adhere (self-adhered, torch, cold process or hot asphalt). **If self-adhered** apply FlintBond® Caulk to edge; **If torch-welded** ensure 1/4" bleed out at edge; **If using cold process** set in FlintBond Trowel with 1/4" bleed out at edge; **if using hot asphalt** ensure 1/4" bleed out at edge.

Gutter System

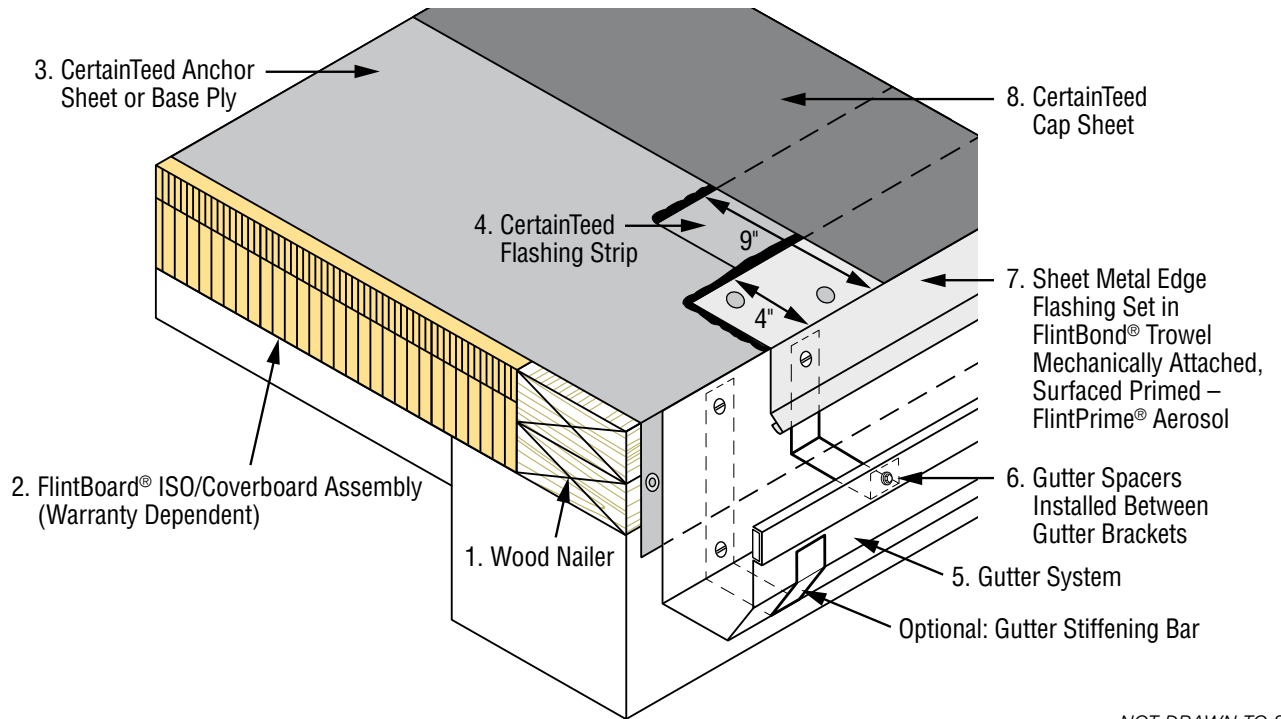
Refer to the Architectural Metal Flashing section of the NRCA Roofing Manual for securement options.

Edge Metal

Set in FlintBond Trowel. Mechanically attach a minimum two staggered rows, 6" o.c. or as required by building code; endlaps should receive two nails. Prime surface with FlintPrime® Aerosol.

Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. **If self-adhered**, in cold weather¹ hot air weld² with bead of FlintBond Caulk at edge.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Cap with rolling pressure onto the Metal. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke.

Anchor Sheet or Base Ply

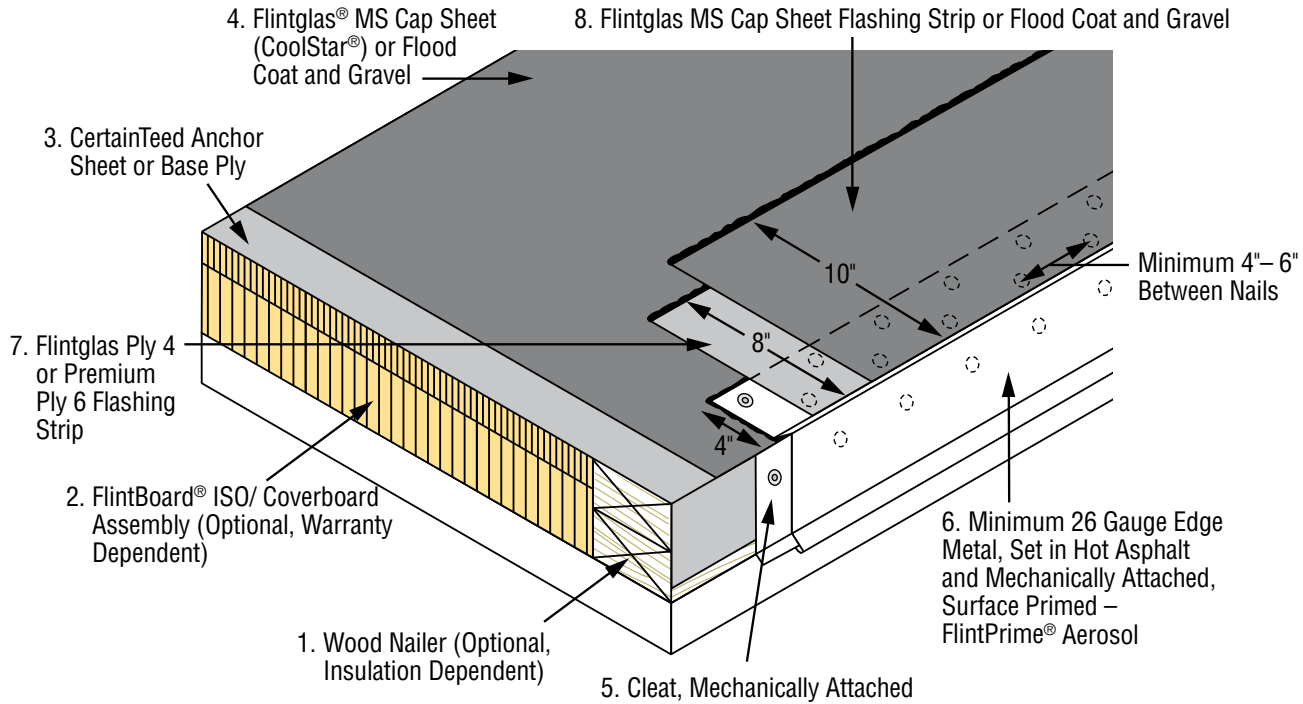
Mechanically attach or fully adhere (self-adhered, torch, or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Flashing Strips

Apply with hot asphalt and ensure 1/4" bleed out.

Edge Metal

Mechanically attach a minimum two staggered rows, 6" o.c. or as required by building code; endlaps should receive two nails. Edge Metal shall have a minimum 3/4" rise for gravel surfaced membranes and a 3/8" rise for smooth or mineral surfaced membranes.



NOT DRAWN TO SCALE

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection.

Cap Sheet Flashing Strip

Treat the granulated surface of Cap Sheet, Field, where the Flashing Strip overlap occurs: **If self-adhered or using cold process** apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with

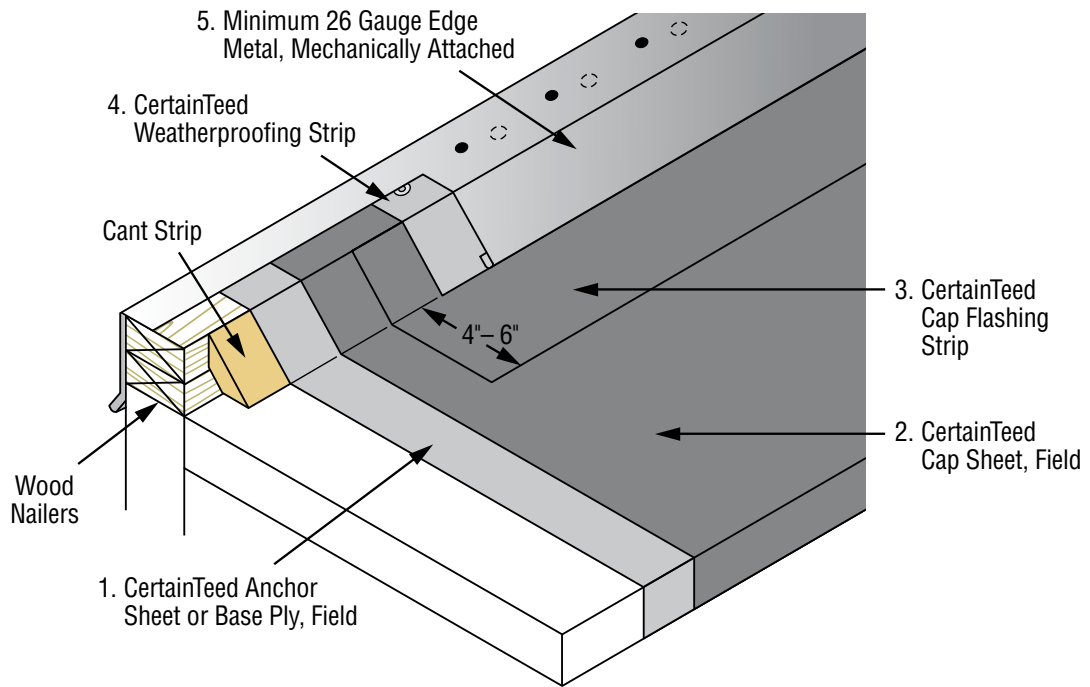
bead of FlintBond Caulk at edge; **If torch-welded (cap only²)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Weatherproofing Strip

Self-adhere WinterGuard® Metal, WinterGuard® HT or Flintlastic® PlyBase/MidPly and mechanically attach top edge according to building code.

Edge Metal

Mechanically attach as required by building code; space fasteners so as not to overlap weatherproofing fasteners.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

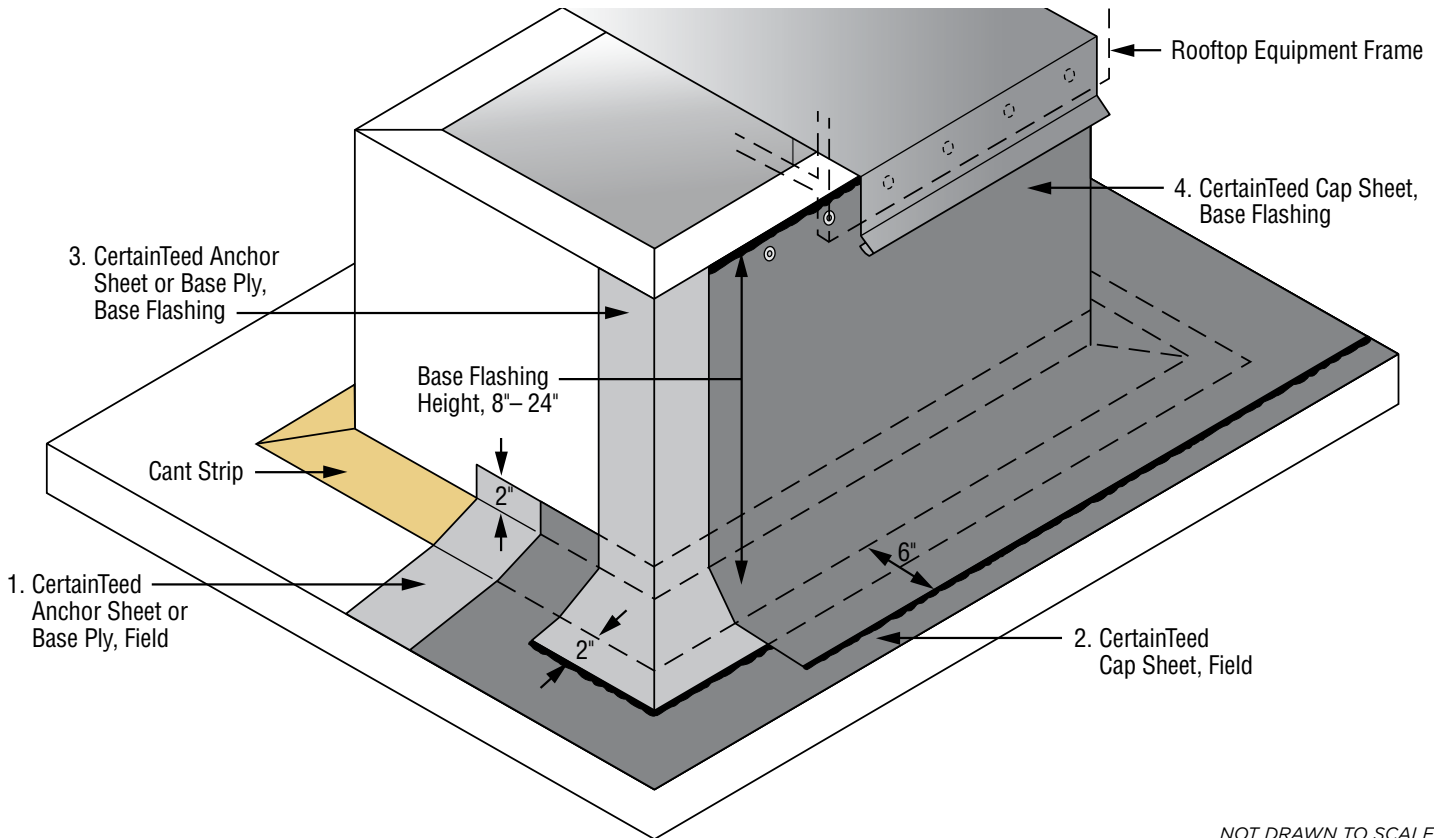
Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

VERTICAL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered,

torch-weld, cold process or hot asphalt; Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1/4" bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



NOT DRAWN TO SCALE

Premium Application

Add a CertainTeed Modified Bitumen Base Ply behind the Cap Sheet, Counterflashing. Extend it a minimum of 4" out onto the Cap Sheet, Field. Extend the Cap Sheet, Counterflashing out onto the Cap Sheet, Field a minimum of 4" beyond the underlying additional ply.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold-process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs:

If self-adhered or using cold process apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather²) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** (cap only³) heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

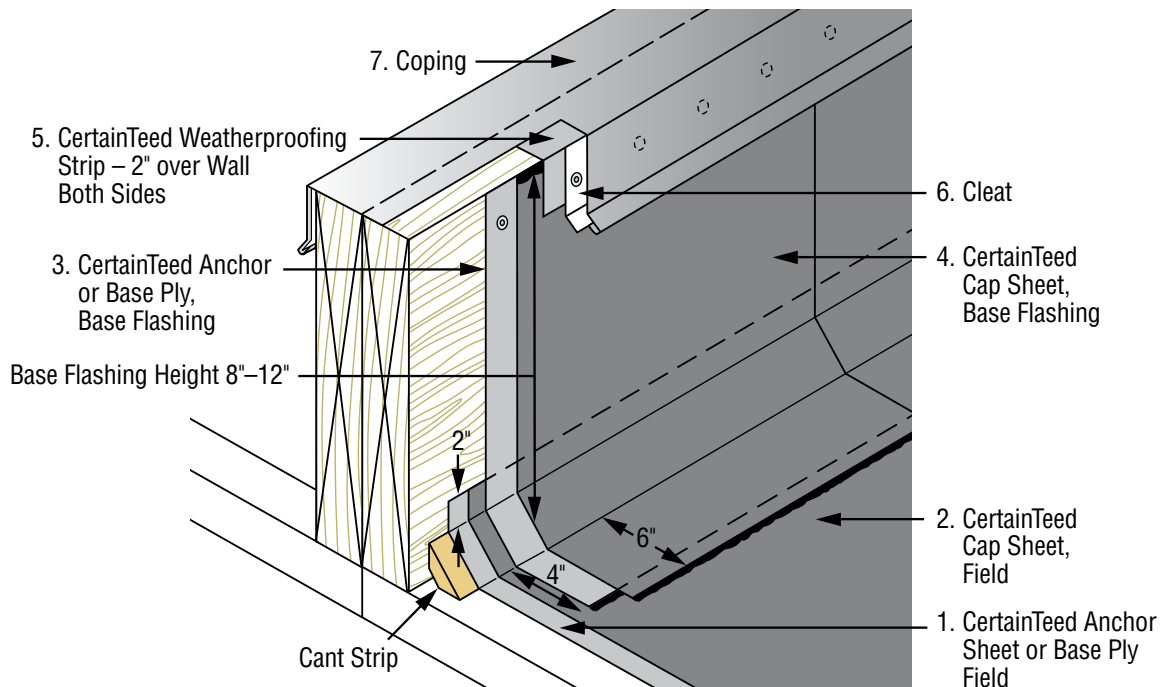
Weatherproofing Strip

Self-adhere WinterGuard® Metal, WinterGuard® HT or Flintlastic® PlyBase/MidPly. Turn down over wall 2" both sides (to be gang fastened when cleat is attached).

Metal Cleat

Mechanically attach 9" o.c. through tin discs.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply, turn down 2" over outside edge of wall (to be gang fastened when cleat is attached); Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt); Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only³)** heat sink/scrape the

granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Cap Sheet Counterflashing

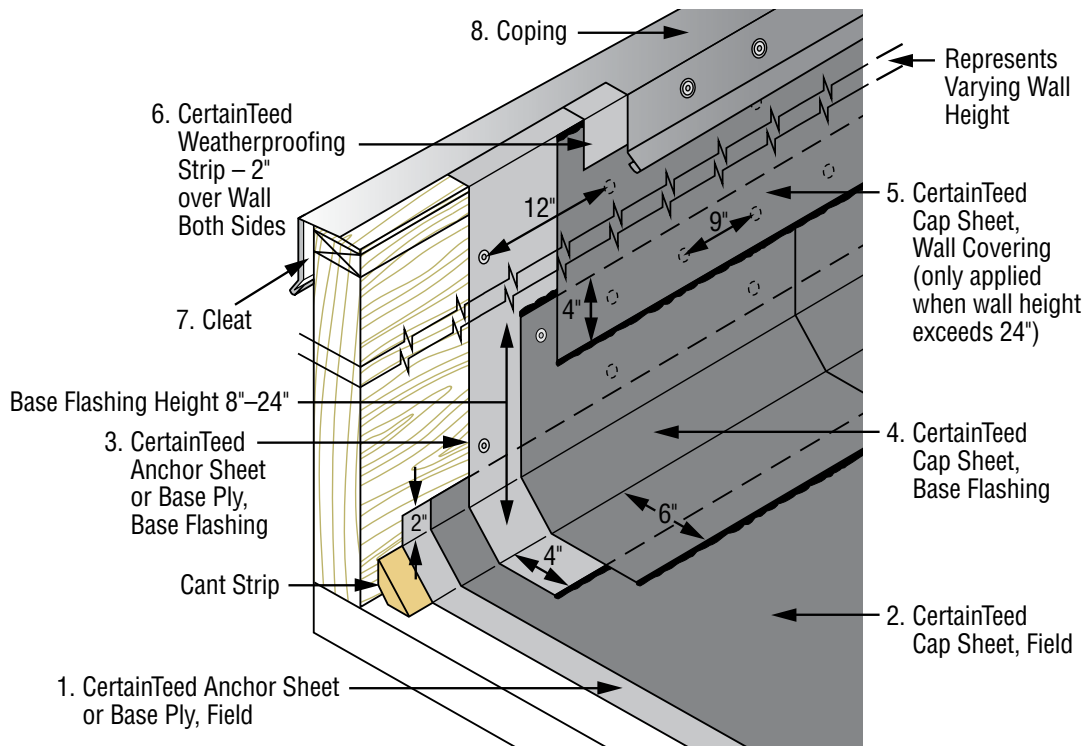
NOTE: This layer is only applied when wall height exceeds 24". **If self-adhered** apply FlintBond Caulk to top edge; **If torch-welded** ensure 1/4" bleed out at top edge; **If using cold process** set in FlintBond Trowel with 1/4" bleed out at top edge; **if using hot asphalt** apply hot asphalt or set in FlintBond Trowel with 1/4" bleed out at top edge. **BASE FLASHING OVERLAP:** Follow application method as noted for Base Flashing, FIELD OVERLAP.

Weatherproofing Strip

Self-adhere WinterGuard® Metal, WinterGuard® HT or Flintlastic® PlyBase/MidPly. Turn down over wall 2" both sides, or 1" beyond the wood nailer (to be gang fastened when cleat is attached).

NOTE: For walls 24" or less in height, vertical termination of Base Flashing will match/replace vertical termination of Wall Covering as shown below.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

Base Ply and Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt) base and cap layer. Proper attachment is defined by specified system, product selection and deck type. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply, turn down 2" over outside edge of wall (to be gang fastened when cleat is attached); Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt); Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk.

FIELD OVERLAP: Treat the granulated surface of Cap Sheet, Field, where Base Flashing overlap occurs: **If self-adhered** apply FlintBond Trowel to entire lapped surface or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **If using cold process** apply

FlintBond Trowel with 1/4" bleed out; **if using hot asphalt** ensure 1/4" bleed out.

Cap Sheet Counterflashing

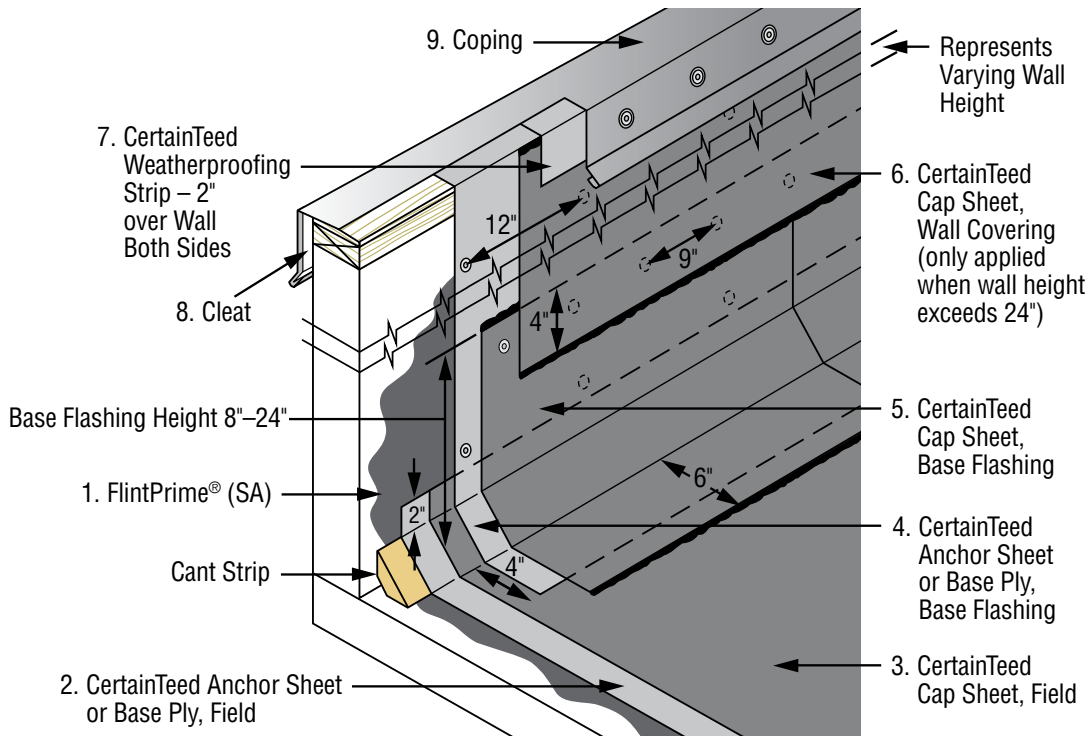
NOTE: This layer is only applied when wall height exceeds 24". **If self-adhered** apply FlintBond Caulk to top edge; **If torch-welded** ensure 1/4" bleed out at top edge; **If using cold process** set in FlintBond Trowel with 1/4" bleed out at top edge; **if using hot asphalt** apply hot asphalt or set in FlintBond Trowel with 1/4" bleed out at top edge.

BASE FLASHING OVERLAP: Follow application method as noted for Cap Sheet Base Flashing, FIELD OVERLAP.

Weatherproofing Strip

Self-adhere WinterGuard® Metal, WinterGuard® HT or Flintlastic® PlyBase/MidPly. Turn down over wall 2" both sides, or 1" beyond the wood nailer (to be gang fastened when cleat is attached).

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

Base Ply and Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt) base and cap layer. Proper attachment is defined by specified system, product selection and deck type. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach top edge to wall, 9" o.c. through tin discs with concrete fasteners; **if self-adhered** apply FlintBond® Caulk to top edge; **if torch-welded** ensure 1/4" bleed out at top edge; **if using cold process** set in FlintBond Trowel with 1/4" bleed out at top edge; **if using hot asphalt** ensure 1/4" bleed out at top edge.

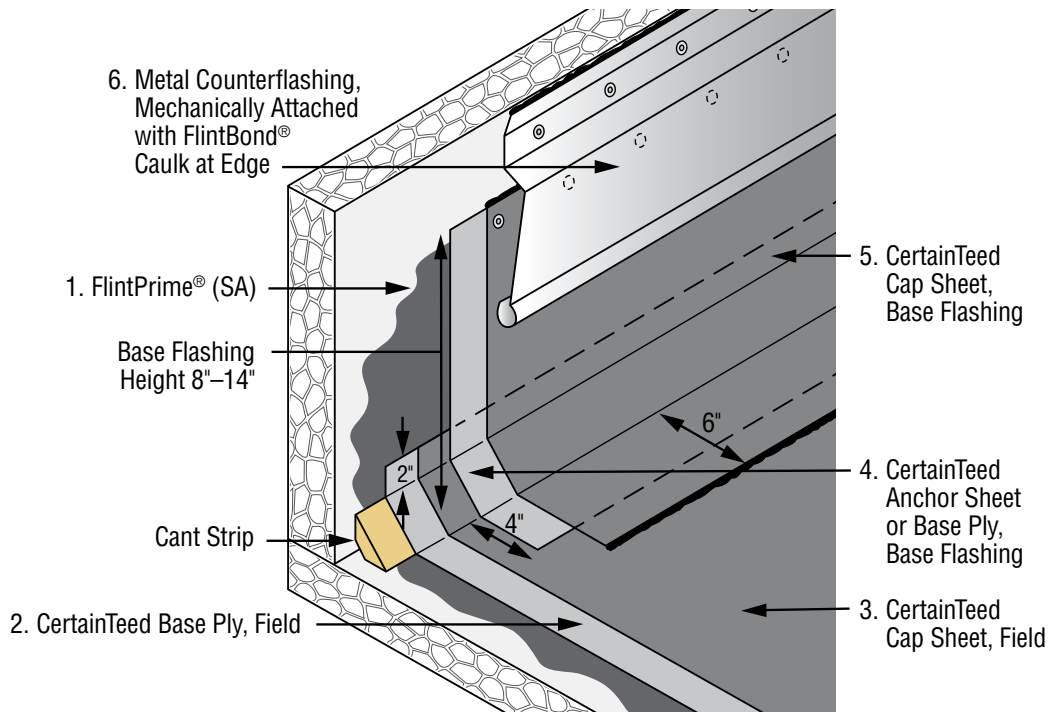
FIELD OVERLAP: Treat the granulated surface of Cap Sheet, Field, where Base Flashing overlap occurs:

If self-adhered apply FlintBond Trowel to entire lapped surface or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **if torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using cold process** apply FlintBond Trowel with 1/4" bleed out; **if using hot asphalt** ensure 1/4" bleed out.

Metal Counterflashing

Mechanically attach a minimum 6" o.c. or as required by building code.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

Plywood Backing

Install plywood backing with appropriate thickness to create wall surface that vertically aligns with plaster or hardboard (stucco) siding.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only³)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

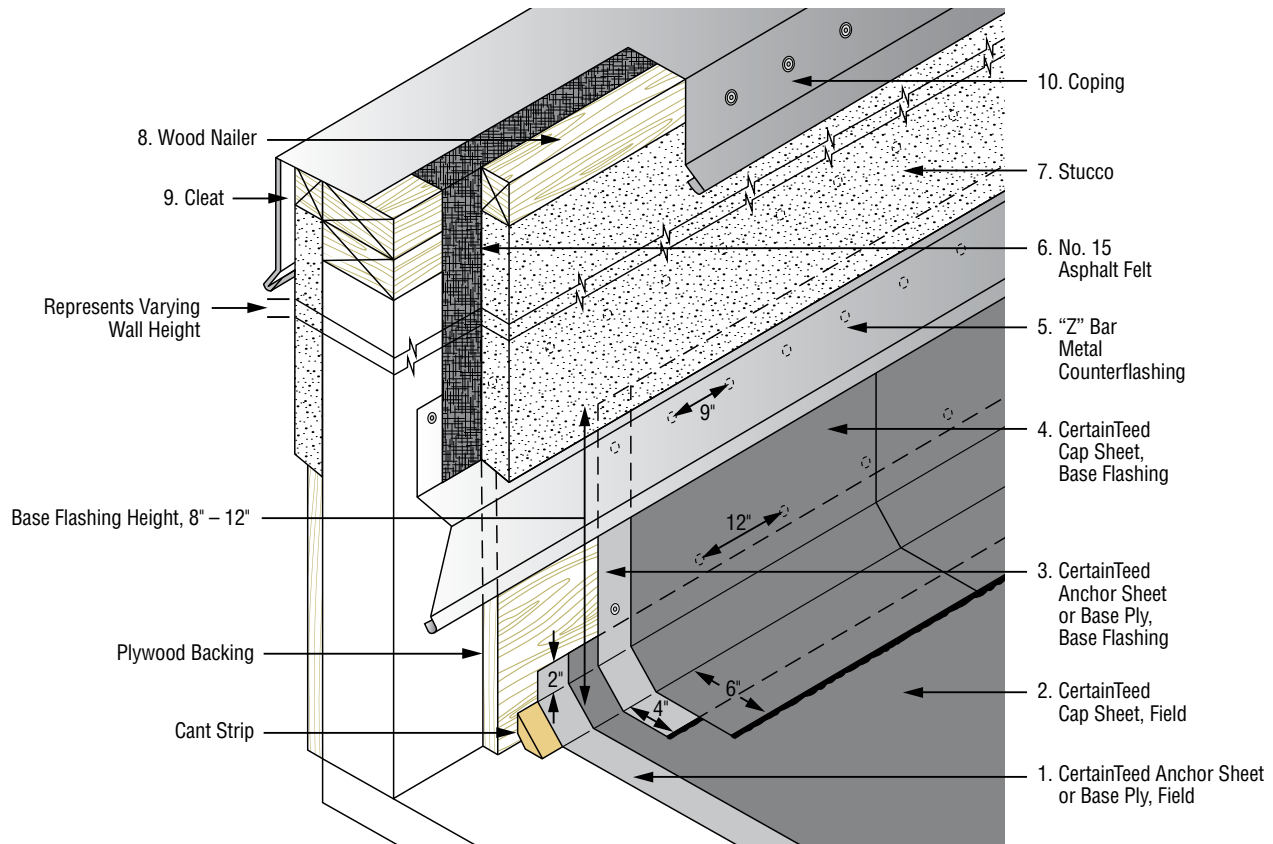
"Z" Bar Counterflashing

Fit top flange into channel behind plaster or hardboard (stucco) siding.

#15 Asphalt Felt

Loose lay, turn over outside edge 2". Gang fasten with Cleat both sides.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

NOTE: This detail is intended to illustrate inside corner cuts and application. See appropriate parapet wall detail for Base Flashing application instructions.

Base & Cap Field Corner Cuts

In order to allow a flat fit into the corner, make a cut from the bottom point of the cant strip out through the top edge of the roll; the cut will be parallel to the length of the roll. Repeat with a second cut from the top point of the cant strip.

Base Sheet Base Flashing Corner Cuts

Base Sheet Base Flashing folds over the outer edge of the wall, top inner corner of the wall, and bottom inner corner of the wall onto the field. Several cuts are necessary to allow for a flat fit. Cut the membrane to the required length: The total length of the sheet equals 2 (2" turn over) + width of top of wall + wall height + length of cant strip surface + 4 (4" into the field).

- Lay sheet with selvage edge perpendicular to the parapet wall so 2" of the roll extends beyond the top outer edges. First, make a 45° cut from the outer corner of the wall through the outer corner of the roll.

This will allow you to turn the roll down over the top edges of the wall.

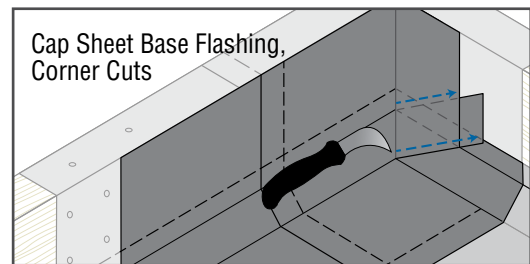
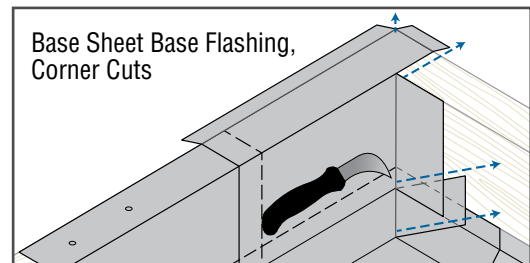
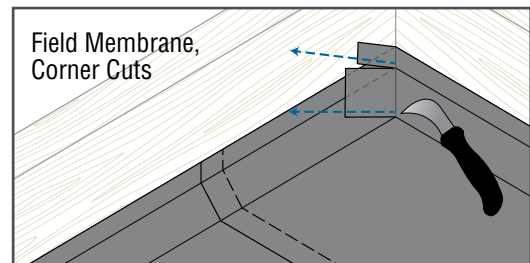
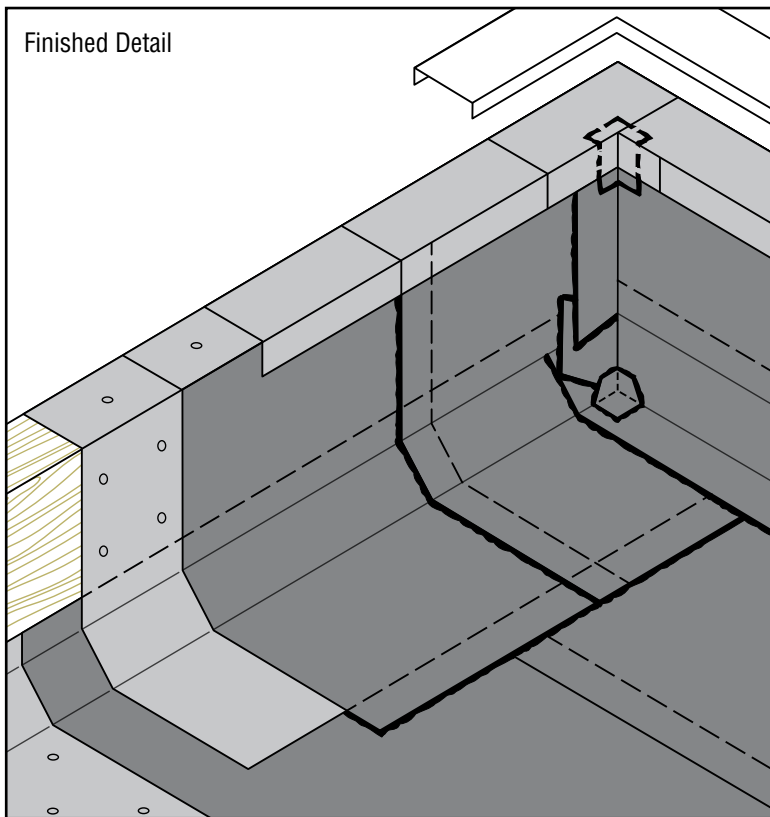
- Second, make a cut from the inner top outer corner of the wall through the side edge of the roll; cut perpendicular to the roll's length. The roll will drop down and lay flat against the wall surface.
- Third, make a cut from the top point of the cant strip on a 45° angle upwards through the side edge of the roll.
- Fourth, cut from the bottom point of the cant strip. These two cuts will allow the roll to conform to the wall and cant and extend into the field.

Cap Sheet Base Flashing Corner Cuts

Repeat the third and fourth cuts from Base Sheet Base Flashing to allow the roll to conform to the wall and cant and extend into the field.

Cap Sheet Corner Pieces

Cut cap sheet into rounds and slice horizontal edges to create a "bowtie". Apply to cover cut origin points of Cap Sheet Counterflashings.



NOT DRAWN TO SCALE

NOTE: This detail is intended to illustrate outside corner cuts and application. See appropriate parapet wall detail for Base Flashing application instructions.

Base & Cap Field Corner Cuts

In order to allow a flat fit into the corner, make a cut from the bottom point of the cant strip out through the top edge of the roll; the cut will be parallel to the length of the roll. Repeat with a second cut from the top point of the cant strip.

Base Sheet Base Flashing Corner Cuts

Base Sheet Base Flashing folds over the outer edge of the wall, top inner corner of the wall, and bottom inner corner of the wall onto the field. Several cuts are necessary to allow for a flat fit. Cut the membrane to the required length: The total length of the sheet equals 2 (2" turn over) + width of top of wall + wall height + length of cant strip surface + 4 (4" into the field).

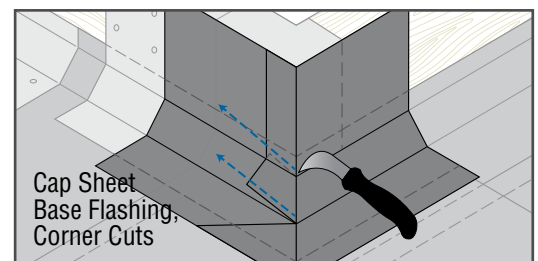
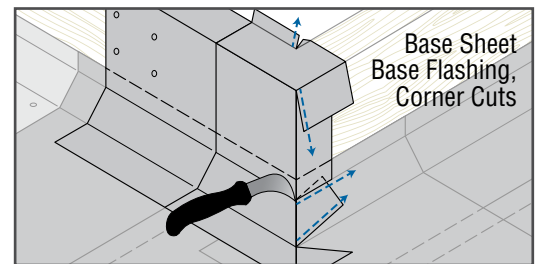
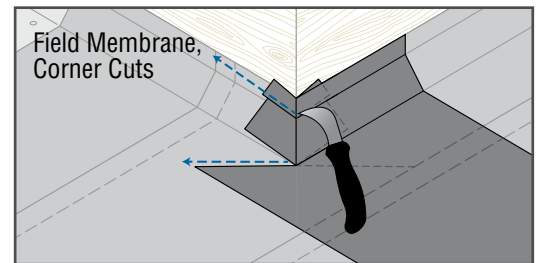
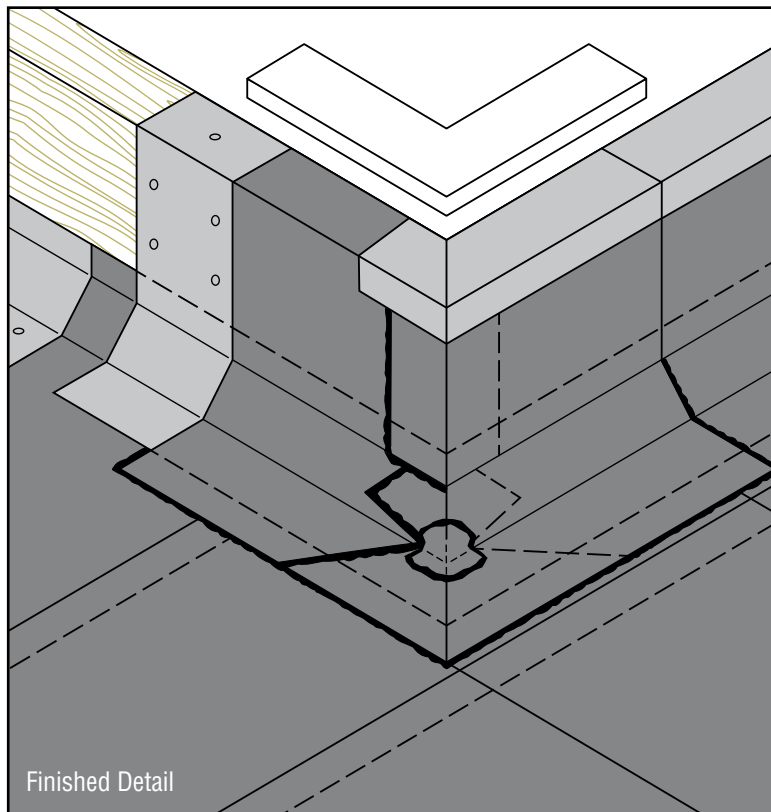
- Lay sheet with selvage edge perpendicular to the parapet wall so 2" of the roll extends beyond the top

outer edge of the wall. First, make a 45° cut from the top outer corner of the wall through the outer corner of the roll. This will allow you to turn the roll down over the top edges of the wall.

- Second, make a cut from the inner top corner of the wall through the side edge of the roll; cut perpendicular to the roll's length. The roll will drop down and lay flat against the wall surface.
- Third, make a cut from the top point of the cant strip on a 45° angle upwards through the side edge of the roll.
- Fourth, cut from the bottom point of the cant strip. These two cuts will allow the roll to conform to the wall and cant and extend into the field.

Cap Sheet Base Flashing Corner Cuts

Repeat the third and fourth cuts from Base Sheet Base Flashing to allow the roll to conform to the wall and cant and extend into the field.



NOT DRAWN TO SCALE

Anchor Sheet or Base Ply Field & Counterflashing

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by specified system, product selection and deck type. Extend base layer directly behind scupper without seams a minimum of 6" beyond scupper flanges in all directions.

Scupper Flange

For nailable surfaces, flange must also be nailed 3" o.c. along bottom edge, 3/4" from perimeter.

Cap Sheet, Field

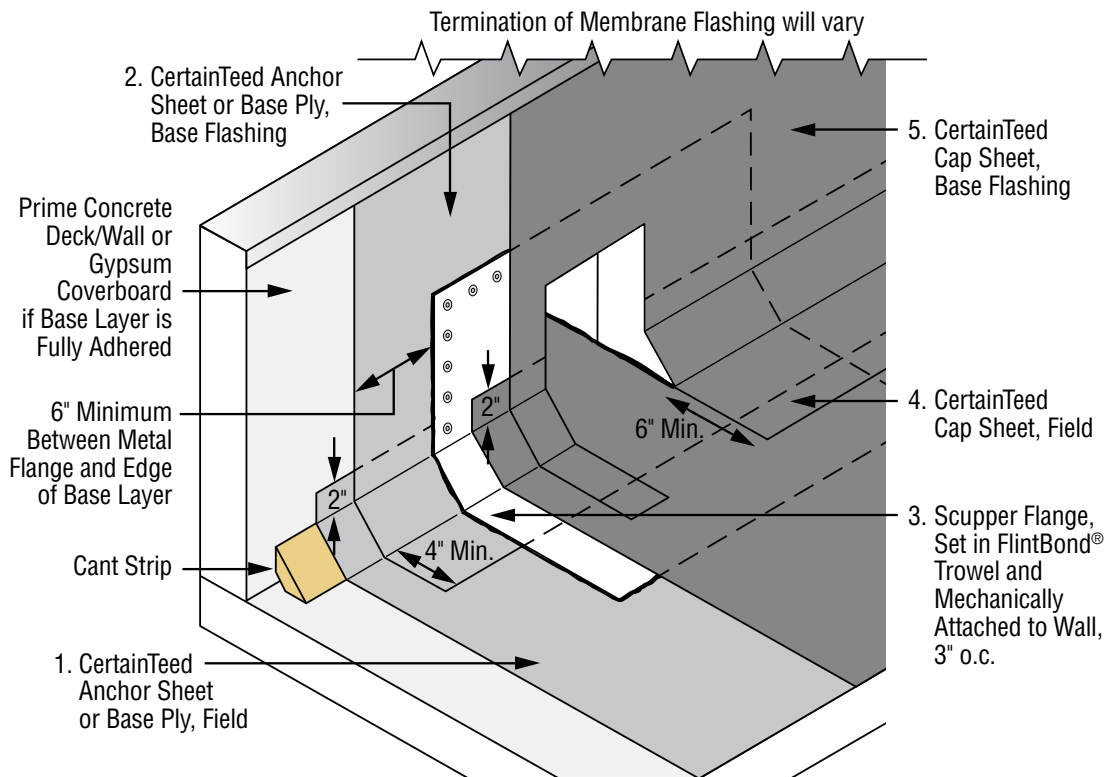
Fully adhere (self-adhered, torch, cold adhesive or hot asphalt). Proper attachment is defined by product selection.

Base Flashing

WALL ATTACHMENT: Mechanically attach or fully adhere (self-adhered, torch-weld, cold adhesive or hot asphalt;

torch-weld is not an approved method for base ply wall attachment), if Fully adhered, gang fasten top edge 9" o.c. with tin discs; FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only³)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

Premium Application

Add a CertainTeed Modified Bitumen Base Ply behind the Cap Sheet, Counterflashing. Extend it a minimum of 4" out onto the Cap Sheet, Field. Extend the Cap Sheet, Counterflashing out onto the Cap Sheet, Field a minimum of 4" beyond the underlying additional ply.

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by specified system, product selection and deck type.

If applying by cold process or hot asphalt extend compound onto drain flange; **If the base layer is mechanically attached in the field**, base layer must be fully adhered beginning 9" from the drain flange edge.

Lead or Copper Flashing

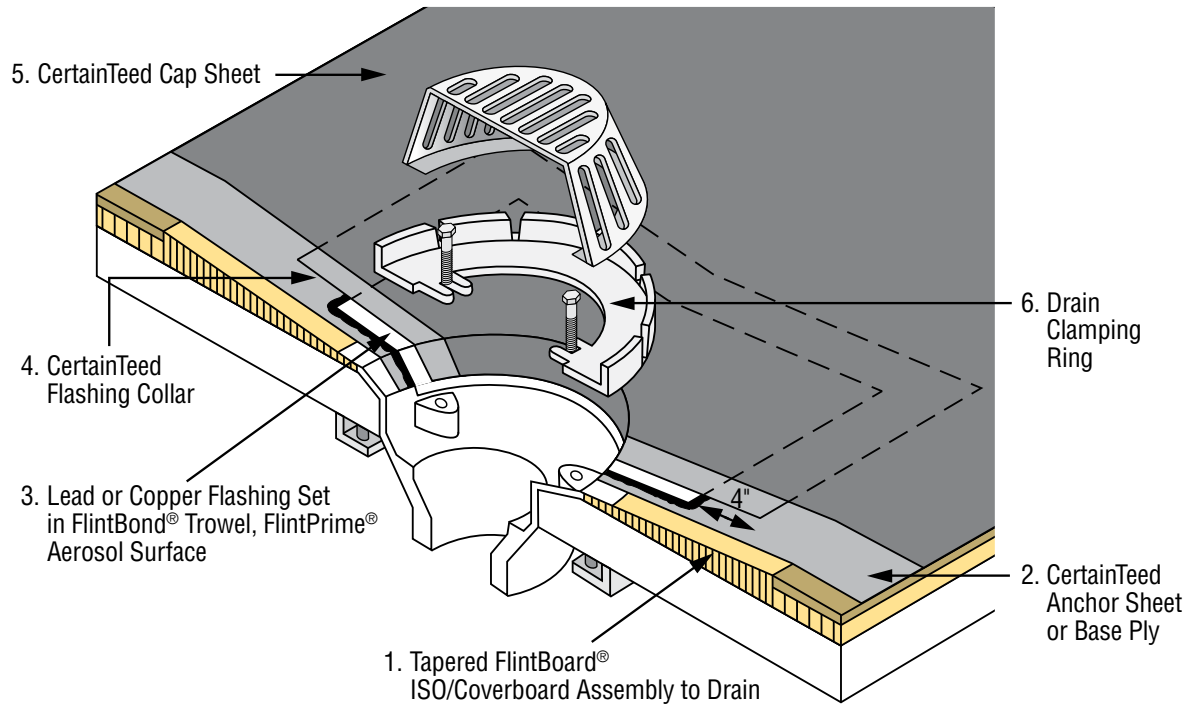
Flashing should be a minimum 30" x 30", 2.5 lb. lead or 16 oz. soft copper, turned down into the drain bow.

Flashing Collar

Fully adhere (self-adhered, torch, cold process or hot asphalt) a minimum 38" x 38" flashing collar. Proper attachment is defined by product selection.

Cap Sheet

Fully adhere in accordance with the approved, published product application method.



NOT DRAWN TO SCALE

Three-Ply Application

Replace the Flashing Collar with a CertainTeed Modified Bitumen Interply, extending the full dimension of the field.

Anchor Sheet or Base Ply

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

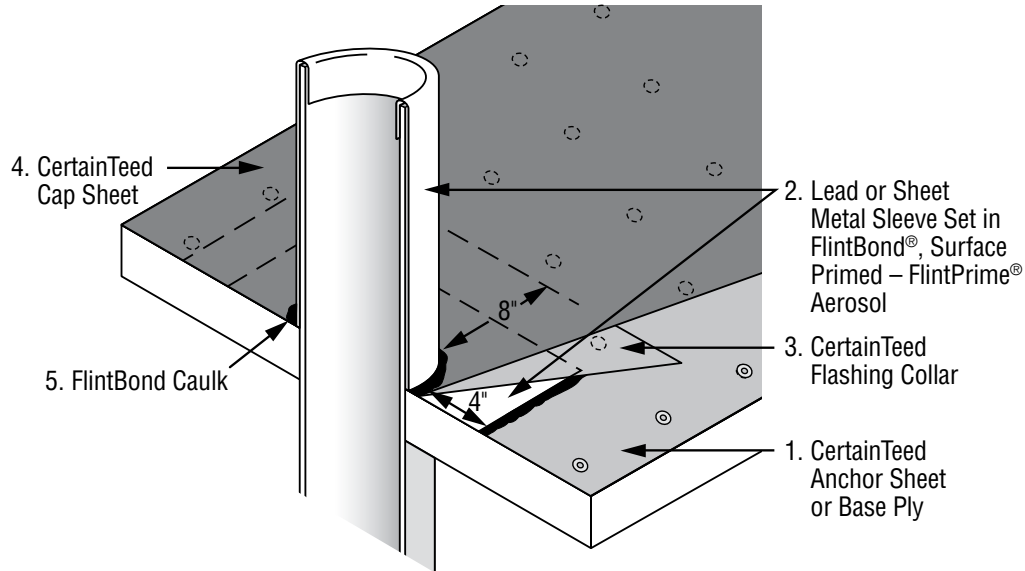
Metal Flashing

Shall have a 4" wide, primed continuous flange.

Flashing Collar & Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt), extending a minimum 4" beyond the metal flange. Proper attachment is defined by product selection.

If self-adhered in cold weather¹ hot air weld² collar to metal surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal surface while applying rolling pressure from a silicone roller to the overlapping Collar. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Collar with rolling pressure onto the Metal. Roll the overlapping Collar in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

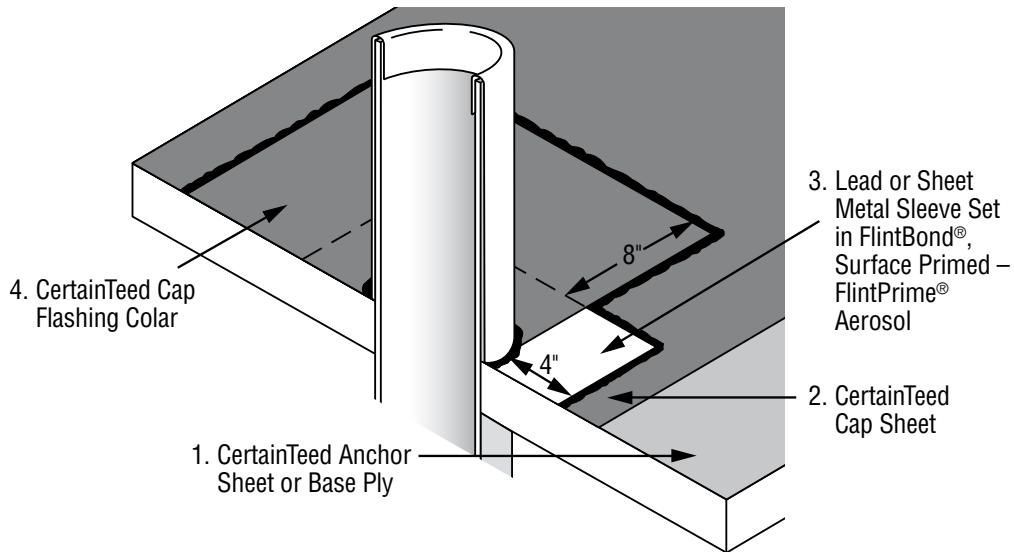
Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Metal Flashing

Shall have a 4" wide primed continuous flange. Set in FlintBond® Trowel or hot asphalt.

Cap Flashing Collar

Fully adhere (self-adhered, torch, cold process or hot asphalt), extending a minimum 8" beyond the metal flange. Treat the granulated surface of Cap Sheet where the Cap Flashing Collar overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal surface while applying rolling pressure from a silicone roller to the overlapping Collar. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Collar with rolling pressure onto the Metal. Roll the overlapping Collar in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Continue overlap application, 2" per pass.

Built Up Ply Sheet

Ply sheets shall be set in hot asphalt; number of plies is defined by specification.

Metal Flashing

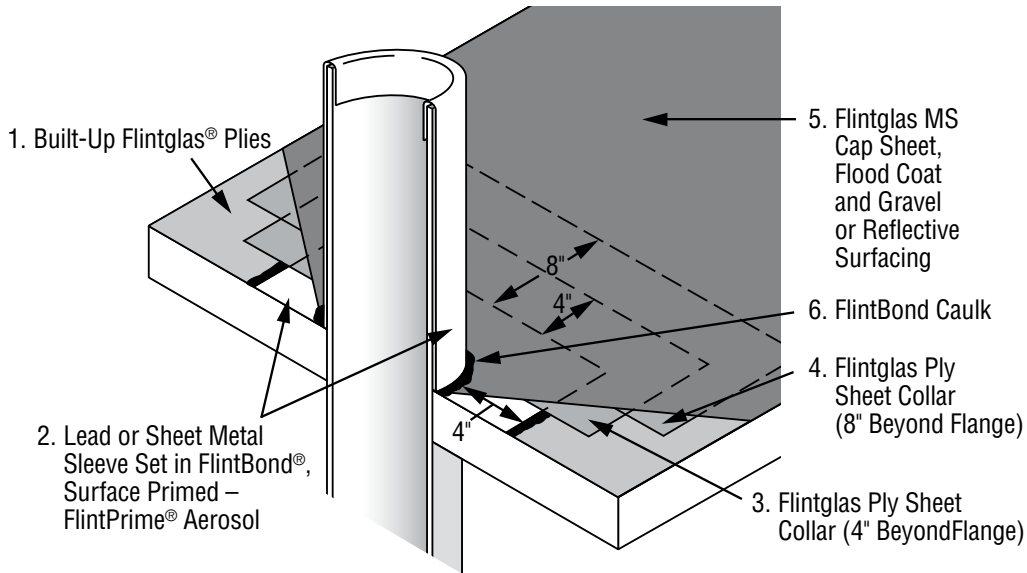
Shall have a 4" wide primed continuous flange. Set in FlintBond® Trowel or hot asphalt.

Flashing Collars

Set two Flintglas Ply Sheet flashing collars in hot asphalt extending 4" and 8", respectively, beyond the metal flange.

Cap Sheet

Fully adhere in hot asphalt; if not using Flintglas® MS Cap, top layer ply sheet may be surfaced with flood coat and gravel or FlintCoat® reflective coating.



NOT DRAWN TO SCALE

Anchor Sheet or Base Ply

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Penetration Pocket

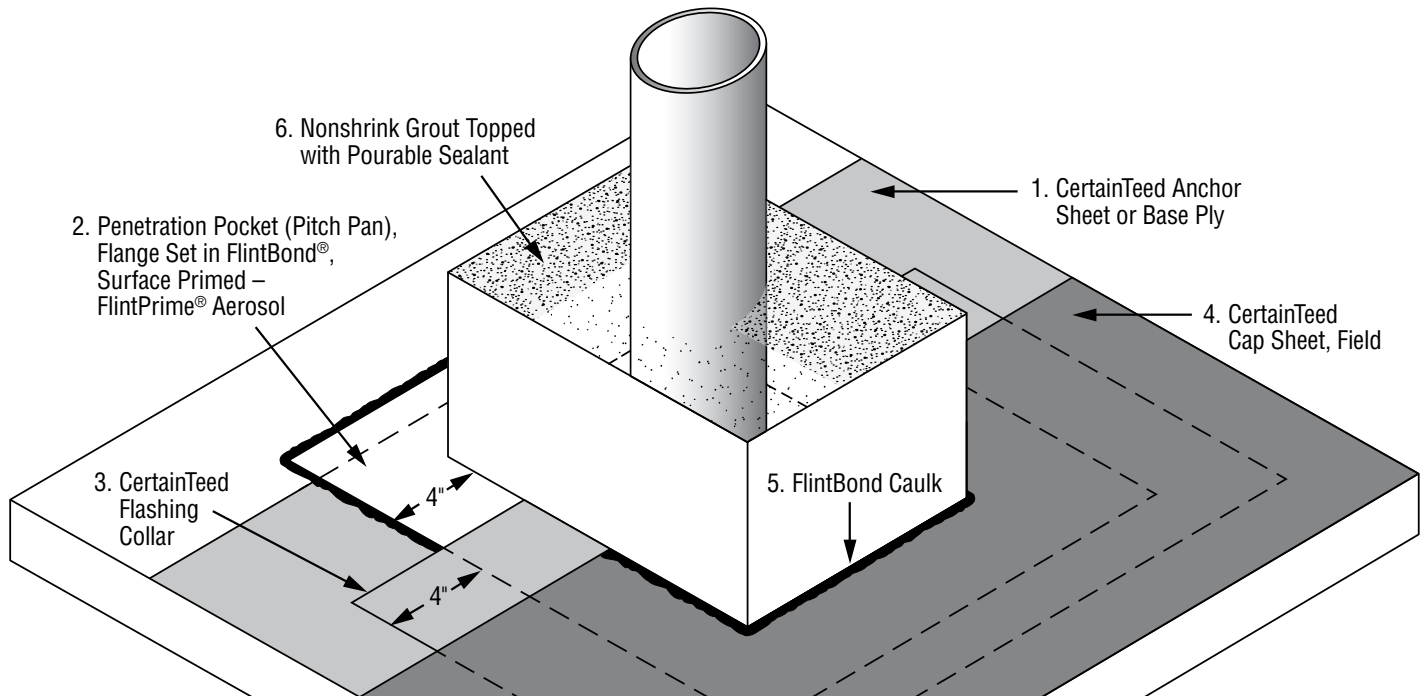
Shall have a 4" wide primed continuous flange and a minimum 4" height. Set in FlintBond® Trowel or hot asphalt.

Flashing Collar & Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt), extending a minimum 4" beyond the metal flange. Proper attachment is defined by product selection. If self-adhered in cold weather¹ hot air weld² collar to metal surface.

Pan Fill

Fill the inside of the pan to within two inches (2") of the top with a non-shrinking grout. After the grout has set, fill the remainder of the pan with a one part pourable sealant.



NOT DRAWN TO SCALE

Note:

Penetration Pockets are not the preferred flashing method at penetrations because they may be a maintenance problem. Please refer to SmartFlash Details for the preferred flashing method.

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal surface while applying rolling pressure from a silicone roller to the overlapping Collar. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Collar with rolling pressure onto the Metal. Roll the overlapping Collar in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4"

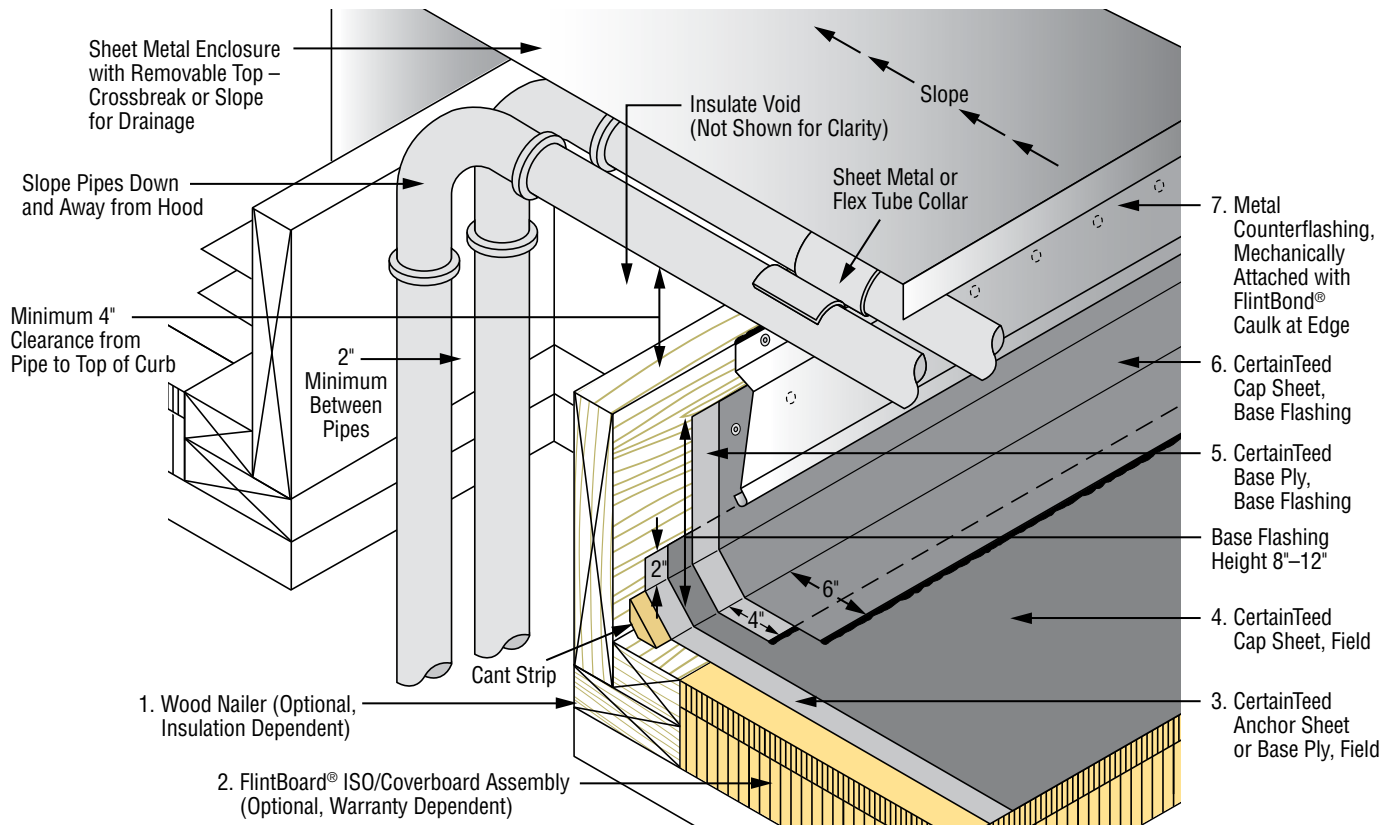
bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs:

If self-adhered or using cold process apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only³)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Metal Counterflashing

Mechanically attached with appropriate fastener approximately 24" o.c., apply bead of FlintBond Caulk along top edge.



¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

³When potential fire hazards can be mitigated, CertainTeed considers it acceptable to install torch-applied CertainTeed Counterflashing using the direct torching method provided low output (50,000 BTU output or less) torching equipment is used. When potential fire hazards cannot be mitigated, torch-applied Counterflashing must be installed using the indirect methods such as torch and flop.

Base Ply

Fully adhere (self-adhered or cold process). Proper attachment is defined by product selection.

Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection.

Metal Flange

Shall have a 4" wide primed continuous flange. Set in FlintBond® Trowel or hot asphalt.

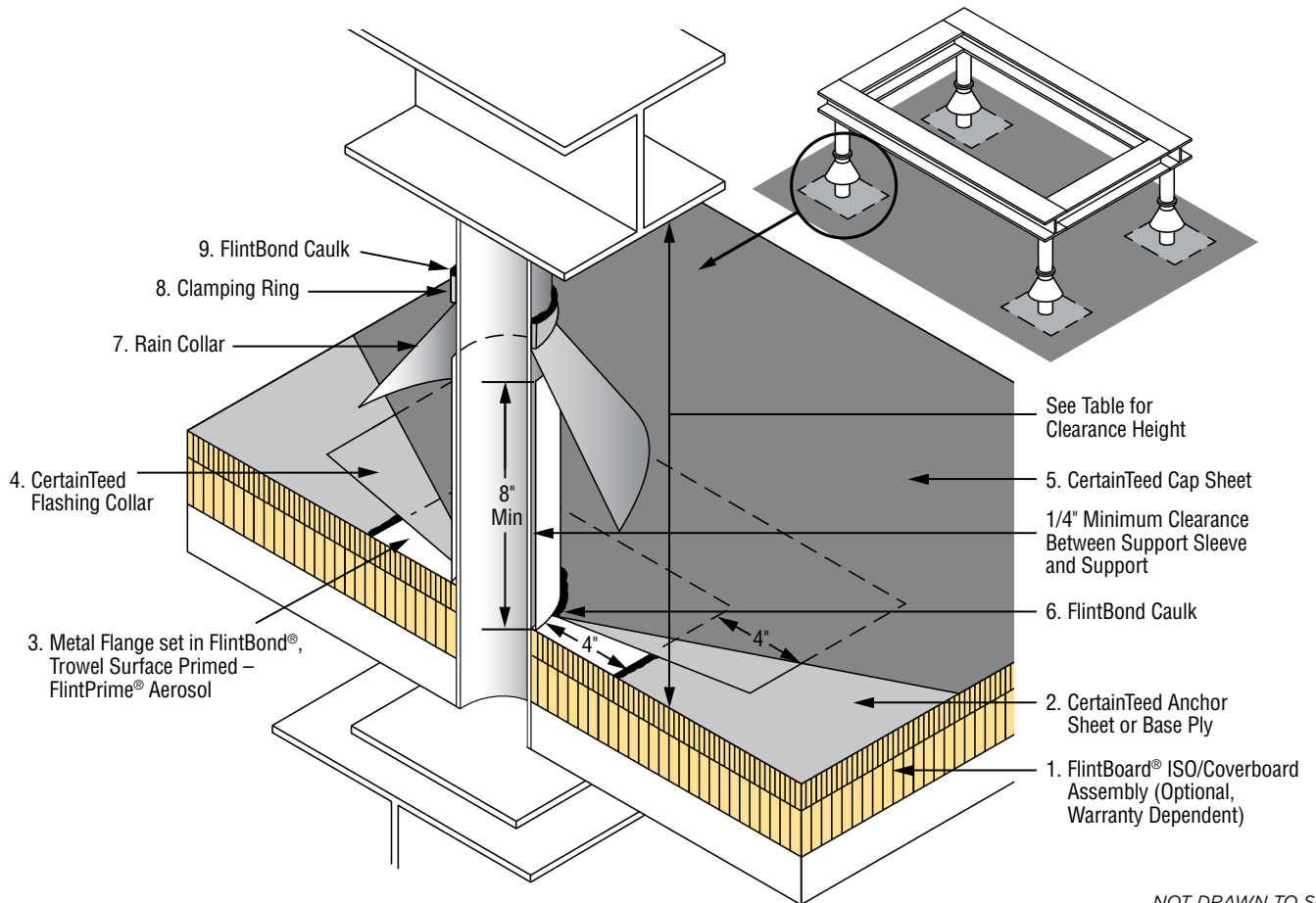
Flashing Collar

Fully adhere (self-adhered, torch, cold process or hot asphalt), extending a minimum 4" beyond the metal flange. Proper attachment is defined by product selection.

If self-adhered in cold weather¹ hot air weld² collar to metal surface.

Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt) cap sheet in the field. Proper attachment is defined by product selection.



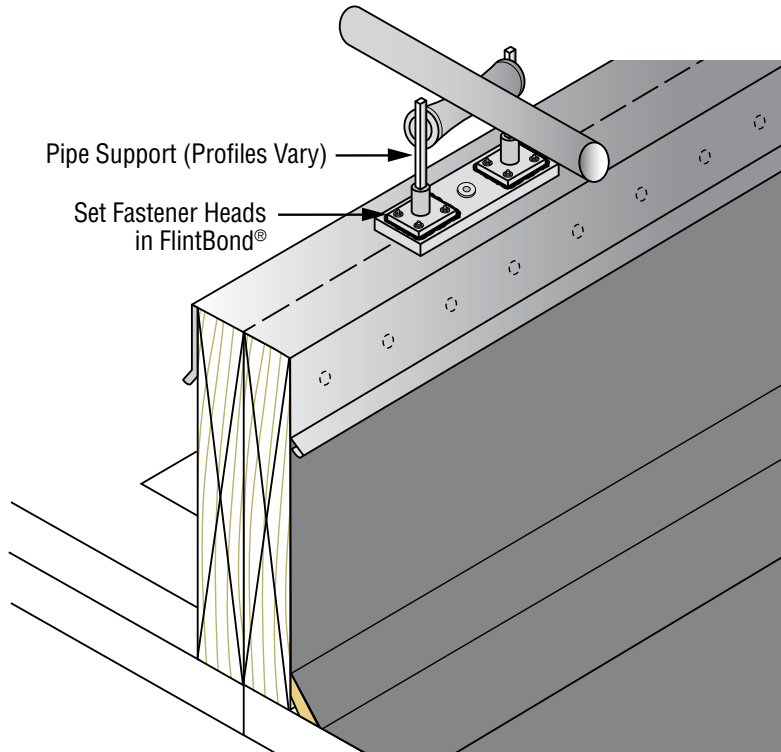
NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal surface while applying rolling pressure from a silicone roller to the overlapping Collar. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Collar with rolling pressure onto the Metal. Roll the overlapping Collar in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Continue overlap application, 2" per pass.

Width of Equipment	Clearance
Up to 24"	14"
25" to 36"	18"
37" to 48"	24"
49" to 60"	30"
61" and Wider	36"

NOTE: This detail is intended to illustrate pipe support application.
See appropriate parapet wall detail for Base Flashing application instructions.



NOT DRAWN TO SCALE

Insulation and Wood Nailers

Chamfer/taper to create slope away from joint.

Base Ply

Fully adhere (self-adhered or cold process).
Proper attachment is defined by product selection.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection.

Flexible Liner

Mechanically attach with appropriate fasteners, 9" o.c.

Weatherproofing Strip

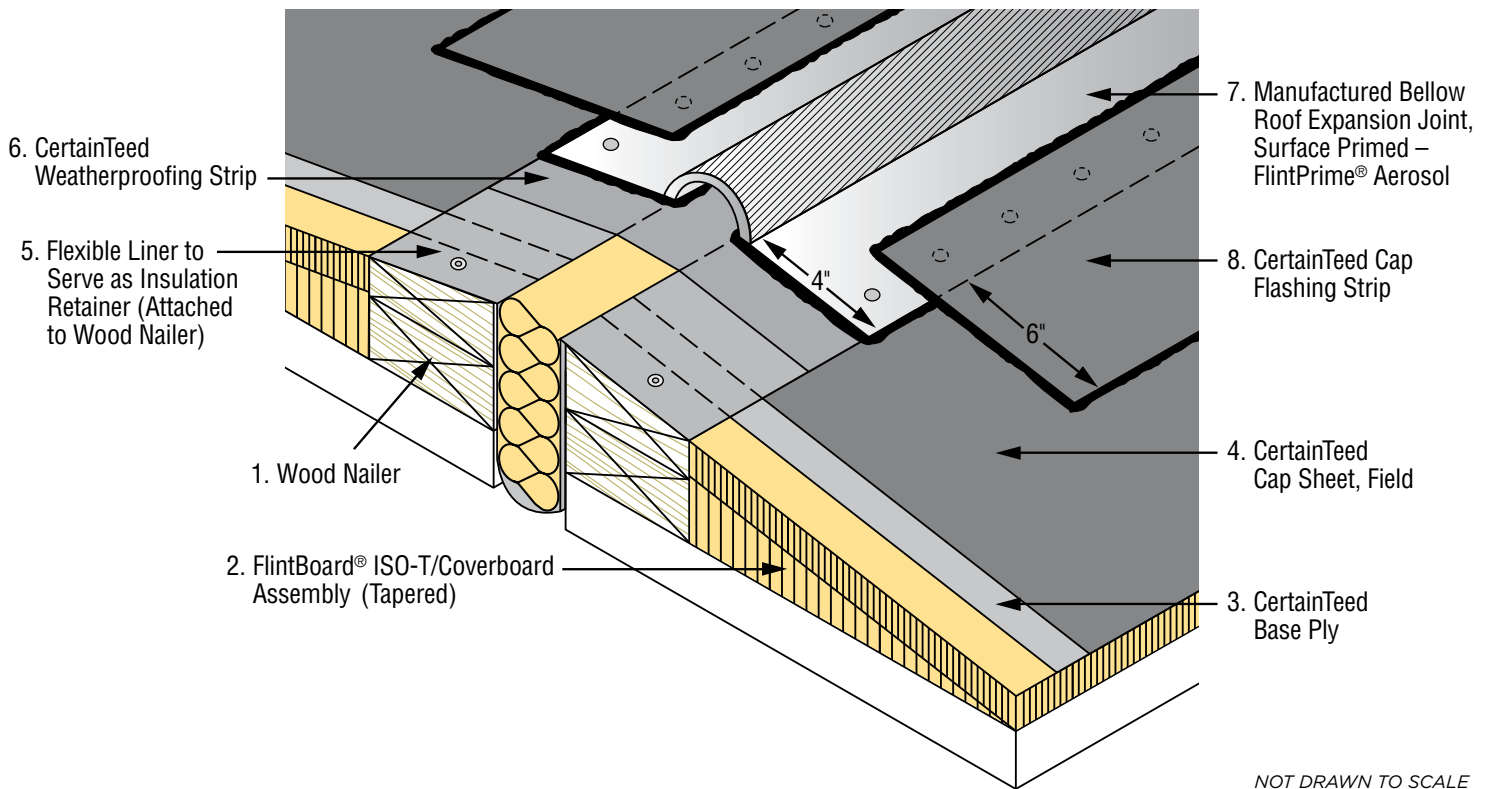
Self-adhere WinterGuard® Metal, WinterGuard® HT or Flintlastic® SA PlyBase/SA MidPly.

Manufactured Bellow

Set in 1/8"-1/4" uniform bed of FlintBond® Trowel adhesive and mechanically attach with appropriate fasteners 4" o.c.; endlaps shall be set in FlintBond® Trowel with two nails; prime surface of flange with FlintPrime® Aerosol.

Cap Sheet Flashing Strip

Fully adhere (self-adhered, torch, cold process or hot asphalt), extending a minimum 6" beyond the metal flange. Proper attachment is defined by product selection. Treat the granulated surface of Cap Sheet, Field, where the Cap Flashing Strip overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² to metal and Cap Sheet, Field with bead of FlintBond Caulk at edge; **if torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal/granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Cap with rolling pressure onto the Metal/granular surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Continue overlap application, 2" per pass.

Anchor Sheet or Base Ply, Field

Mechanically attach or fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment of the base layer is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered** or using cold process apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in

cold weather¹⁾ hot air weld²⁾ with bead of FlintBond Caulk at edge; **If torch-welded (cap only³⁾)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Flexible Liner

Mechanically attach with appropriate fasteners, 9" o.c.

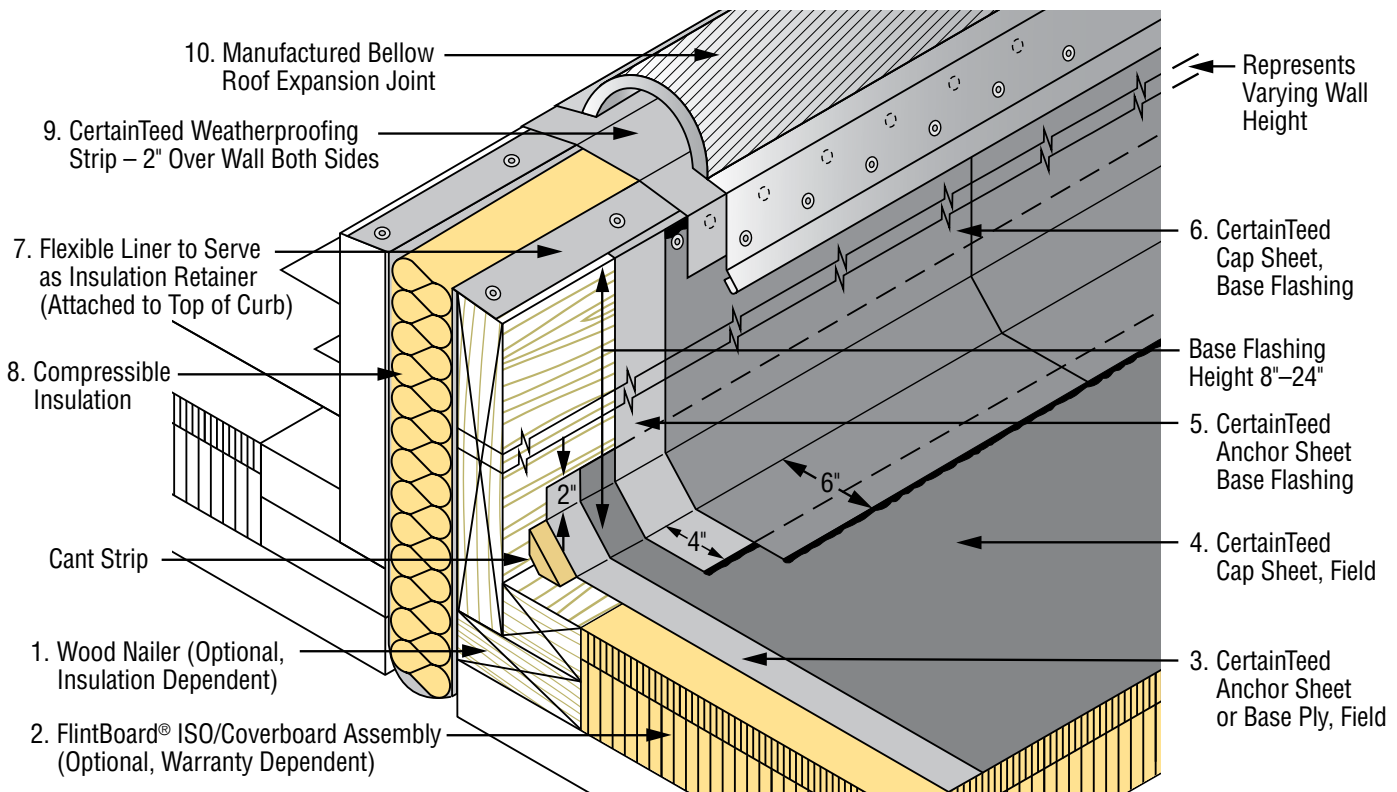
Weatherproofing Strip

Self-adhere WinterGuard® Metal, WinterGuard® HT or Flintlastic® PlyBase/MidPly. Turn down over wall 2" both sides (to be gang fastened when bellow is attached)..

Manufactured Bellow

Mechanically attach with appropriate fasteners 9" o.c.; endlaps shall be set in FlintBond Trowel with two nails; prime surface of flange with FlintPrime® Aerosol.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

Use this detail when the potential for differential movement may occur between the deck and a vertical surface. Wood members should not be fastened to the wall.

Anchor Sheet or Base Ply, Field

Mechanically attach or Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

Base Flashing

WALL ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk.

FIELD ATTACHMENT: Treat the granulated surface of Cap

Sheet, Field, where the Base Flashing overlap occurs:

If self-adhered or using cold process apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only³)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

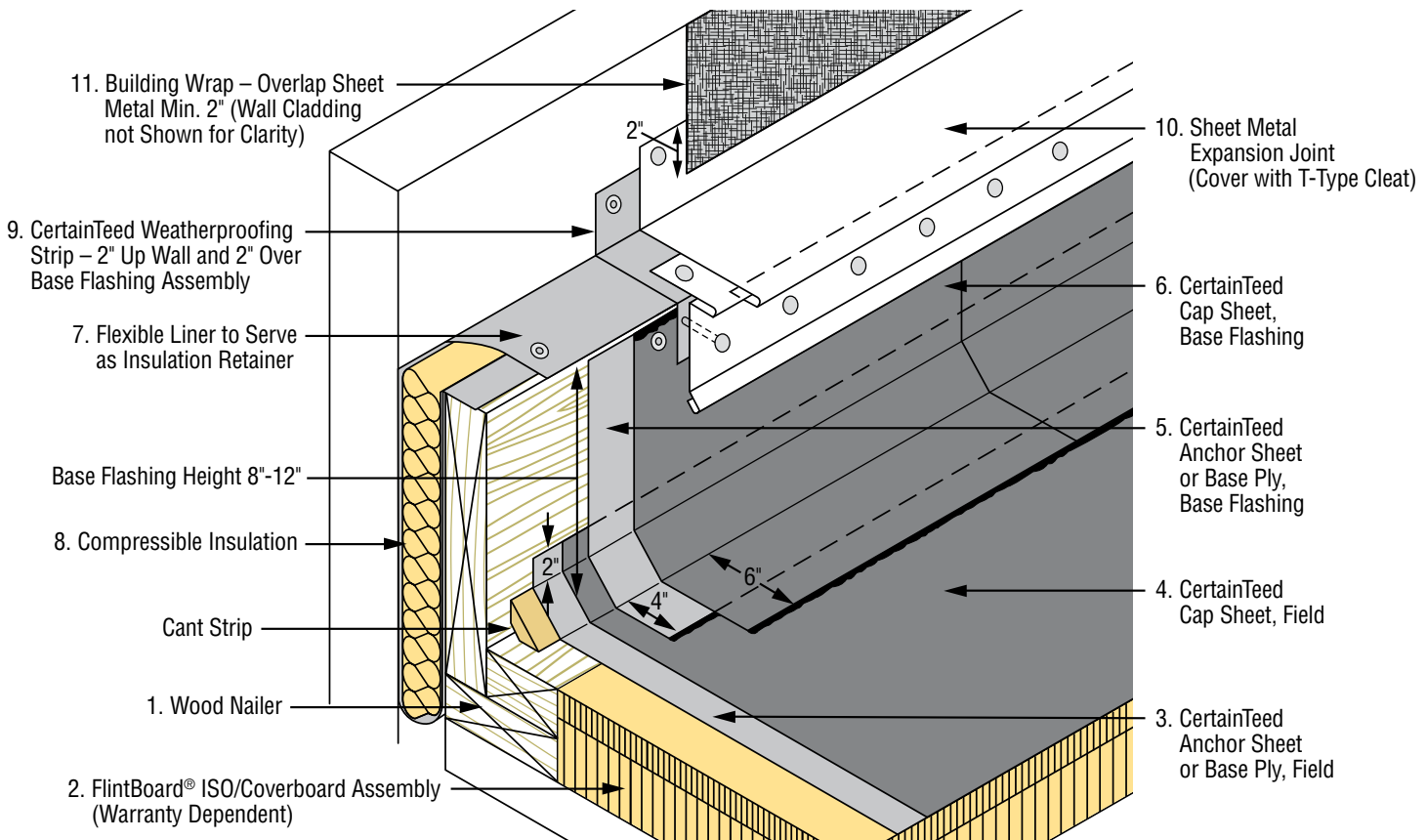
Weatherproofing Strip

Secure and self-adhere CertainTeed WinterGuard® Metal, WinterGuard® HT or Flintlastic® SA PlyBase 2" up the wall and turned down over base flashing, nail top edge 12" o.c. with 11 gauge ring shank nails.

Sheet Metal

Refer to the Architectural Metal Flashing section of the NRCA Roofing Manual for securement options.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

One way vents should be prefabricated from spun aluminum; plastic vents are not acceptable. Refer to CertainTeed Commercial Roof Systems Specifications, General Recommendations, Section 3.9 for application recommendations for Lightweight Insulating Concrete Decks.

Pressure Release Vent

Install a minimum 4" diameter pressure release vent with 4" wide primed continuous flange and weather resistant hood 20 feet from perimeter edges and 40 feet o.c. thereafter, located directly over 4" diameter

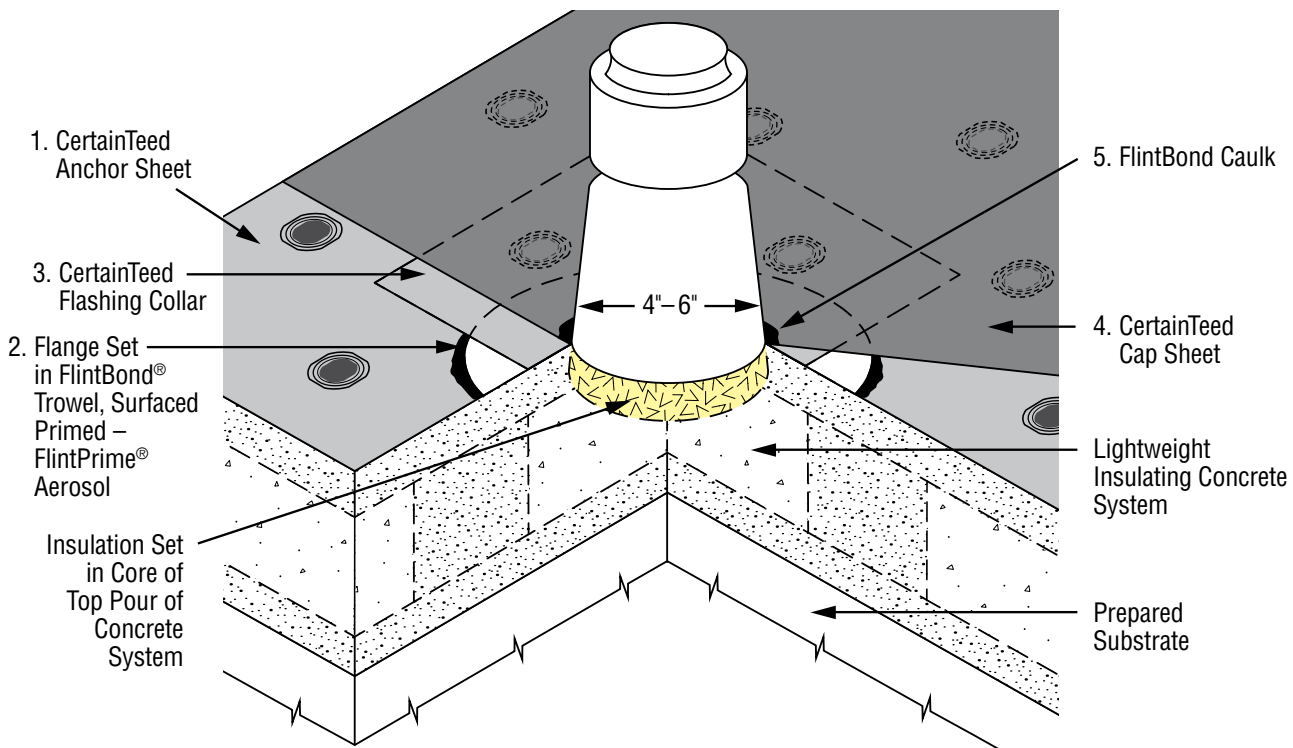
opening cut through the roof system and into the insulating fill not less than 2"; center the release vent over the prepared opening on top of the complete filed membrane.

Anchor Sheet

Mechanically attach with FlintFast® FM 90 Base Sheet Fastener, Twin Loc or Do-All Loc Nails a minimum 9" o.c. in sidelaps and two staggered rows space 18" o.c. in the field.

Flashing Collar & Cap Sheet

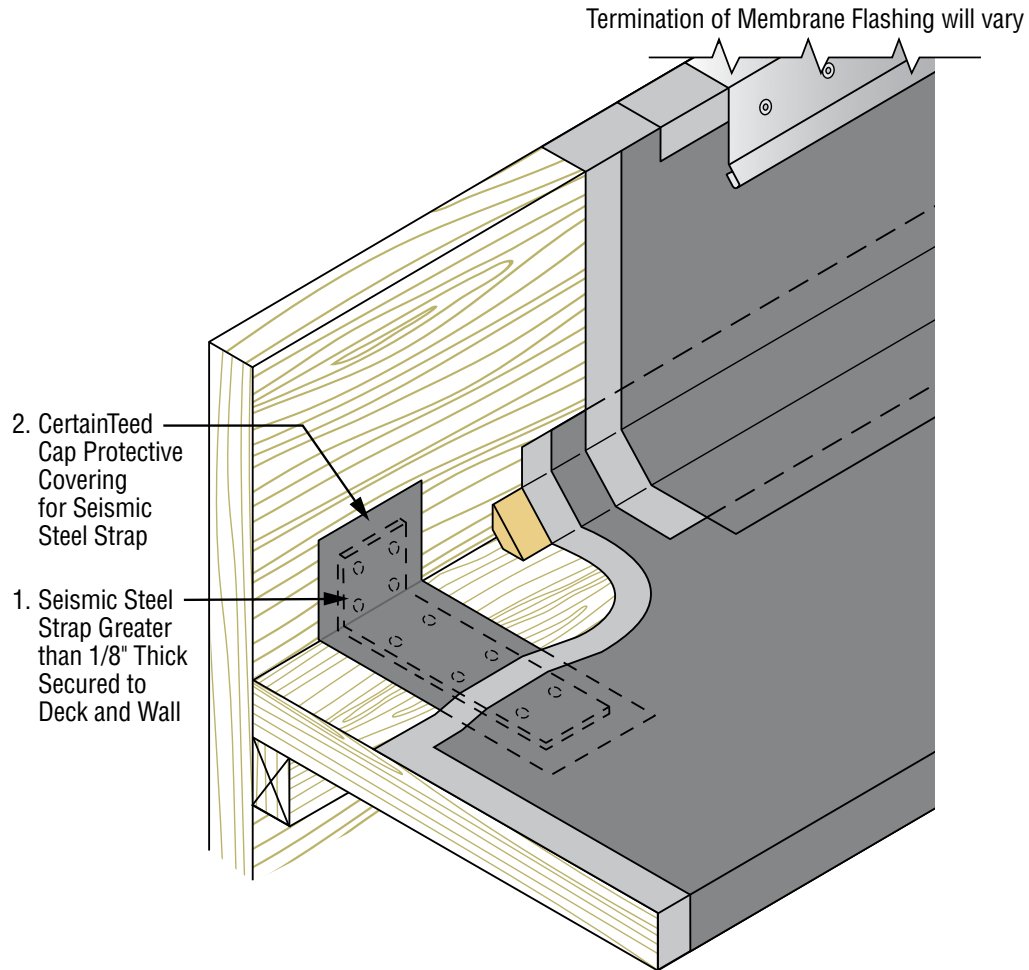
Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection.



NOT DRAWN TO SCALE

This detail is intended to illustrate application associated with a seismic strap. See appropriate parapet wall detail for Base Flashing application instructions.

To reduce stress on roof membrane from seismic strap friction and heat, loose lay Cap Protective Covering atop seismic strap, tack in place as needed.

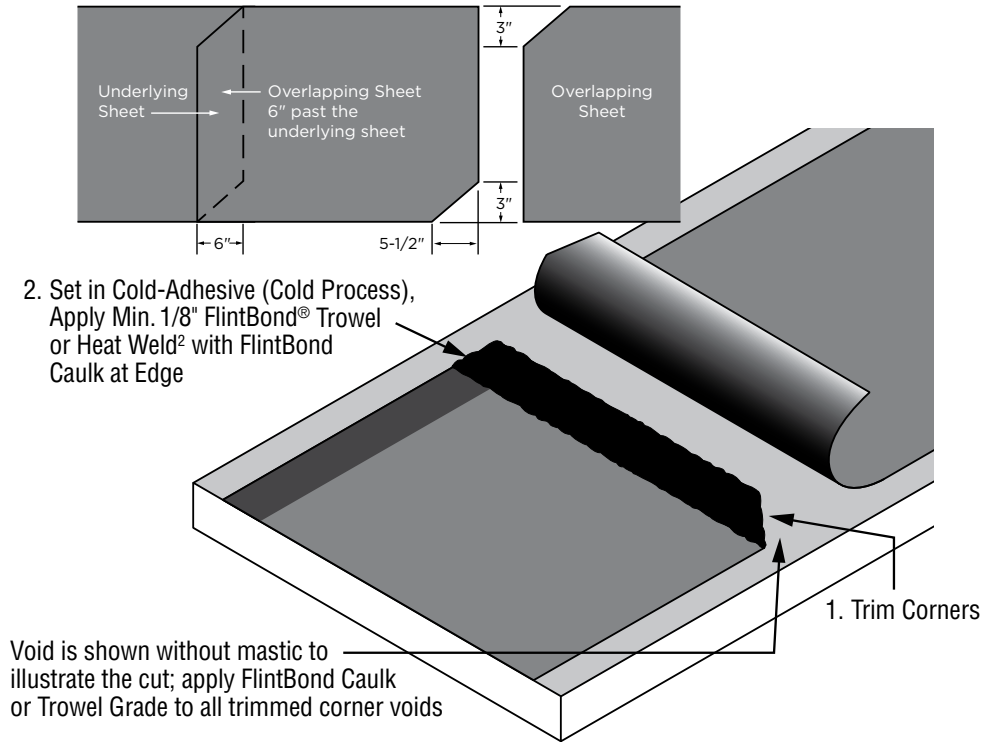


NOT DRAWN TO SCALE

Base Ply, Interply, Cap Corner Treatment

For fully adhered Base Plies, Interplies and Cap Sheets, trim the underlying sheet's lower outside corner at the end of the roll as shown; follow with the overlapping sheet trimming the upper outside corner as shown.

If self-adhered or using cold-adhesive apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather²) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

Refer to the CertainTeed Shingle Applicator Manual for shingle application guidance.

Anchor Sheet, Field

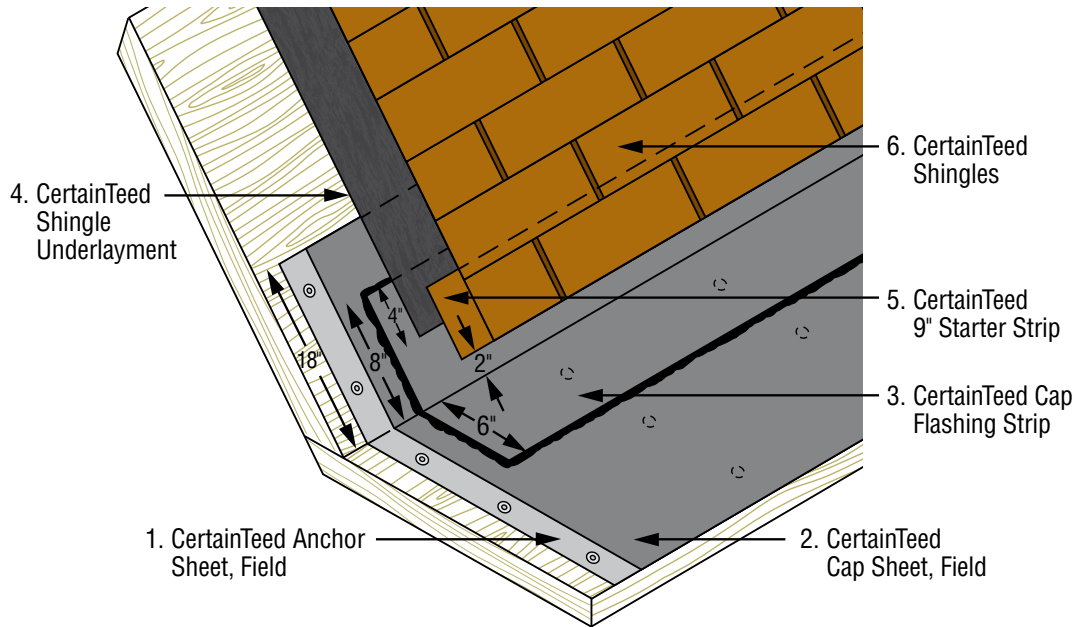
Mechanically attach with cap nails or approved fasteners spaced a minimum 9" o.c. in sidelaps and two staggered rows space 18" o.c. in the field.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection.

Cap Sheet Flashing Strip

Treat the granulated surface of Cap Sheet, Field, where the Flashing Strip overlap occurs: **If self-adhered or using cold process** apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

Refer to the CertainTeed Shingle Applicator Manual for underlayment and shingle application guidance.

CertainTeed Flintlastic Strip

Fully adhere (self-adhered, cold process). **If self-adhered** apply Flintbond® Caulk at edge; **if using cold process** set in FlintBond Trowel with 1/4" bleed out at edge.

Anchor Sheet, Field

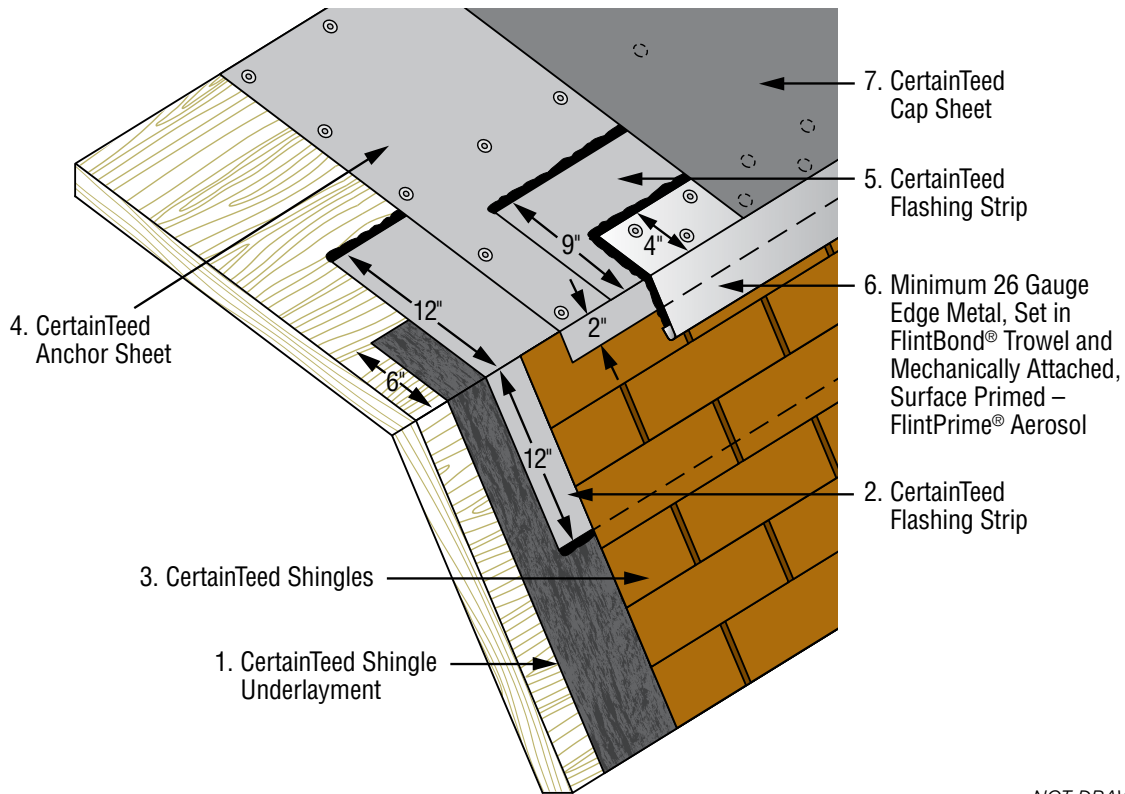
Mechanically attach with cap nails or approved fasteners spaced a minimum 9" o.c. in sidelaps and two staggered rows space 18" o.c. in the field.

Edge Metal

Set in FlintBond Trowel. Mechanically attach a minimum two staggered rows, 6" o.c. or as required by building code; endlaps should receive two nails. Prime surface with FlintPrime® Aerosol.

Cap Sheet

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. **If self-adhered**, in cold weather¹ hot air weld² with bead of FlintBond Caulk at edge.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the metal surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 300°F-500°F (setting 2-3), apply heat to the overlap interface while bonding Cap with rolling pressure onto the Metal. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke.

Prime vertical surface with FlintPrime® or FlintPrime SA, as appropriate for Cap Sheet Base Flashing application method.

Anchor Sheet or Base Ply, Field

Mechanically attach or Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

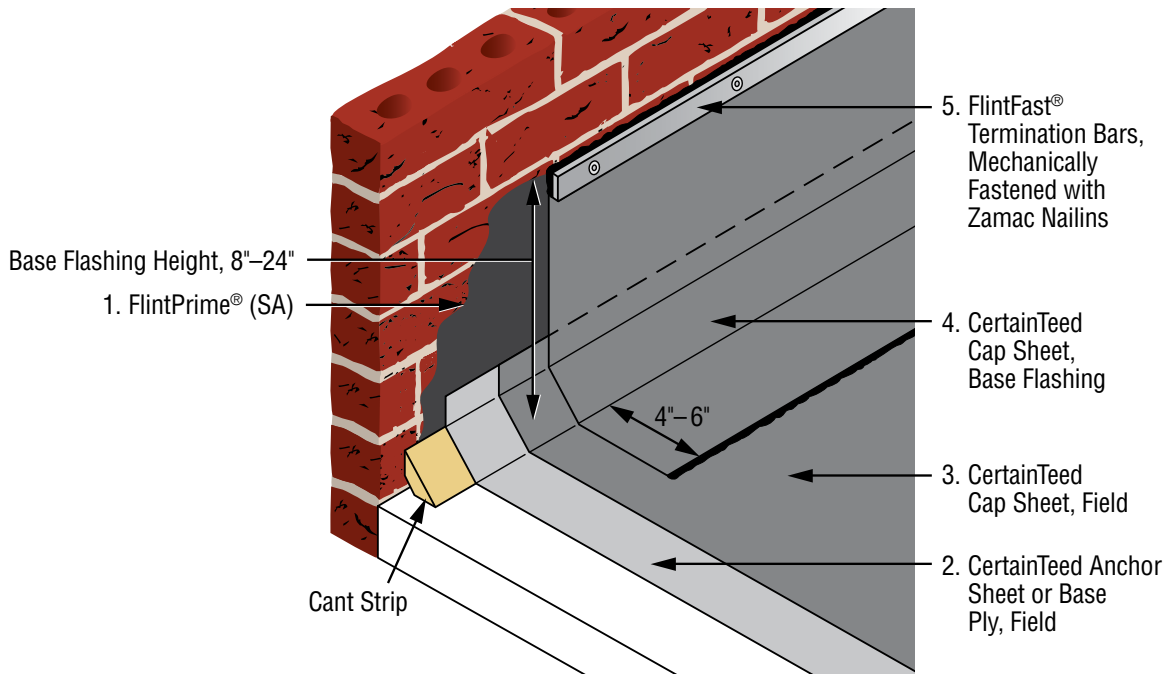
Base Flashing

WALL ATTACHMENT: **If self-adhered** apply FlintBond® Caulk to top edge; **If torch-welded** ensure 1/4" bleed out at top edge; **If using cold-adhesive** set in FlintBond Trowel

with 1/4" bleed out at top edge; if using hot asphalt ensure 1/4" bleed out at top edge. Terminate top edge with FlintFast® Termination Bar and Zamac Nails.

FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

CertainTeed recommends strapping all Base Flashing and Counterflashing rolls, running the width of the roll up or perpendicular to the vertical surface.



NOT DRAWN TO SCALE

Premium Application

Add a CertainTeed Modified Bitumen Base Ply behind the Cap Sheet, Counterflashing. Extend it a minimum of 4" out onto the Cap Sheet, Field. Extend the Cap Sheet, Counterflashing out onto the Cap Sheet, Field a minimum of 4" beyond the underlying additional ply.

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

Anchor Sheet or Base Ply, Field

Mechanically attach or Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

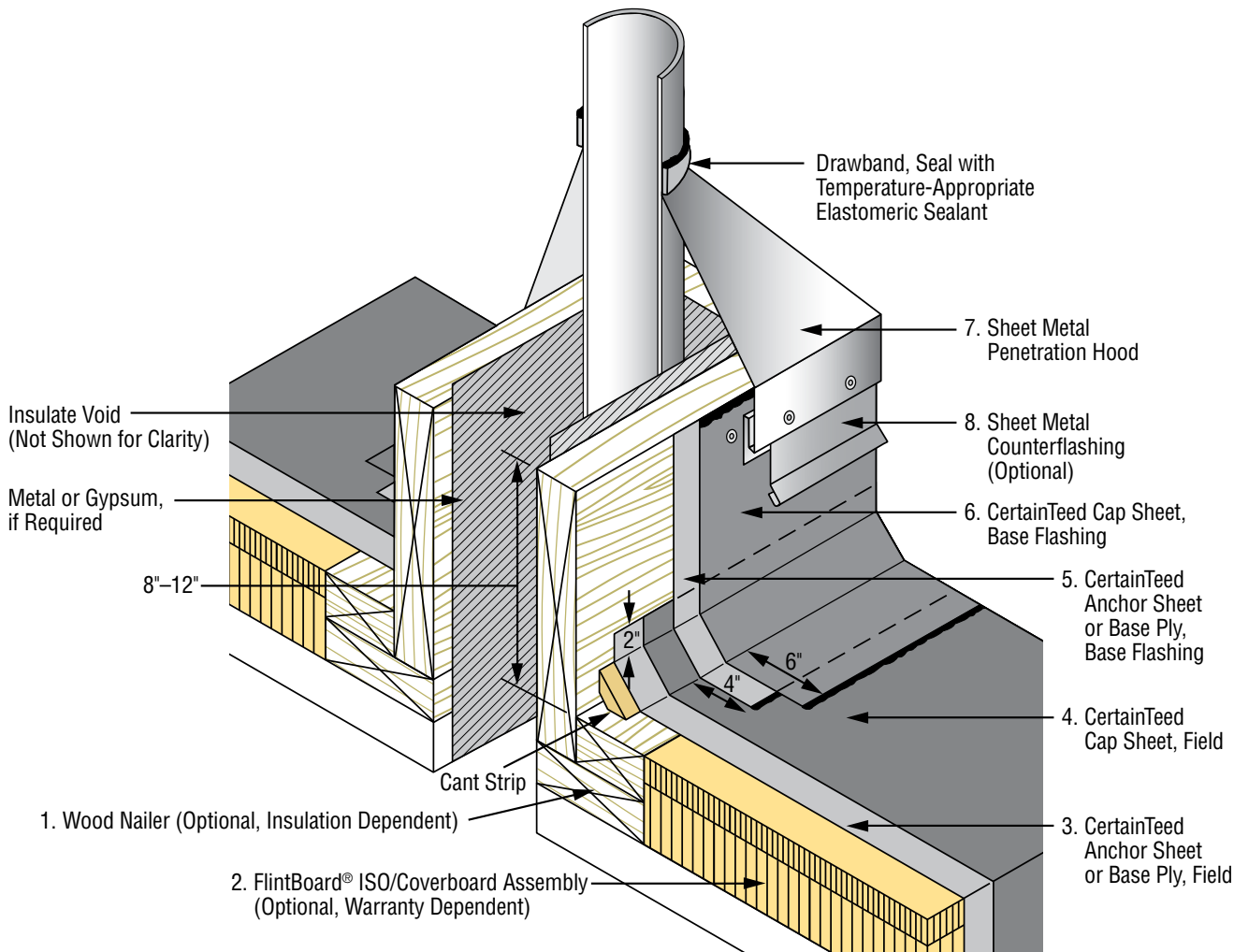
Base Flashing

CURB ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base

and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond® Caulk. **FIELD ATTACHMENT:** Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only³)** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Sheet Metal

Refer to the Architectural Metal Flashing section of the NRCA Roofing Manual for securement options.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

Anchor Sheet or Base Ply, Field

Mechanically attach or Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by specified system, product selection and deck type.

Cap Sheet, Field

Fully adhere (self-adhered, torch, cold process or hot asphalt). Proper attachment is defined by product selection. Extend base ply and cap sheet 2" above cant strip; adhere to cant strip only.

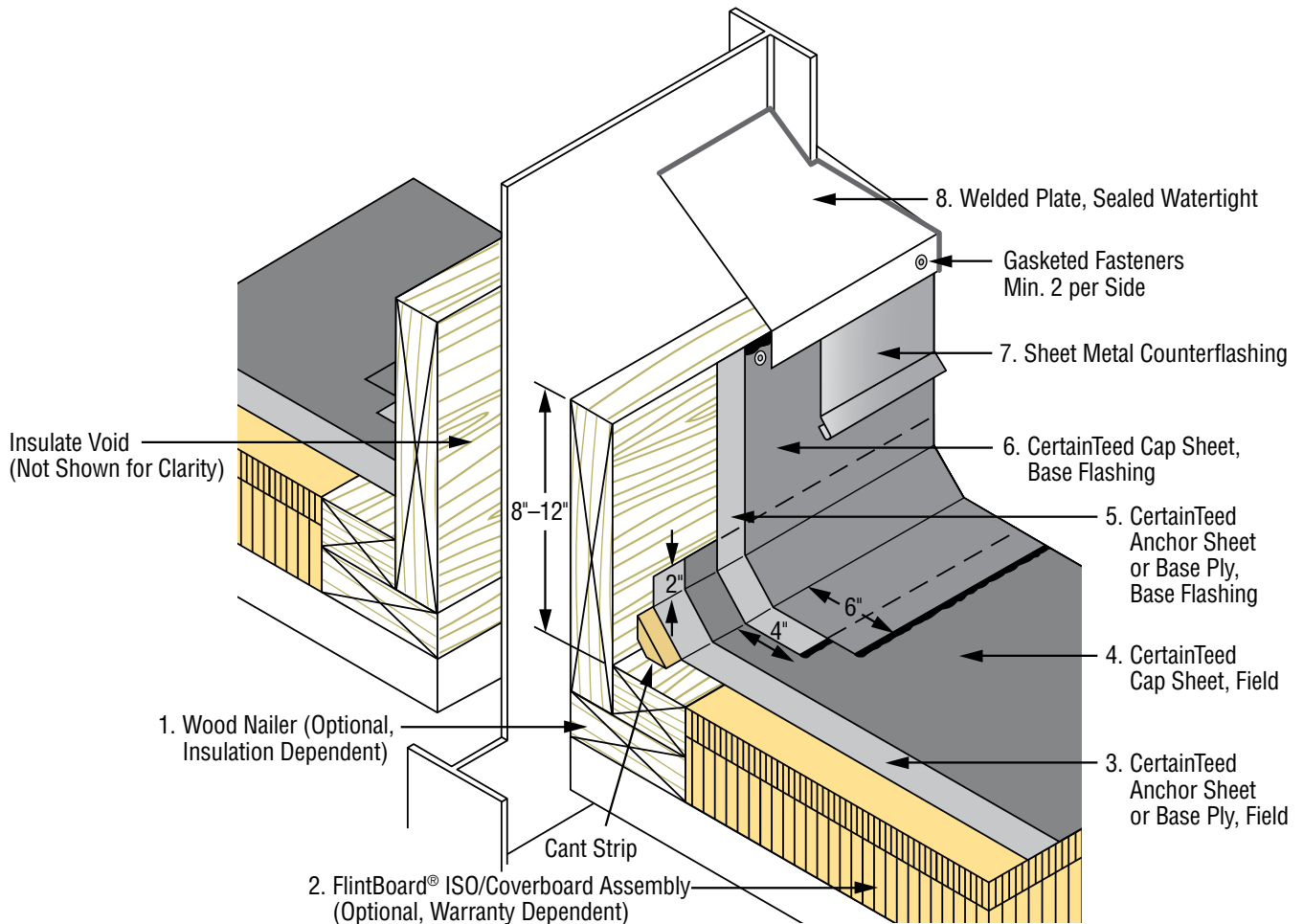
Base Flashing

CURB ATTACHMENT: Mechanically attach Anchor 12" o.c. or self-adhere Base Ply; Fully adhere Cap (self-adhered, torch-weld, cold process or hot asphalt; Gang fasten Base

and Cap at top edge 9" o.c. with tin discs; Ensure 1.4" bleed out on top edge or apply FlintBond Caulk.
FIELD ATTACHMENT: Treat the granulated surface of Cap Sheet, Field, where the Base Flashing overlap occurs: **If self-adhered or using cold process** apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded (cap only)³** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Sheet Metal

Refer to the Architectural Metal Flashing section of the NRCA Roofing Manual for securement options.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

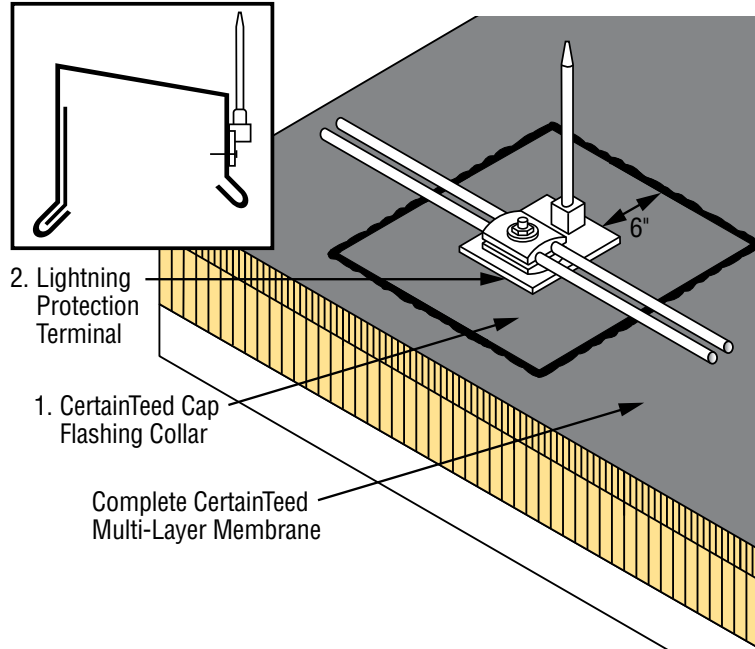
³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

This detail depicts the weatherproofing protection and does not represent lightning protection design.

Extend Flashing Collar a minimum 6" beyond edge of Terminal. Treat the granulated surface of Cap Sheet, Field, where the Cap Sheet Flashing Collar overlap occurs: **If self-adhered or using cold-adhesive** apply FlintBond®

Trowel to entire lapped surface with 1/4" bleed out or (in cold weather¹) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.

Terminal Support at Coping



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward.

Use this detail when applying CertainTeed built-up and SBS-modified bitumen roll goods on slopes greater than 1:12 and APP-modified bitumen membranes on slopes greater than 2:12.

Nailers

Install minimum 3-1/2" wide nailers or woodblocking set flush to surface of deck at all eaves, ridges, rakes and base of curbs. Nailer spacing is membrane dependent:

SLOPE	Membrane	Polyester Reinforced		Fiberglass Reinforced
		SBS-Modified	APP-Modified	
1"		32' o.c.	N/A (do not backnail)	8' o.c.
2"-3"			32' o.c.	
3"<		16' o.c.	16' o.c.	

Base Sheet

Fully adhere (self-adhered, torch, cold adhesive or hot asphalt). Proper attachment is defined by specified system, product selection, and substrate type. As with standard application, the width of the first sheet shall be cut to allow all side laps to be staggered:

	2-PLY SYSTEMS		3-PLY SYSTEMS		
	Base	Cap	Base	Interply	Cap
Starter Row Width	19-11/16" (1/2 roll)	39-3/8" (full roll)	26-1/4" (2/3 roll)	19-11/16" (1/2 roll)	39-3/8" (full roll)

Apply parallel to slope, overlapping side laps minimum 2" and/or as building code requires. Beginning 1" from the leading edge of the sheet, fasten to nailers with ring shank nails through tin

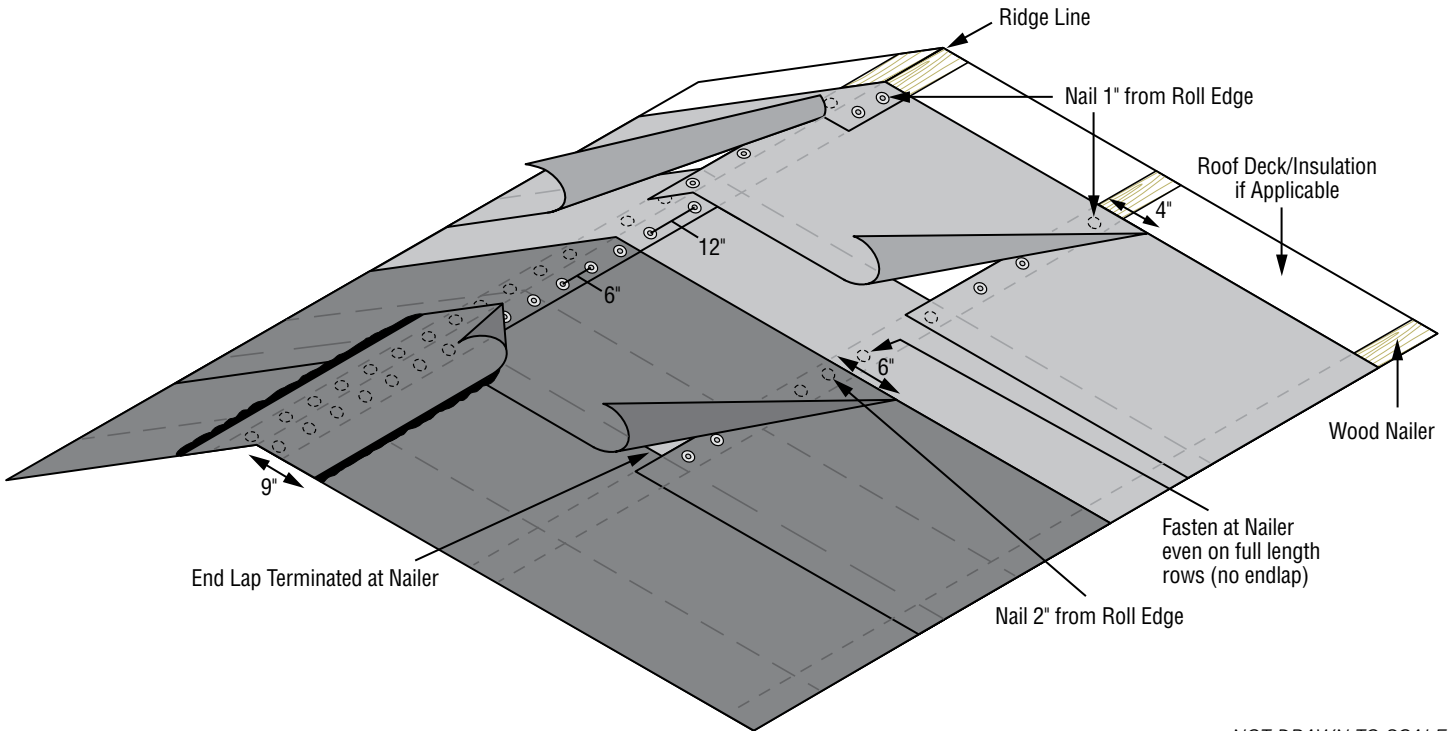
discs spaced 12" o.c. Overlap all end laps 4". Endlaps must occur at nailers such that the top edge of the overlapped sheet can be fastened to the nailer and the fastener completely covered. Fasten roll into each nailer throughout the deck even if length of a single roll covers the entire deck/substrate (no endlaps).

Cap Sheet

Fully adhere (self-adhered, torch, cold adhesive or hot asphalt). Proper attachment is defined by specified system, product selection, and substrate type. Apply parallel to slope, overlapping side laps minimum 3" and/or as building code requires. Beginning at the ridge line nailer, and 2" from the leading edge of the sheet, fasten to nailer with ring shank nails through tin discs spaced 6" o.c. Overlap all end laps 6". Endlaps must occur at nailers such that the top edge of the overlapped sheet can be fastened to the nailer and the fastener completely covered. If length of roll covers the entire deck/substrate (no endlaps), roll should not be fastened at each nailer, just at the ridge.

Header Flashing Strip

Install a minimum 9" beyond field sheets on both sides of the ridge. Properly treat the granulated surface of Cap Sheet where the Header Flashing Strip overlap occurs: **If self-adhered or using cold-adhesive** apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather) hot air weld² with bead of FlintBond Caulk at edge; **If torch-welded** (cap only³) heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



NOT DRAWN TO SCALE

¹20°F-49°F (-6.6°C-4.4°C)

²Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

³When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

Use this detail when applying CertainTeed built-up and SBS-modified bitumen roll goods on slopes greater than 1:12 and APP-modified bitumen membranes on slopes greater than 2:12

Base Sheet

As with standard application, the width of the first sheet shall be cut to allow all side laps to be staggered:

	2-PLY SYSTEMS		3-PLY SYSTEMS		
	Base	Cap	Base	Interply	Cap
Starter Row Width	19-11/16" (1/2 roll)	39-3/8" (full roll)	26-1/4" (2/3 roll)	19-11/16" (1/2 roll)	39-3/8" (full roll)

Apply parallel to slope, overlapping side laps minimum 2" and/or as building code requires. Mechanically attach with ring shank nails through tin discs or other approved fasteners¹ spaced a minimum 9" o.c. in sidelaps and 8" o.c. in the field, two staggered rows. At the ridge line, beginning 1" from the leading edge of the sheet, fasten 12" o.c. Overlap all end laps 4". At endlaps, fasten the top edge of the overlapped sheet 12" o.c.

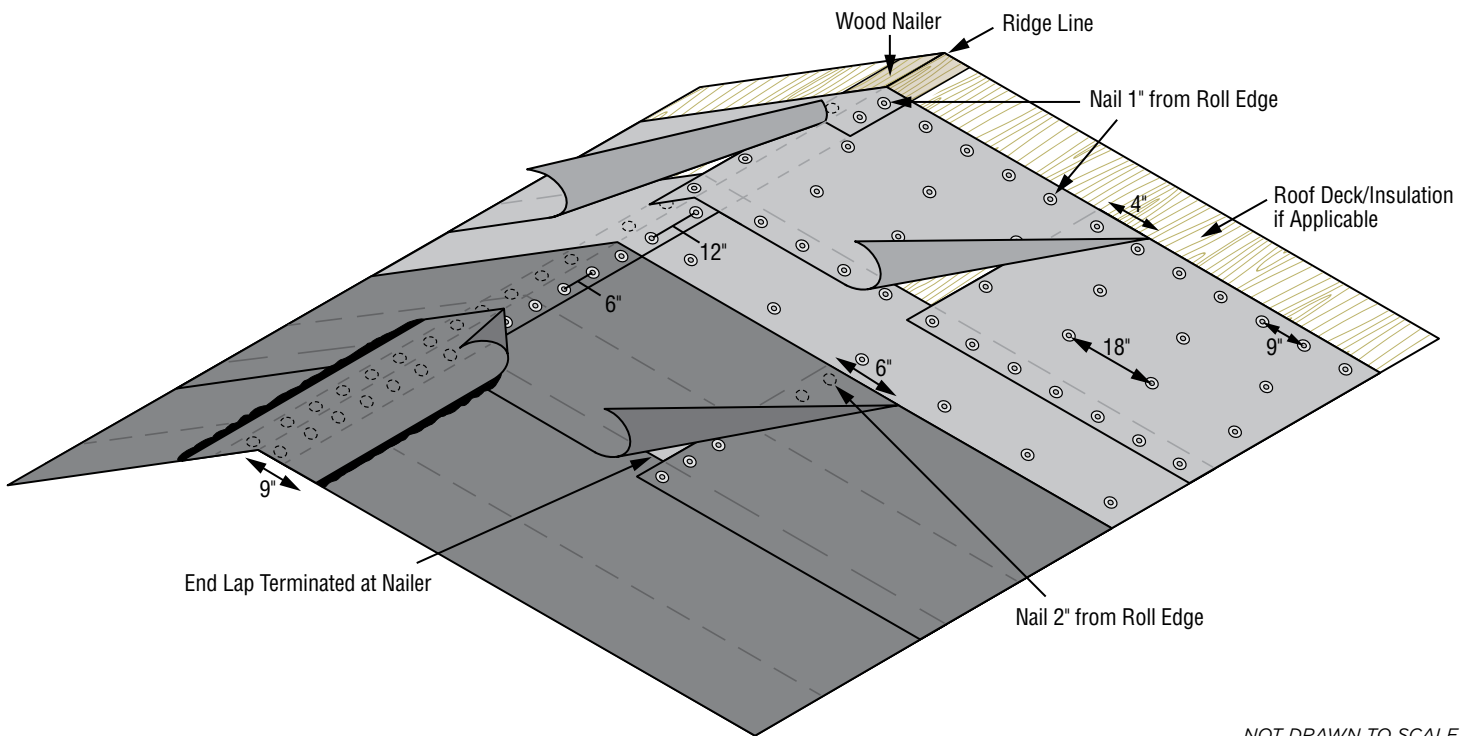
Cap Sheet

Fully adhere (self-adhered, torch, cold adhesive or hot asphalt). Proper attachment is defined by specified system, product selection, and substrate type. Apply parallel to slope, overlapping side laps minimum 3" and/or as building code requires. Beginning at the ridge line nailer, and 2" from the leading edge of the sheet, fasten to nailer with ring shank nails through tin discs or other approved fasteners¹ spaced 6" o.c. Overlap all end laps 6". At endlaps, fasten the top edge of the overlapped sheet 12" o.c.

Header Flashing Strip

Install a minimum 9" beyond field sheets on both sides of the ridge. Properly treat the granulated surface of Cap Sheet where the Header Flashing Strip overlap occurs:

If self-adhered or using cold-adhesive apply FlintBond® Trowel to entire lapped surface with 1/4" bleed out or (in cold weather²) hot air weld³ with bead of FlintBond Caulk at edge; **if torch-welded** (cap only⁴) heat sink/scrape the granules with heated trowel or granular embedment tool and ensure 1/4" bleed out; **if using hot asphalt** apply to entire lapped surface with 1/4" bleed out.



¹See Flintlastic Applicator Handbook - Reference Table - General Guide to Mechanical Fasteners.

²20°F-49°F (-6.6°C-4.4°C)

³Apply heat from a hot-air welder with a 2" tip to the overlapped granular surface while applying rolling pressure from a silicone roller to the overlapping Cap. With the hot air welder set between 900°F-1,100°F (setting 8-10), apply heat to the overlap interface while bonding Cap with rolling pressure on the granulated surface. Roll the overlapping Cap in place, moving the hot air welder to allow for forward progress. Avoid applying so much heat or moving at a pace that results in smoke. Apply a bead of FlintBond Caulk along the edge. Continue overlap application, 2"-3" per pass.

⁴When potential fire hazards can be mitigated CertainTeed considers it acceptable to direct torch provided low output (50,000 BTU or less) equipment is used; when potential fire hazards cannot be mitigated indirect torching methods should be utilized.

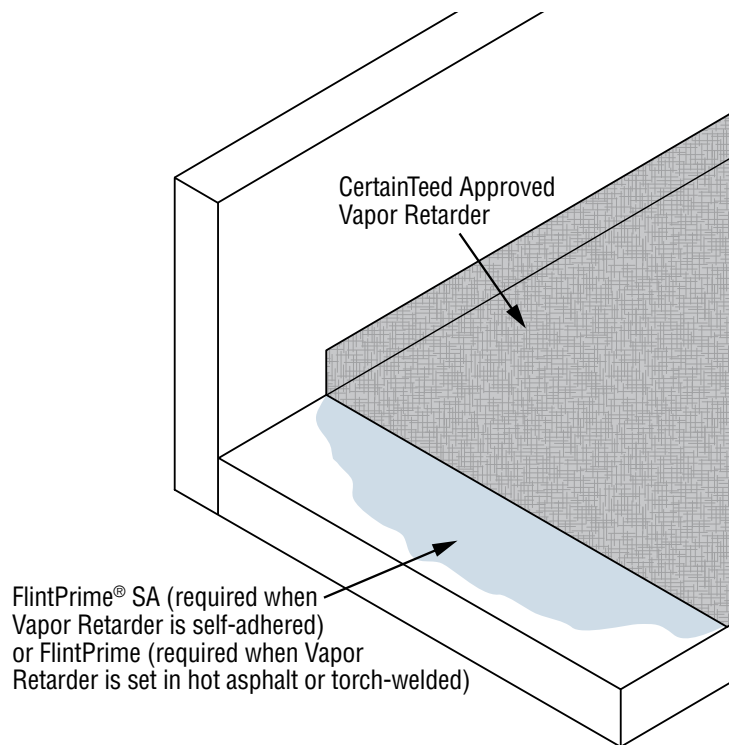
Vapor retarders minimize the incursion of water vapor rising from the building interior into the roof membrane where it can accumulate and condense. The need for a vapor retarder should be evaluated by a design professional that has knowledge of the structure and local environment.

CertainTeed's Black Diamond® Base Sheet

This SBS-modified, self-adhered membrane, can be utilized as a vapor retarder and left exposed up to six months. Alternatively, the following CertainTeed membranes may be utilized as a vapor retarder:

- Flintglas® Ply 4 or Premium Ply 6 (two layers), applied in hot asphalt
- Any Flintlastic® base sheet (surface must be covered within 24 hours or primed prior to application of insulation or waterproofing/weathering roof membrane)
- Any Flintlastic cap sheet

The proper attachment of the vapor retarder is defined by product selection and substrate: **if self-adhered**, prime the deck or substrate with FlintPrime® SA; **if torch-welding** or setting **in hot asphalt**, prime the deck or substrate with FlintPrime.



NOT DRAWN TO SCALE

Vapor retarders minimize the incursion of water vapor rising from the building interior into the roof membrane where it can accumulate and condense. The need for a vapor retarder should be evaluated by a design professional that has knowledge of the structure and local environment.

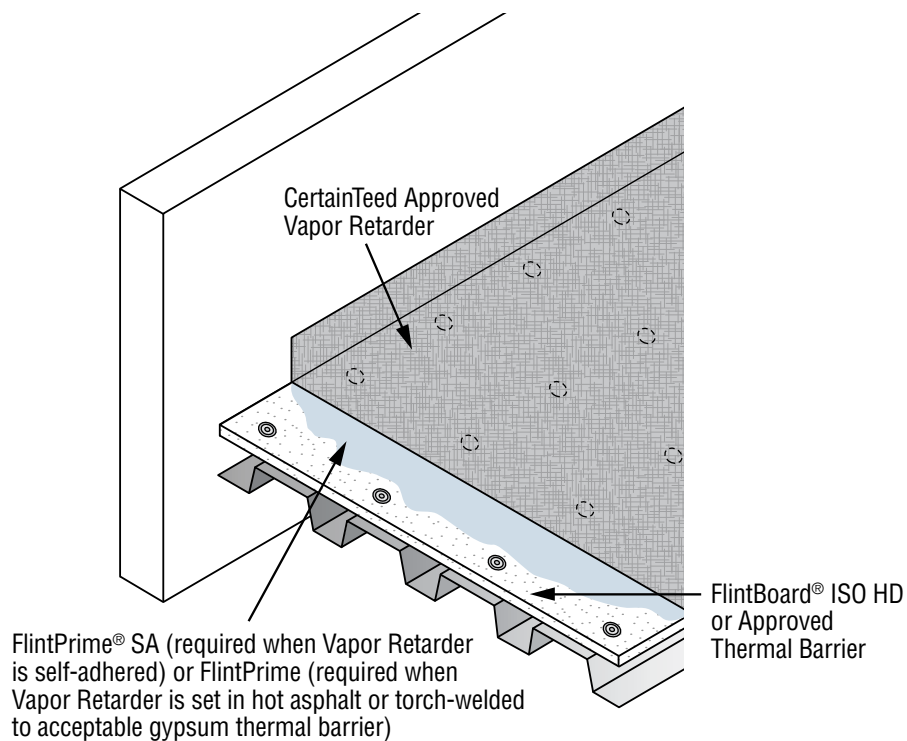
CertainTeed's Black Diamond® Base Sheet

This SBS-modified, self-adhered membrane, can be utilized as a vapor retarder and left exposed up to six months. Alternatively, the following CertainTeed membranes may be utilized as a vapor retarder:

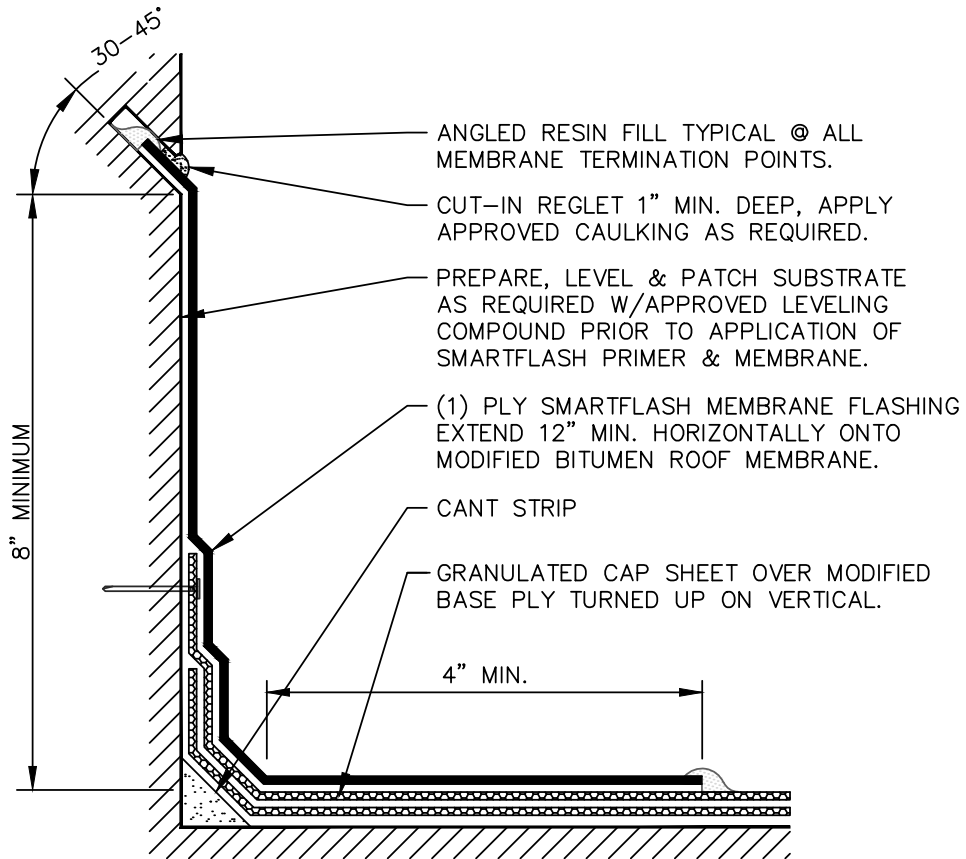
- Flintglas® Ply 4 or Premium Ply 6 (two layers), applied in hot asphalt

- Any Flintlastic® base sheet (surface must be covered within 24 hours or primed prior to application of insulation or waterproofing/weathering roof membrane)
- Any Flintlastic cap sheet

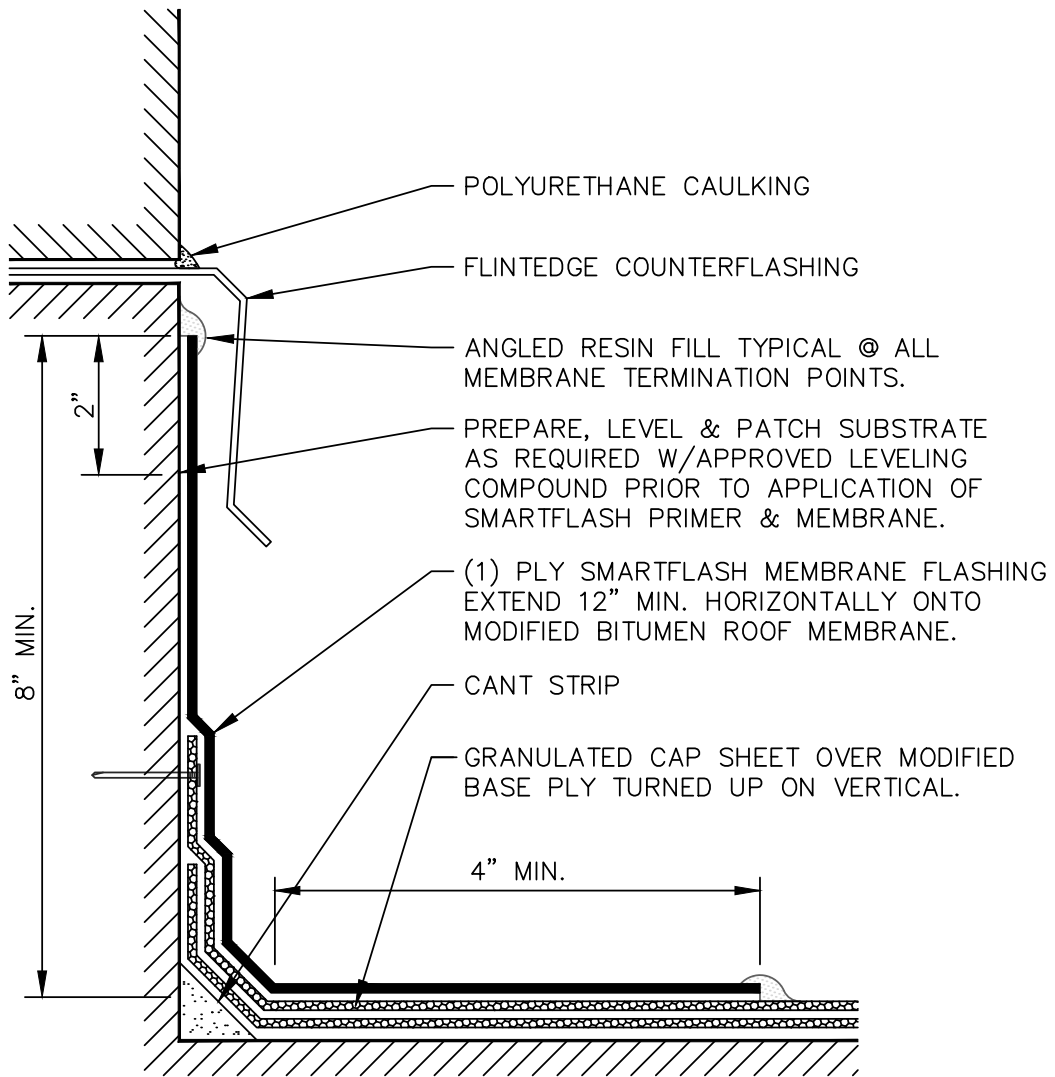
The proper attachment of the vapor retarder is defined by product selection and substrate: **If self-adhered**, prime the deck or substrate with FlintPrime® SA; **if torch-welding or setting in hot asphalt**, prime the deck or substrate with FlintPrime. NOTE: Thermal Barriers such as FlintBoard® ISO HD must be installed over steel roof decks prior to the application of a vapor retarder.



NOT DRAWN TO SCALE



DRAWING NO. CTL-01A FB-1A.DWG	ONE PLY BASE FLASHING W / CUT-IN REGLET				
	REVISION 9/19/13	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO.

ONE PLY BASE FLASHING W/ COUNTERFLASHING

CTL-01B

REVISION

9/19/14

ISSUE DATE

8/1/13

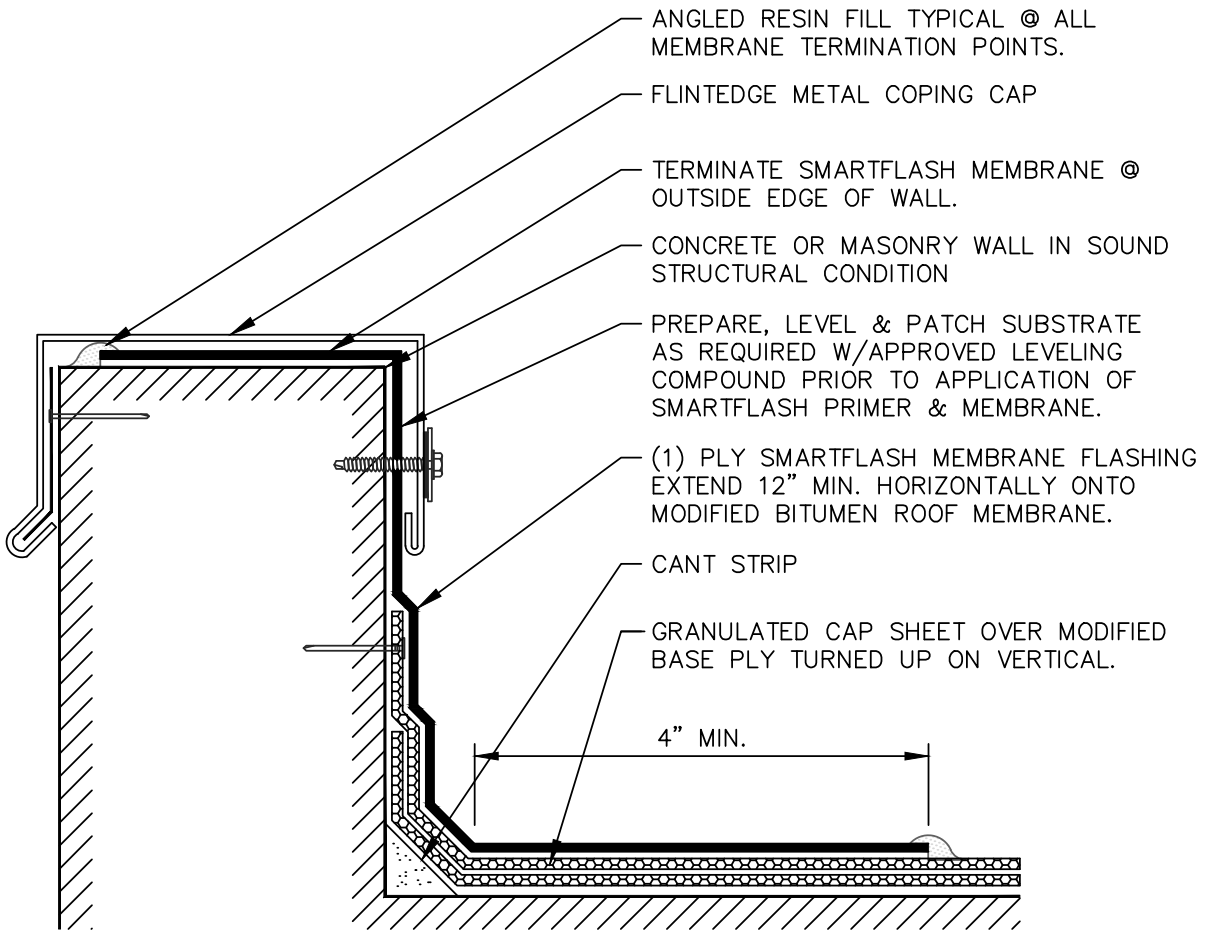
SCALE

N.T.S.

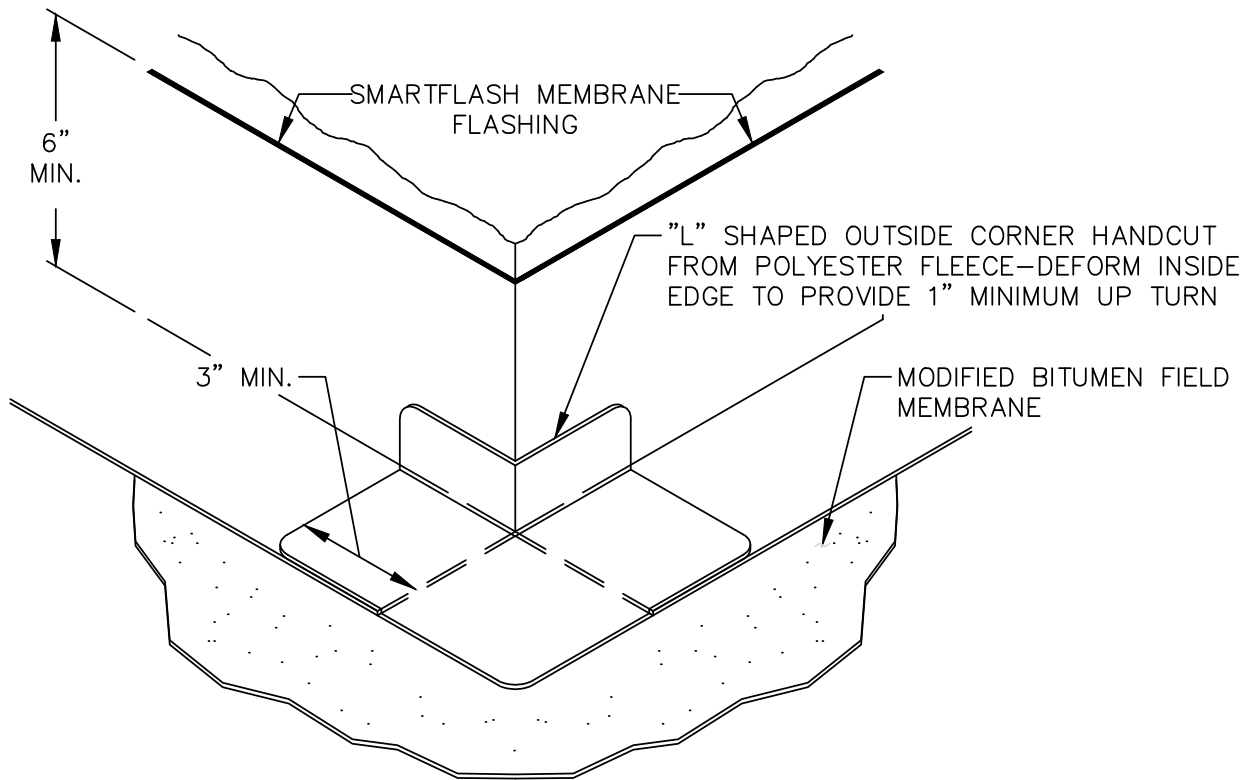
DRAWN BY

CT

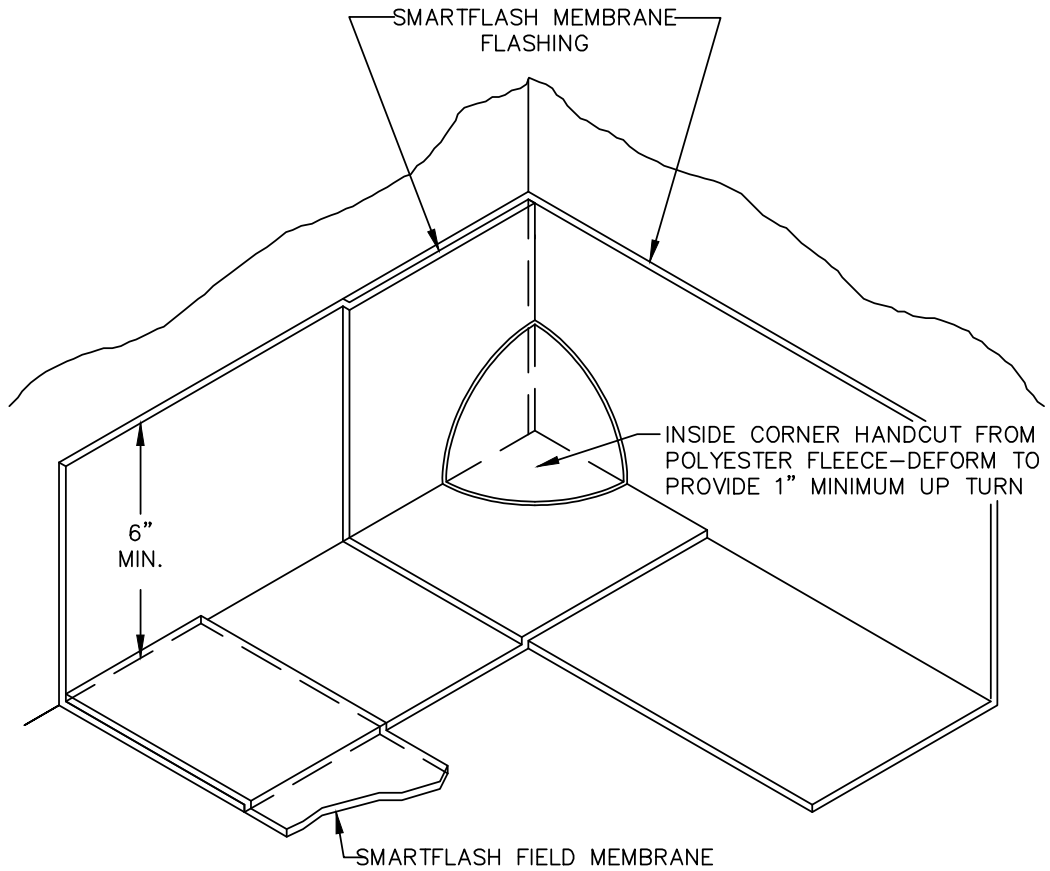
FB-1B.DWG



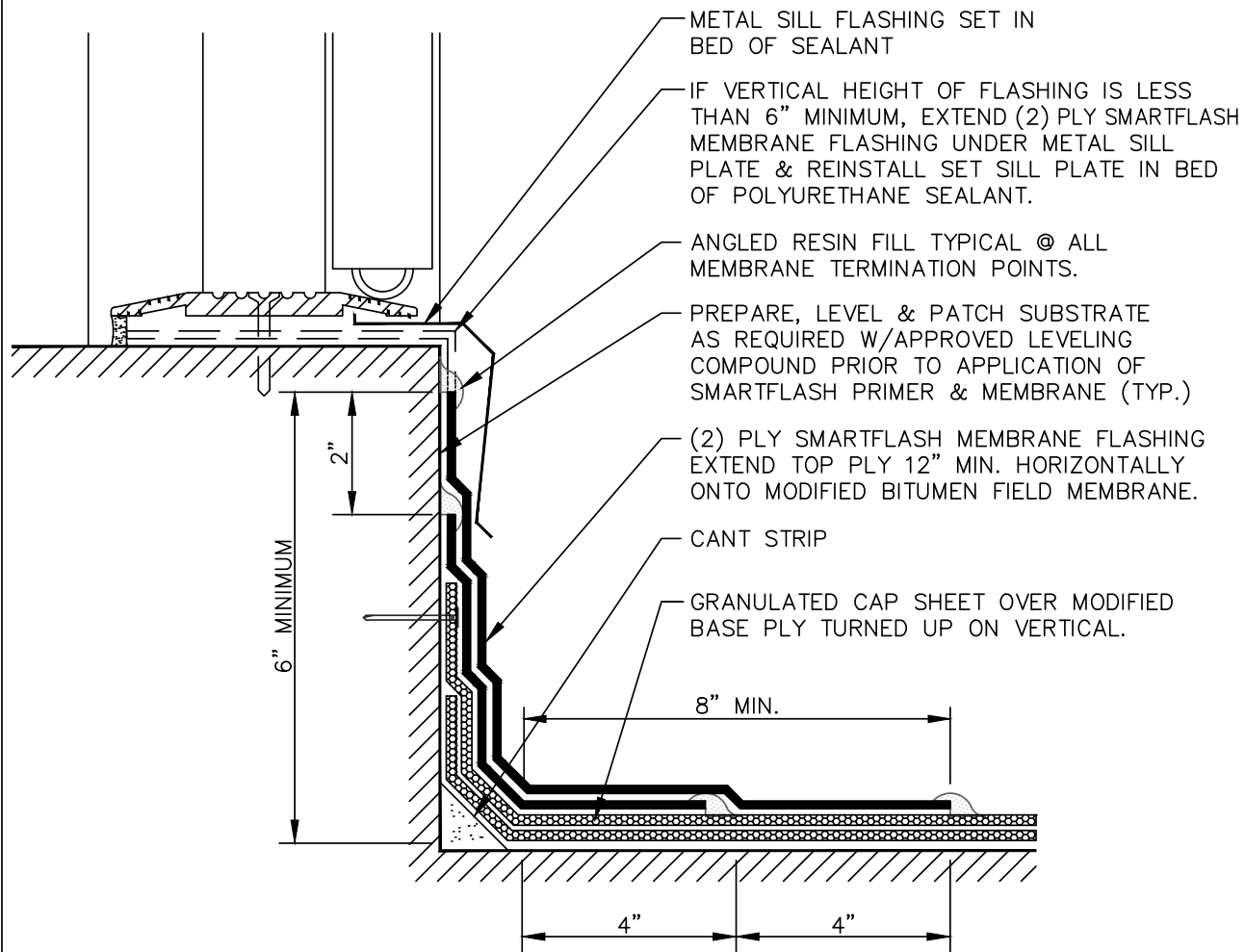
DRAWING NO. CTL-03 FB-3.DWG	PARAPET WALL W/ METAL COPING CAP				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



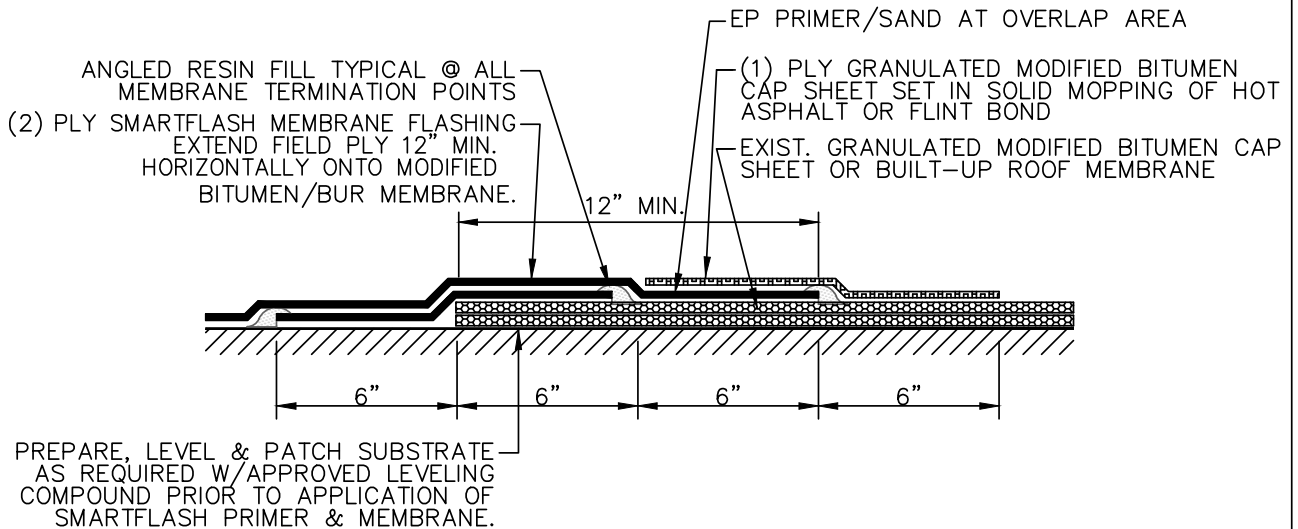
DRAWING NO. CTL-15 FM-1.DWG	FIELD FABRICATED OUTSIDE CORNER FLASHING				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



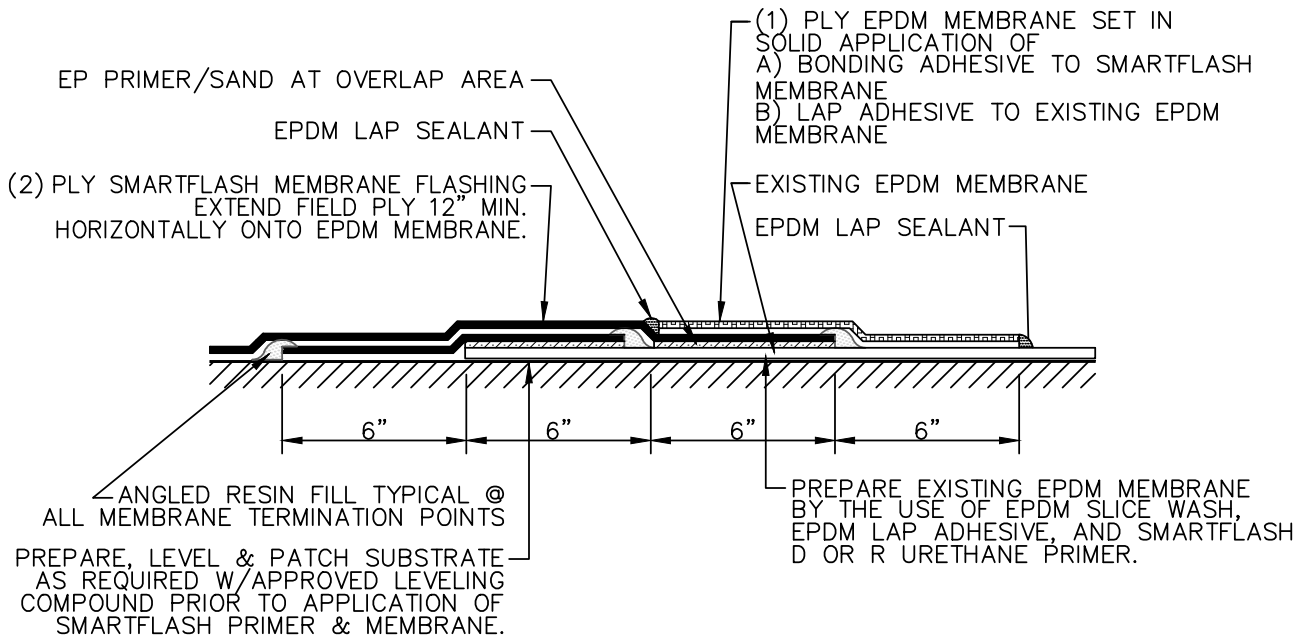
DRAWING NO.	FIELD FABRICATED INSIDE CORNER FLASHING				
CTL-16					REVISION 9/19/14
FM-2.DWG					



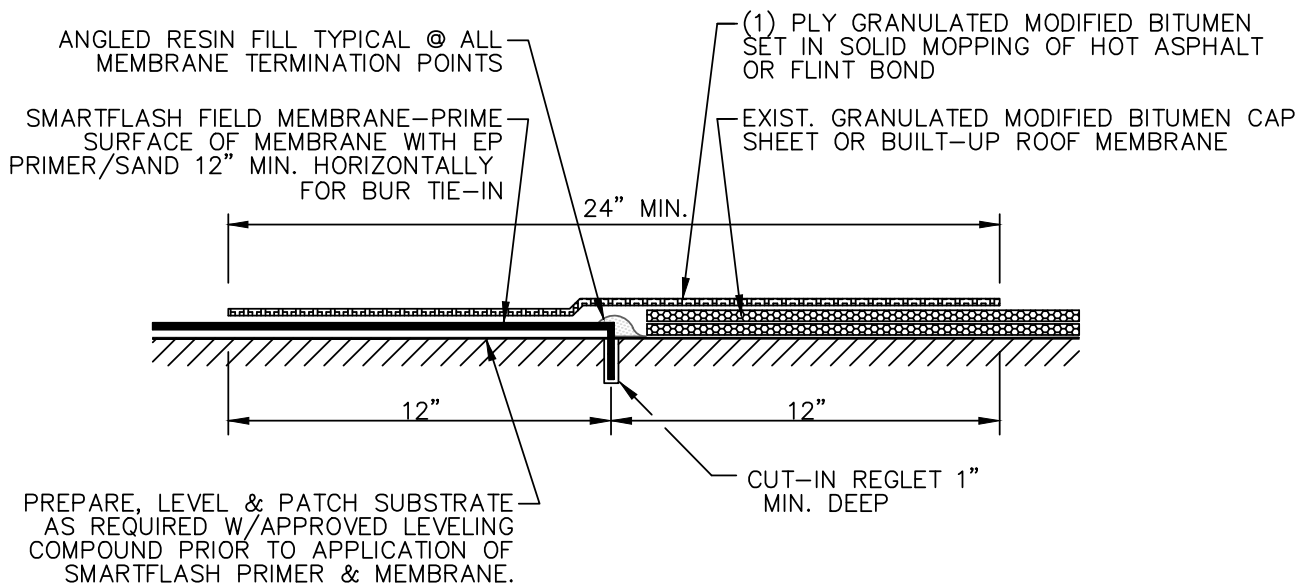
DRAWING NO.	DOOR SILL FLASHING				
CTL-17	REVISION	ISSUE DATE	SCALE	DRAWN BY	
FM-3.DWG	9/19/14	8/1/13	N.T.S.	CT	



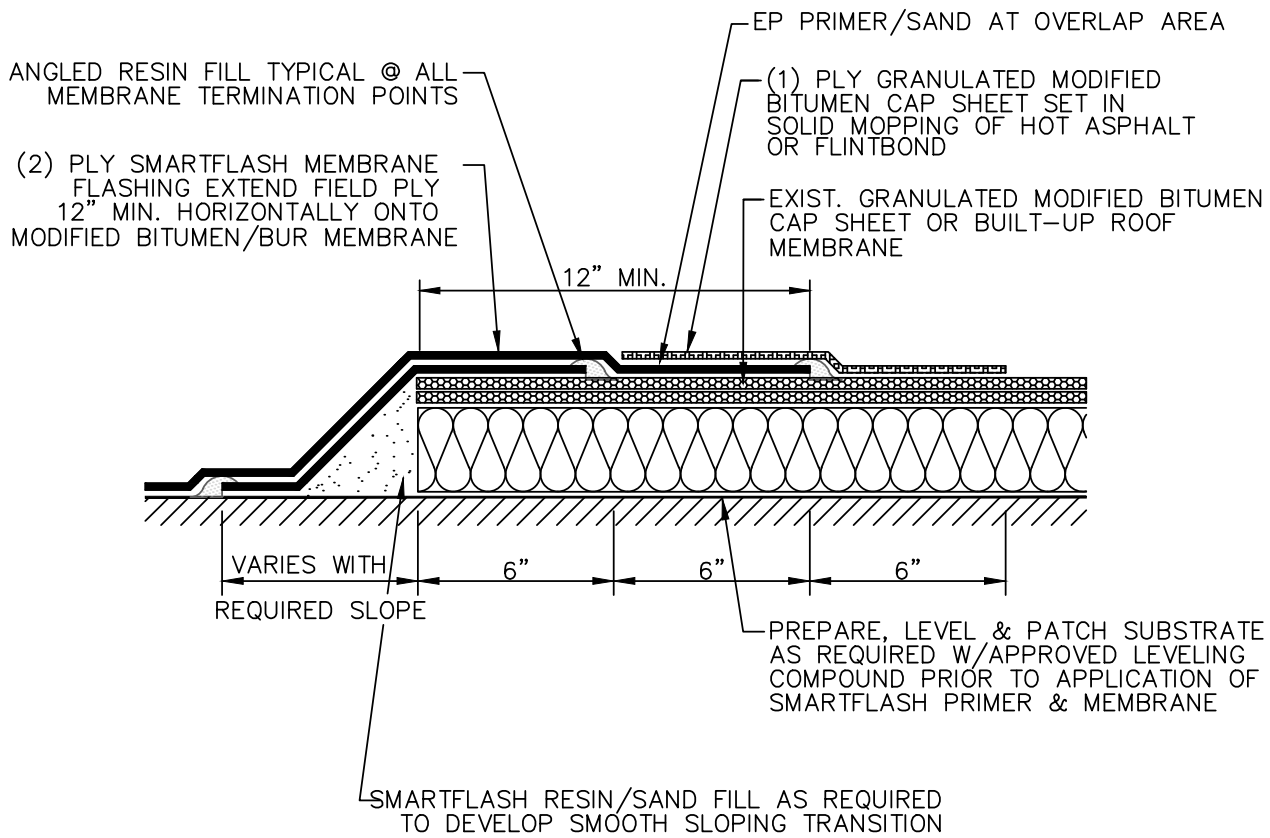
DRAWING NO. CTL-18 FM-4.DWG	TIE-IN TO MODIFIED BITUMEN/BUR MEMBRANE				<hr/>
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO. CTL-18A M-4A.DWG	TIE-IN TO EPDM MEMBRANE				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO. CTL-19 FM-5.DWG	TIE-IN TO MODIFIED BITUMEN/BUR MEMBRANE				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO.

CTL-20

FM-6.DWG

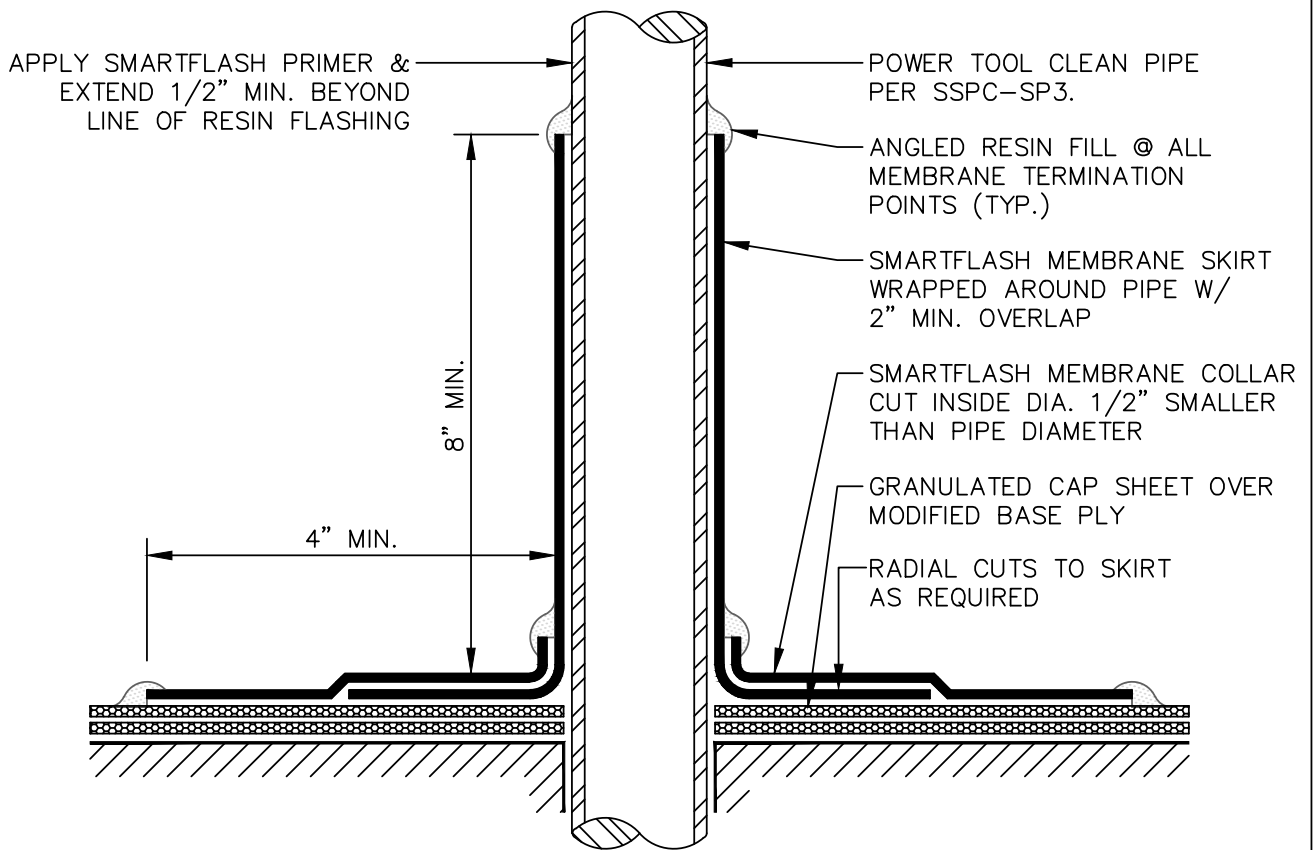
TIE-IN TO MODIFIED BITUMEN/BUR MEMBRANE

REVISION
9/19/14

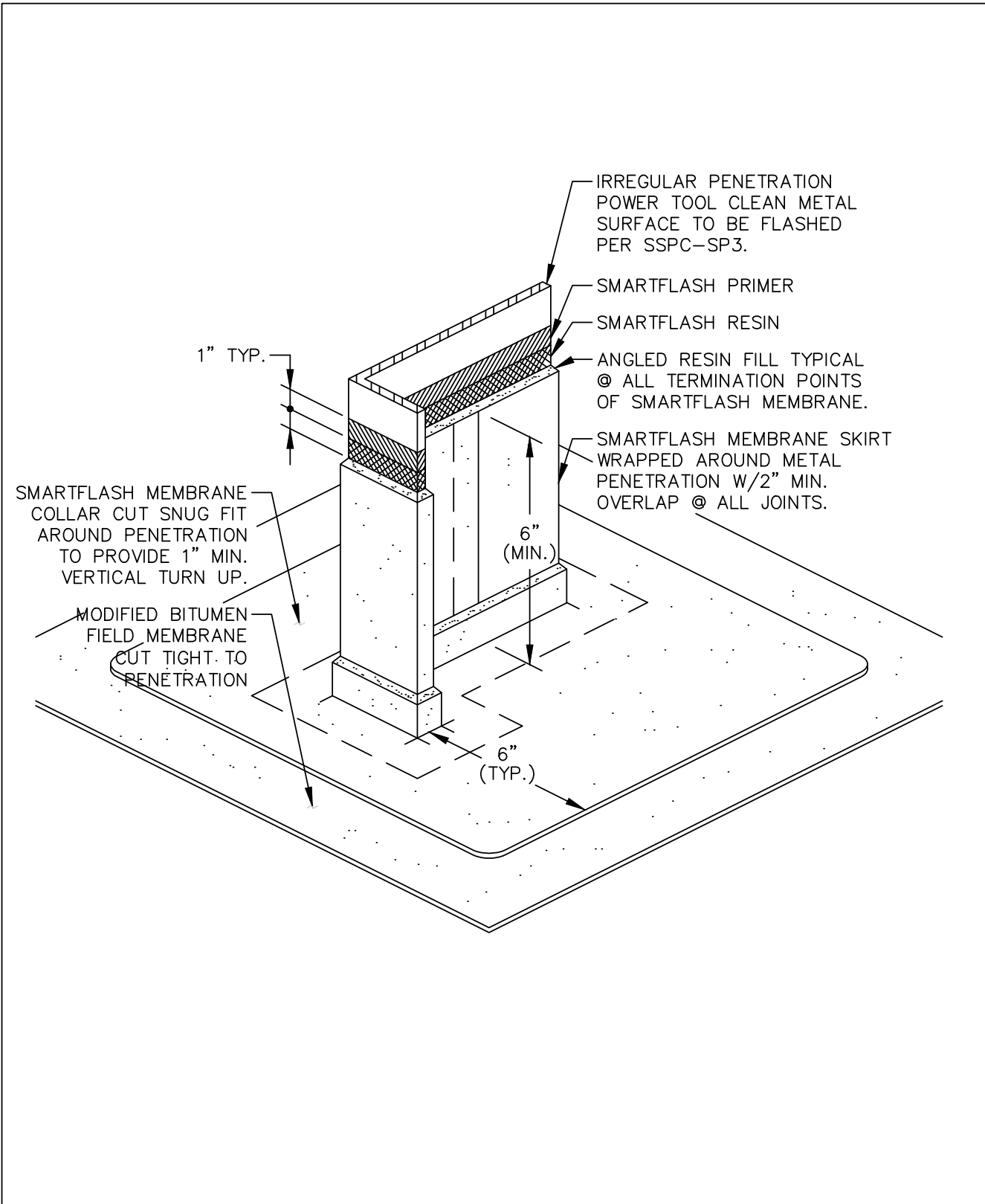
ISSUE DATE
8/1/13

SCALE
N.T.S.

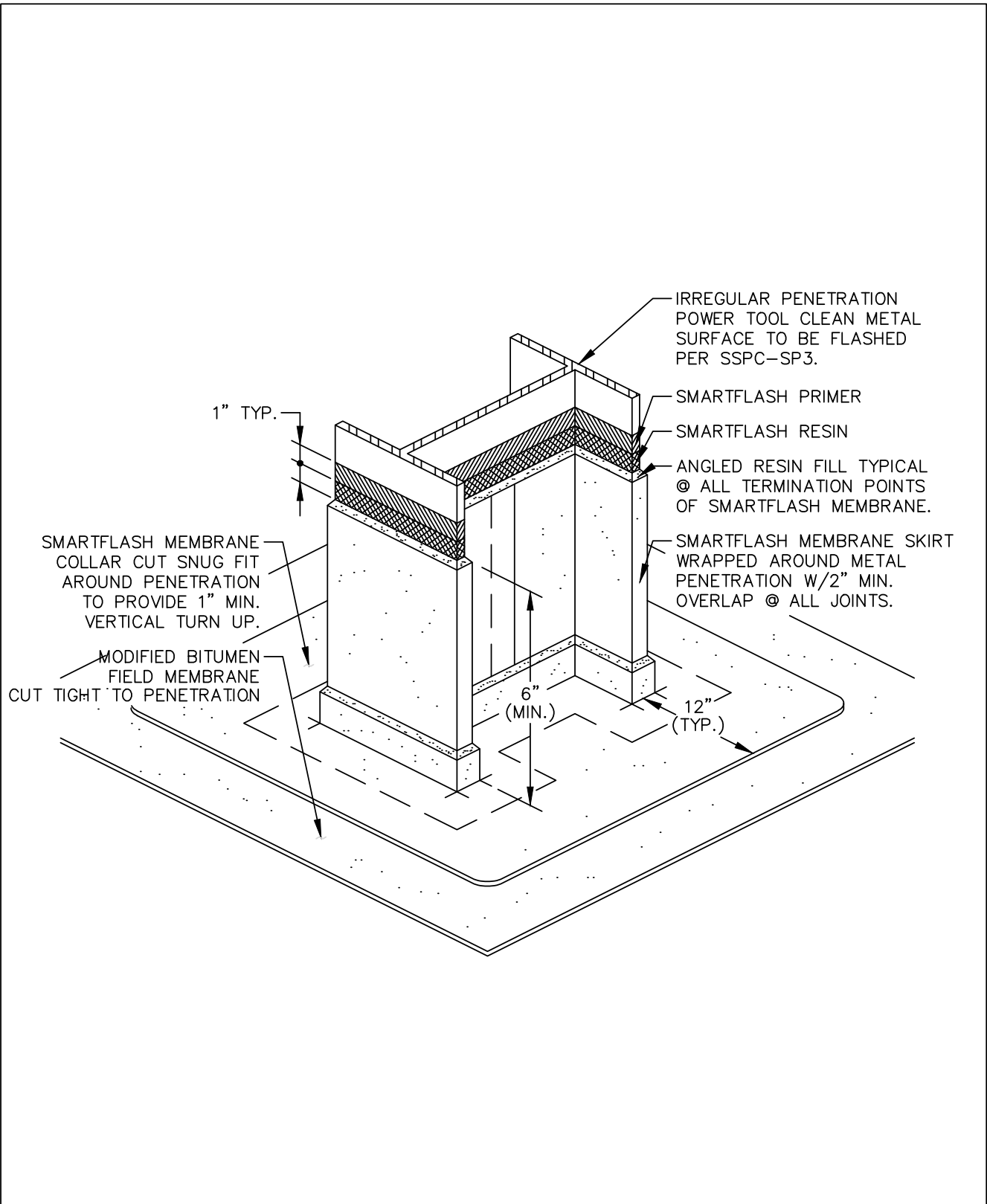
DRAWN BY
CT



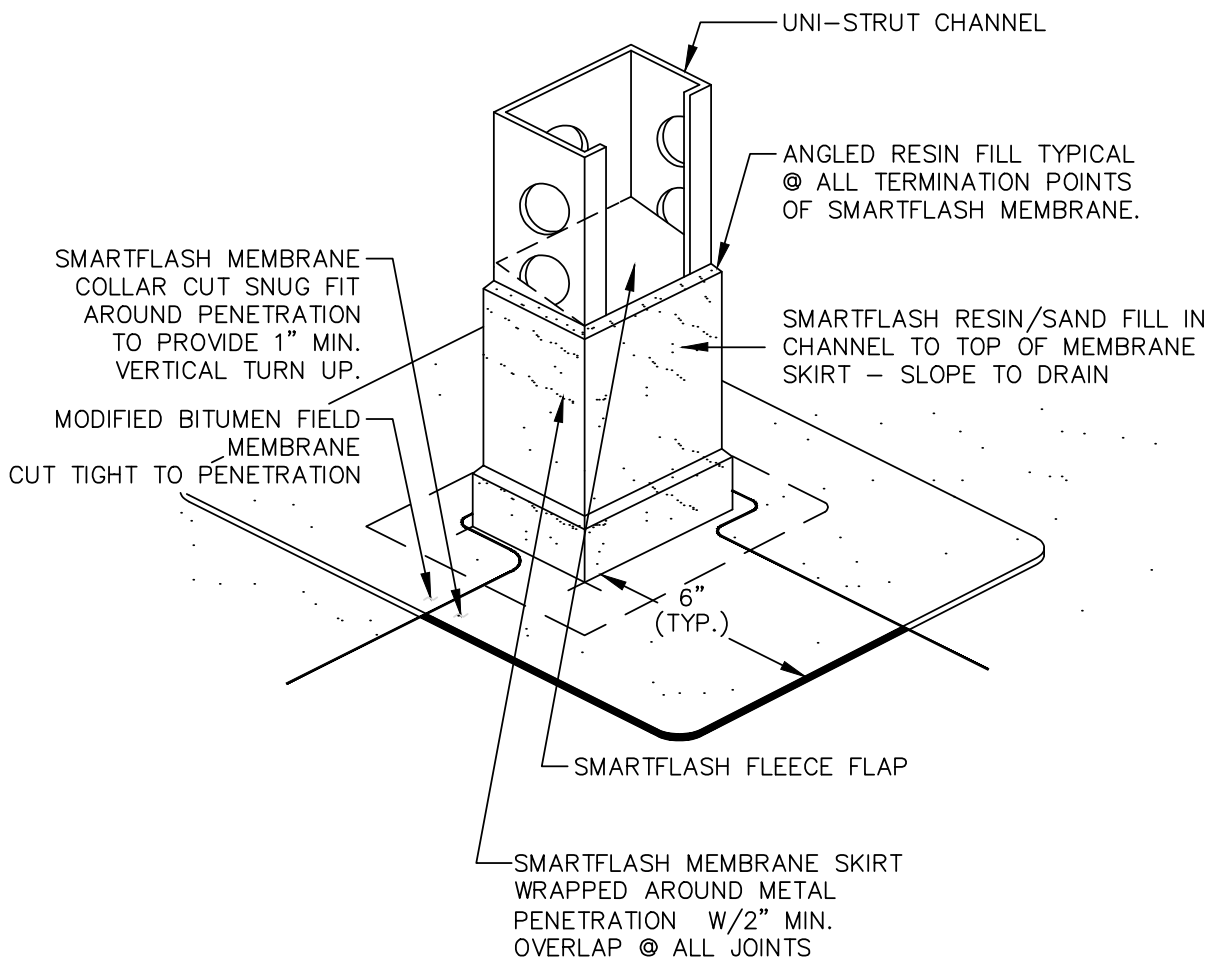
DRAWING NO. CTL-21 FP-1.DWG	FIELD FABRICATED PIPE PENETRATION FLASHING				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO. CTL-23 FP-3.DWG	IRREGULAR PENETRATION ANGLE FLASHING				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO. CTL-24 FP-4.DWG	WIDE FLANGE FLASHING				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



DRAWING NO.

CTL-25

FP-5.DWG

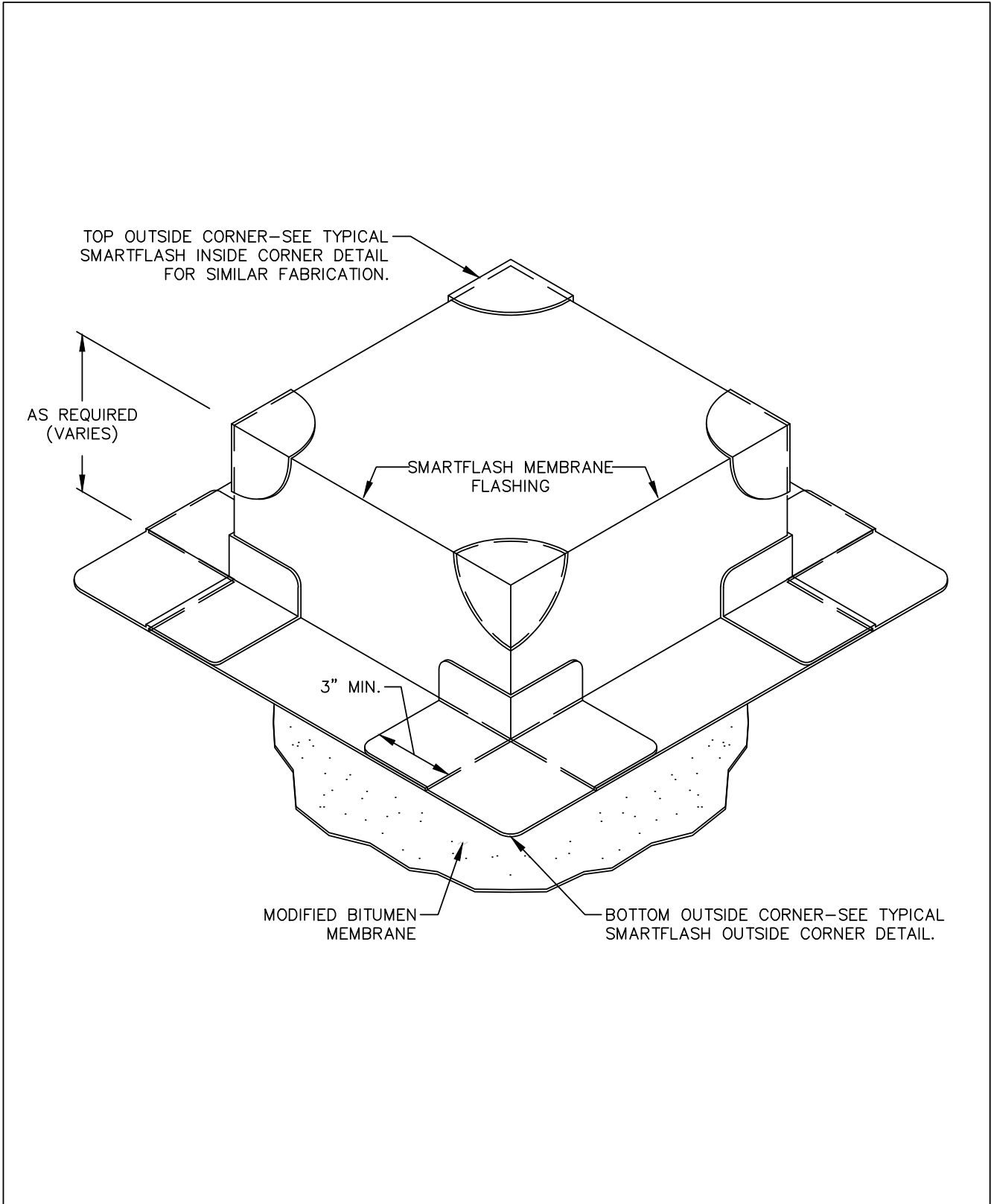
**IRREGULAR PENETRATION
UNI-STRUT CHANNEL FLASHING**

REVISION
9/19/14

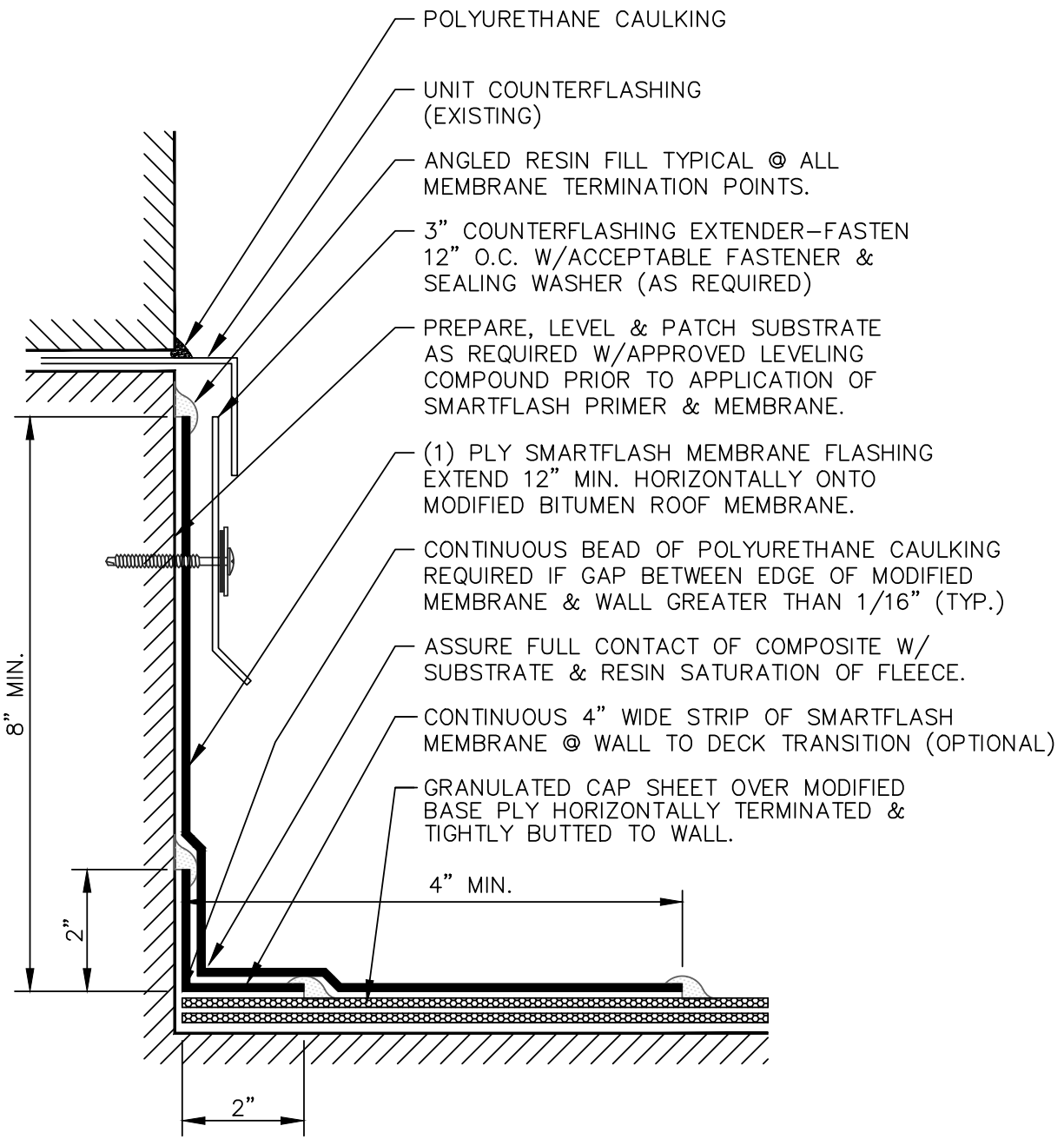
ISSUE DATE
8/1/13

SCALE
N.T.S.

DRAWN BY
CT



DRAWING NO. CTL-27 FP-7.DWG	CURB/PAD ENCAPSULATION FLASHING				
	REVISION 9/19/14	ISSUE DATE 8/1/13	SCALE N.T.S.	DRAWN BY CT	



- POLYURETHANE CAULKING
- UNIT COUNTERFLASHING (EXISTING)
- ANGLED RESIN FILL TYPICAL @ ALL MEMBRANE TERMINATION POINTS.
- 3" COUNTERFLASHING EXTENDER—FASTEN 12" O.C. W/ACCEPTABLE FASTENER & SEALING WASHER (AS REQUIRED)
- PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF SMARTFLASH PRIMER & MEMBRANE.
- (1) PLY SMARTFLASH MEMBRANE FLASHING EXTEND 12" MIN. HORIZONTALLY ONTO MODIFIED BITUMEN ROOF MEMBRANE.
- CONTINUOUS BEAD OF POLYURETHANE CAULKING REQUIRED IF GAP BETWEEN EDGE OF MODIFIED MEMBRANE & WALL GREATER THAN 1/16" (TYP.)
- ASSURE FULL CONTACT OF COMPOSITE W/ SUBSTRATE & RESIN SATURATION OF FLEECE.
- CONTINUOUS 4" WIDE STRIP OF SMARTFLASH MEMBRANE @ WALL TO DECK TRANSITION (OPTIONAL)
- GRANULATED CAP SHEET OVER MODIFIED BASE PLY HORIZONTALLY TERMINATED & TIGHTLY BUTTED TO WALL.

8" MIN.

2"

4" MIN.

2"

DRAWING NO.	ONE PLY CURB FLASHING				
CTL-28 <small>FP-8.DWG</small>	<small>REVISION</small>	<small>ISSUE DATE</small>	<small>SCALE</small>	<small>DRAWN BY</small>	
	9/19/14	8/1/13	N.T.S.	CT	

APPENDIX 2

COMMERCIAL ROOFING FLASHING SPECS

APP Flashing		SBS Flashing		SA Flashing	
Base Sheet ¹	Cap Sheet	Base Sheet ¹	Cap Sheet	Base Sheet ¹	Cap Sheet
() Black Diamond® Base Sheet	() Flintlastic GTA	() Glasbase Base Sheet	() Flintlastic FR Cap 30 ³	() Flintlastic SA MidPly	() Flintlastic SA Cap
() Glasbase™ Base Sheet	() Flintlastic GTA CoolStar®	() Flintlastic Base 20	() Flintlastic FR Cap 30 CoolStar ³	() Flintlastic SA NailBase ⁴	() Flintlastic SA Cap CoolStar
() Flintlastic® STA	() Flintlastic GTA-FR	() Flintlastic Base 20 T	() Flintlastic FR Cap 30 T ³	() PlyBase	() Flintlastic SA Cap FR ⁵
() Flintlastic UltraGlass SA	() Flintlastic GTA-FR CoolStar	() Black Diamond Base Sheet	() Flintlastic FR Cap 30 T CoolStar ³		() Flintlastic SA Cap FR CoolStar ⁵
	() Flintlastic STA ²	() Flintlastic Poly SMS	() Flintlastic FR Dual Cap		
		() Flintlastic Ultra Glass SA	() Flintlastic FR-P		
		() Flintlastic Ultra Poly SMS	() Flintlastic FR-P CoolStar		
			() Flintlastic GMS		
			() Flintlastic GMS CoolStar		
			() Flintlastic GTS-FR		
			() Flintlastic GTS-FR CoolStar		
			() Flintlastic Premium FR-P		
			() Flintlastic Premium FR-P CoolStar		

Notes:

¹ Backer sheet is optional on primed masonry/concrete walls

² Coating required

³ Must use one of the following base sheets: Flintlastic Poly SMS or Flintlastic Ultra Poly SMS

⁴ Wood deck only

⁵ Must use Flintlastic SA MidPly as base sheet

TECHNICAL BULLETINS

TABLE OF CONTENTS

FlintBoard® Roof Insulation Application

Flintlastic® SA Low-Slope Substrate Guidelines

Self-Adhered Flintlastic® SA Cap Sheet Competitive Audit

Self-Adhered Wind Uplift Performance Comparison

Staining

Woodblocking

Wind Uplift Resistance

TECHNICAL BULLETIN

FLINTBOARD® ROOF INSULATION APPLICATION UPDATE

MULTI-LAYERING OF ROOF INSULATION

CertainTeed supports the industry standard recommendation for multiple layers of roof insulation installed with offset (staggered) joints. The purpose of such practice is the elimination of thermal bridging, prevention of thermal loss at insulation joints, reduction of moisture migration into the roof system and reduction of membrane splitting, all benefits provided by multiple layers of roof insulation. In other words, a single-layer application can contribute to loss of design thermal value, moisture migration into the roof system and ridging or splitting of the roof membrane. The benefits of multiple layers of rigid board insulation of all types have been well known for years. Industry authorities, including NRCA and ORNL, have recognized these benefits and many have followed the long-standing recommendation for the use of multiple insulation layers. Unfortunately, reports from the field indicate that single-layered applications are still commonplace. Therefore, we are formalizing our requirements within this technical bulletin.

HOT-APPLIED BUR AND MODIFIED BITUMINOUS ROOF SYSTEMS

Although coverboards are generally required for hot-applied BUR and modified bituminous systems and do create a multi-layered insulation system, multiple layers of FlintBoard® installed with staggered joints beneath the coverboard can further improve the thermal performance of the roof system.

BOTTOM LAYER MECHANICALLY FASTENED WITH SUCCESSIVE LAYERS MOPPED

When a coverboard in an approved assembly is used, any thickness equal to or greater than 1.5" is acceptable. However, thermal efficiency may be increased by the use of multiple layers of FlintBoard. When the total required polyiso insulation thickness is equal to or greater than 3" thickness, the minimum recommended thickness is 1.5" for both the bottom and top layer. Please refer to our published LTTR-value/thickness chart to ensure that the required thermal value is provided.

The joints of each layer must be offset (staggered) to prevent continuous vertical joints through the full insulation thickness.

CONSTRUCTION-GENERATED MOISTURE

Cold weather often dictates that the shell or building envelope be substantially closed before interior work can proceed. In other words, exterior walls and roofs are sometimes constructed before the concrete floor slab is placed or other moisture-producing activities begin. At this point, heaters, which also produce large quantities of moisture, are often employed to provide more comfortable working conditions and to assist in drying the construction. Since the building is basically closed, adequate ventilation is often unavailable to prevent these large quantities of moisture from entering the roof system. In addition, loose-laid or partially attached roof systems may promote air leakage, drawing

TECHNICAL BULLETIN

FLINTBOARD® ROOF INSULATION APPLICATION UPDATE

moisture-laden air up from the building interior. These levels of moisture are well known and well documented. (See NRCA Roofing and Waterproofing Manual, The Manual of Low-Slope Roof Systems [Griffith and Fricklas], and Roofs [Baker]).

In the absence of adequate ventilation, a vapor/air retarder is recommended to limit the movement of moisture into the roof system. ***Therefore, CertainTeed cannot assume responsibility for the performance of FlintBoard roof insulation when installed under these high moisture conditions unless a properly installed, effective vapor/air retarder is present. Location of the vapor/air retarder within the roof system is the responsibility of the designer.***

The inclusion of a vapor/air retarder may affect insulation fastening requirements, wind uplift ratings or other approvals.

Consult the roof system manufacturer for fastening and approval requirements when insulation is placed over a vapor/air retarder.

COVERBOARDS

The use of coverboards (e.g., high-density wood fiber or perlite) over a base layer of insulation creates a multi-layered application and has long been standard practice in hot-applied BUR and modified bituminous systems. Some industry experts, contractor organizations, consultants and specifiers also recommend the use of a coverboard in single-ply applications, especially in fully adhered systems, because it protects the foam/facer interface from traffic and certain adhesive solvents.

The roof system designer or the manufacturer that issues the roof or roof system warranty, should be consulted for coverboard requirements and approvals.

When construction traffic or material storage is expected on the finished roof, CertainTeed **recommends** that a coverboard or other adequate protection, such as plywood, be placed over the finished roof. The placement of an adequate protective layer over the finished roof system should also protect the membrane from damage and is normally recommended by the roof system manufacturer. The coverboard should possess higher compression resistance than the base layer to help distribute loads caused by construction and frequent maintenance traffic. **In the absence of adequate protection, CertainTeed cannot assume responsibility for foam crushing, facer/foam separation or other forms of damage.**

COLD-WEATHER APPLICATIONS

Millions of square feet of roofing have been successfully installed in cold weather, but it does present the contractor with difficult installation conditions that require special care and modified techniques to ensure a trouble-free installation. For example, cold weather may require shorter mop leads to avoid the rapid cooling of asphalt before insulation or membranes are placed. Sealants are also affected by cold weather and should be maintained above the manufacturer's recommended minimum application temperature.

Similarly, materials used in single-ply systems, especially adhesives used in fully adhered systems, are temperature-sensitive, requiring careful attention during application. For example, adhesive drying time (open time) can be significantly increased in the presence of low temperatures and high humidity, conditions that are common during portions of the fall, winter and spring in certain regions of North America. Membranes should also be allowed to relax before they are applied.

TECHNICAL BULLETIN

FLINTBOARD® ROOF INSULATION APPLICATION UPDATE

Improperly applied membrane or adhesive may affect membrane-to-insulation bond strength, as well as facer-to-foam bond strength or foam cohesive strength near the facer in polyiso roof insulation. CertainTeed makes the following recommendations:

First, without fail, the roof membrane system manufacturer's recommendations should be followed carefully, including adhesive application and membrane relaxation guidelines. Consultation with the membrane system manufacturer prior to installation, especially in cold weather, is recommended.

Adhesives should be maintained at temperatures above the membrane manufacturer's recommended minimum temperature at the point of application. Heated on site storage areas and rooftop hot boxes may be necessary.

Materials to receive adhesive application should also be maintained at temperatures warm enough to prevent rapid cooling of the adhesive as it is applied.

Special care should be taken to allow solvents in adhesives to evaporate (flash off) in accordance with the membrane manufacturer's recommendations. The difference in drying rates between shaded and sunlit areas should be considered. When the membrane is placed over insufficiently dried adhesive, the solvents may be trapped and forced downward into the insulation.

CERTAINTEED HEREBY EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING FLINTBOARD, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL CERTAINTEED BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND. SOME STATES DO NOT ALLOW EXCLUSIONS OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.



CertainTeed

CEILING • DECKING • FENCE • GYPSUM • INSULATION • RAILING • ROOFING • SIDING • TRIM

20 Moores Road Malvern, PA 19355 Professional: 800-233-8990 Consumer: 800-782-8777 certainteed.com

TECHNICAL BULLETIN

FLINTLASTIC® SA LOW-SLOPE SUBSTRATE GUIDELINES

Date: 1/1/2020

Supersedes: 4/1/2019

Guidelines for acceptable substrates for CertainTeed LLC's Flintlastic® SA self-adhered SBS modified bitumen roll goods (Flintlastic SA PlyBase, SA MidPly, SA Cap (FR) are as follows:

BASE SHEETS

- Flintlastic SA NailBase
- Flintlastic SA PlyBase
- Flintlastic SA MidPly

INSULATION

- FlintBoard® ISO & ISO Cold (polyisocyanurate insulation)

COVER BOARD

- High density fiberboard (ASTM C208 & 209 - primed boards only)
 - i.e. STRUCTODEK® High Density Fiberboard with Primed Red Coating
- Asphalt coated cover boards
- Gypsum based cover board products (priming may be required):
 - USG Securock® Gypsum-Fiber Roof Board
 - Georgia Pacific DensDeck® Roof Boards:
 - DensDeck® (priming is required)
 - DensDeck® Prime (priming is not required but will enhance adhesion)
 - Zip System® Sheathing

DECKS

- Structural concrete decks* (priming is required)
 - *Lightweight Structural Concrete is subject to greater moisture content and not acceptable for direct adherence of Flintlastic SA self-adhering products.
- Wood¹ (priming is required)
 - Approved wood types:
 - APA Rated Exterior Grade Plywood
 - APA Rated Exterior Grade Oriented Strand Board (OSB)
 - Precautions:
 - Direct adhesion is not permitted by code in Miami-Dade County (check your local building code)
 - At the end of the roofing membrane's life, roofing membranes directly adhered to wood roof decks will require replacement of the deck.

If a substrate is not listed above it is not acceptable to install Flintlastic SA products to it and will require the installation of an acceptable substrate first. Consult CertainTeed's Commercial Roofing Technical Services Department with any questions.

Substrates shall be designed and sufficiently rigid to properly support and secure the new roof assembly and shall have proper slope to acceptable water collection devices (i.e. drains, scuppers, gutters, etc). CertainTeed requires a minimum ¼"/12" slope in roof membrane substrates/decks. All substrate surfaces shall be dry, smooth, clean and free of debris, sharp projections and depressions. Any deck openings shall be fully supported on all sides. All penetrations through the deck shall be completed prior to starting the application of the roof system. Installation of conduits or piping above the deck and under the roof membrane is not acceptable and shall not be warranted by CertainTeed.

Surfaces requiring priming should be primed with CertainTeed FlintPrime® or FlintPrime® SA products. CertainTeed FlintBond® is required for use as indicated in the CertainTeed Flintlastic Applicator Manual.

¹Please refer to reverse side for CertainTeed Flintlastic SA Limited Warranties on wood substrates.

TECHNICAL BULLETIN

FLINTLASTIC® SA LOW-SLOPE SUBSTRATE GUIDELINES

Date: 1/1/2020

Supersedes: 4/1/2019

FLINTLASTIC SA REFERENCE WARRANTY DURATIONS | WOOD ROOF DECKS

Flintlastic SA warranty coverage is offered in varied durations dependent on the type of building, size of project and roof membrane system design.

	Commercial Buildings - Building Owners				Residential Homes - Property Owner/ Occupant ¹			
	Limited Warranty on Materials	Limited Warranty on Systems	NDL Limited Warranty	Full System NDL Limited Warranty	Sure Start	Sure Start Plus, 3 Star	Sure Start Plus, 4 Star	Sure Start Plus, 5 Star
Roof Membrane								
Single-Ply: Flintlastic SA Cap (FR)	12 ²	--	--	--	10 ³	--	--	--
Two-Ply: Flintlastic SA NailBase Flintlastic SA Cap (FR) (CoolStar)	--	12						
Two-Ply (with PlyBase): Flintlastic SA PlyBase Flintlastic SA Cap (FR) (CoolStar)	--	15	--	--	15 ⁴			
Two-Ply (with MidPly): Flintlastic SA MidPly Flintlastic SA Cap (FR) (CoolStar)	--	20	--	--	--	20 ⁴		
Three-Ply (with PlyBase) Flintlastic SA NailBase Flintlastic SA PlyBase Flintlastic SA Cap (FR) (CoolStar)	--	15			--	15 ⁴		
Three-Ply (with MidPly) Flintlastic SA NailBase Flintlastic SA MidPly Flintlastic SA Cap (FR) (CoolStar)	--	20			--	20 ⁴		

¹ A Property Owner/Occupant must be responsible for the roof in order to qualify for a CertainTeed Residential Warranty.

² Warranty is intended for repair projects over existing roof membranes.

³ Coverage is limited to twenty (20) squares.

⁴ Coverage is limited to ten (10) squares.

TECHNICAL BULLETIN

FLINTLASTIC® SA LOW-SLOPE SUBSTRATE GUIDELINES

Date: 1/1/2020

Supersedes: 4/1/2019

WARRANTY COVERAGE | FLINTLASTIC SA | WOOD ROOF DECKS

	Commercial Buildings				Residential Homes			
	Limited Warranty on Materials ¹	Limited Warranty on Systems	NDL Limited Warranty ²	Full System NDL Limited Warranty ²	Sure Start ¹	Sure Start Plus, 3 Star	Sure Start Plus, 4 Star	Sure Start Plus, 5 Star
Covers Leaks Caused By:								
Manufacturing Defects:								
CT Roll Goods	x	x	x	x	x	x	x	x
CT Low-Slope Accessories			x	x		x	x	x
CT-Approved Low-Slope Accessories				x		x	x	x
Workmanship			x	x				x
Includes:								
Repair/Replacement – Materials (as Covered)	x	x	x	x	x	x ³	x ³	x ³
Repair/Replacement Labor		x ⁴	x	x		x	x	x
Tear-off		x ⁴	x	x		x	x	x
Disposal		x ⁴	x	x			x	x
Workmanship		x ⁴	x	x				x

¹ Coverage is honored when Flintlastic SA products are self-adhered directly to a wood deck. Warranty coverage does not extend to membranes applied to non-ventilated or inadequately ventilated roof deck systems as determined by CertainTeed.

² Flintlastic SA NailBase, a nailable anchor sheet, must be applied as the first layer; self-adhering to a wood deck is not warranted.

³ Coverage duration is roof system dependent

⁴ Included only during year one (1) of the warranty

TECHNICAL BULLETIN

SELF-ADHERED FLINTLASTIC® SA CAP SHEET COMPETITIVE AUDIT

The objective of an audit is to monitor the products of CertainTeed as well as those of our competitors to determine how well they meet standards of performance set by independent standard-setting authorities such as ASTM (American Society for Testing and Materials). CertainTeed also uses additional tests such as weight, product composition and other comparisons.

In this audit we included CertainTeed's Flintlastic SA Cap, an SBS-modified, polyester reinforced, self-adhered cap sheet and like-products produced by other leading manufacturers. All tests were performed by CertainTeed in a laboratory setting using standard scientific protocol.

Results in the table on right demonstrate:

- Only CertainTeed and one other listed manufacturer are below the ASTM maximum for granule loss.
- Only CertainTeed and one other listed manufacturer are above the ASTM minimum for tensile strength.
- CertainTeed's Flintlastic SA Cap is competitive with or surpasses all other tested products based on the combination of Adhesion, Reinforcement and Backcoating.

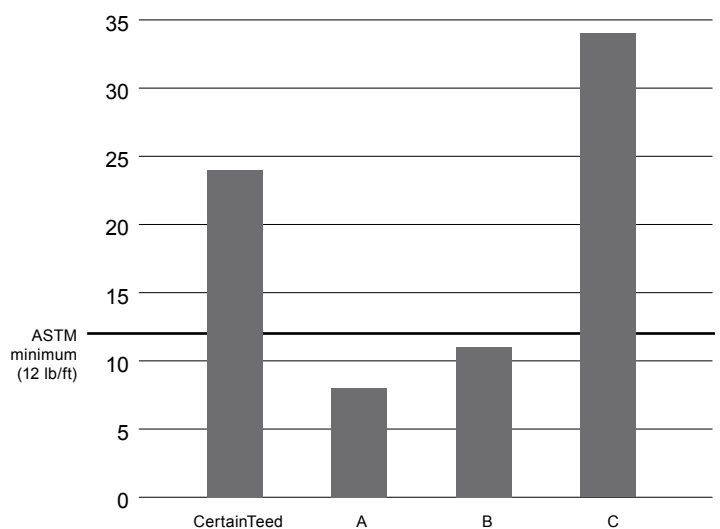
Competitive Audit Summary

	CertainTeed	A	B	C
Roll Weight (lb/sq)	87	91	81	70
Reinforcement	Polyester with fiber-glass scrim	Polyester with fiber-glass strands	Polyester with fiber-glass strands	Fiberglass
Backcoating Asphalt Content (lb/sq)	18	13	15	14
Filler Content in Backcoating (%)	20	24	15	0
Adhesion to Plywood (lb/ft)	24	8	11	34
Adhesion to Base Sheet (lb/ft)	55	42	45	14
Granule Loss (grams)	1.4	3.4	4.9	0.7
Tensile Strength, MD/CD (lb/in)	78/55	49/44	61/40	67/53
Compound Stability (°F)	215	215	215	215

Adhesive strength is the most critical performance criterion for self-adhering membranes. Greater adhesion values are critical to a leak-free roof system. Self-adhering membranes must rely on the aggressiveness of the self-adhering layer to form strong bonds, unlike hot mop and torch-down applications, which utilize molten asphalt to bond layers. The standard industry test for adhesion is called "Adhesion to Plywood," found in ASTM D1970- Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection. D1970 specifies that the minimum adhesion allowable for self-adhering underlayments is 12 lb/ft at room temperature. [See Adhesion to Plywood]

It is important to note that 12 lb/ft is the **minimum** for an **underlayment**. Products like self-adhering cap sheets need to be held to a higher standard since they are not protected by additional materials such as shingles. A performance criterion has not yet been added to D6162, D6163 and D6164 (low slope, SBS modified standard specifications), but an ASTM committee is addressing the issue.

Adhesion to Plywood (lb/ft)



TECHNICAL BULLETIN

SELF-ADHERED FLINTLASTIC® SA CAP SHEET COMPETITIVE AUDIT

Only CertainTeed and one competitor are currently able to meet the criteria for underlayments. (NOTE: Adhesion criteria for cap will likely be even more stringent.)

Until a standard test and specifications are created, CertainTeed will continue testing adhesion of self-adhering cap sheets to the appropriate base sheet substrate. [See Adhesion to Base Sheet]

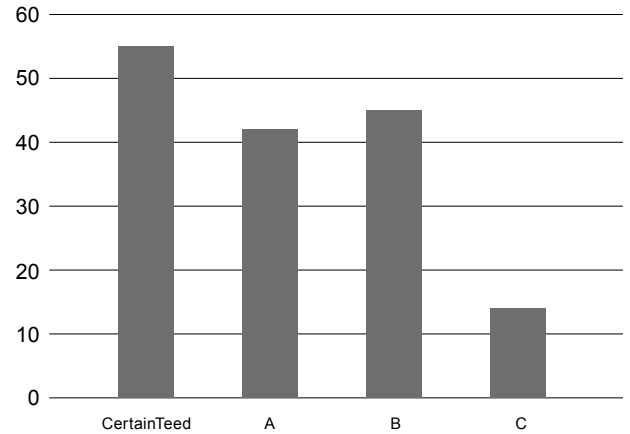
Backcoating thickness is usually associated with adhesive strength and helps provide a water-tight seal. A product may *feel* like it has a very aggressive tack, but if the amount of asphalt compound is too low the membrane will have a difficult time forming a strong bond with its substrate. A good "cushiony" layer of self-adhering compound helps to grab and hold onto uneven surfaces and surface imperfections. [See Backcoating Asphalt Content]

Filler content is inversely related to adhesive strength. A membrane may appear to have a thick application of self-adhering compound, but if there is too much filler added to the formulation then adhesion is lost.

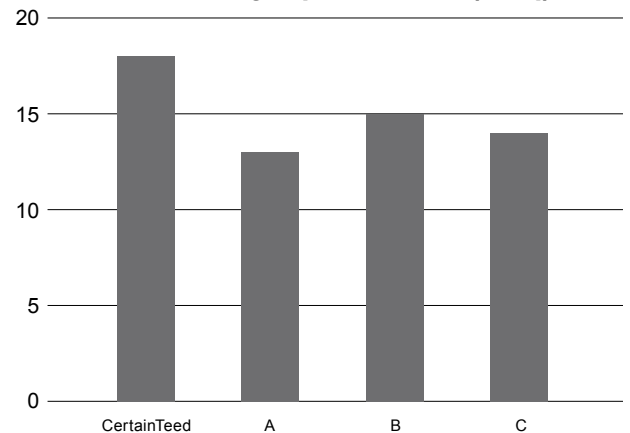
Of the four products tested, three use polyester mat reinforced with fiberglass scrim or fiberglass strands while two use only fiberglass mat as a **reinforcement**. Polyester reinforced membranes are tough, puncture resistant, flexible and allow for deck movement, which is extremely important for large low-sloped roofs. Fiberglass scrim is used to add dimensional stability and strength. CertainTeed Flintlastic SA uses a polyester mat reinforced with fiberglass scrim.

The industry standard maximum **granule loss** for polymer-modified membranes is 2.0 grams. The test method can be found in ASTM D4977 - Test Method for Granule Adhesion to Mineral Surfaced Roofing by Abrasion. Granule loss below 2.0 grams is difficult to achieve on self-adhering cap sheets. The soft compound that makes the product self-adhering will also cause the product to become soft at high temperatures. This can increase granule loss and surface scuffing. CertainTeed avoids this problem by utilizing dual compound technology, with a more temperature-resistant compound under the granule surface while still maintaining an aggressive self-adhering bottom layer. [See Granule Loss]

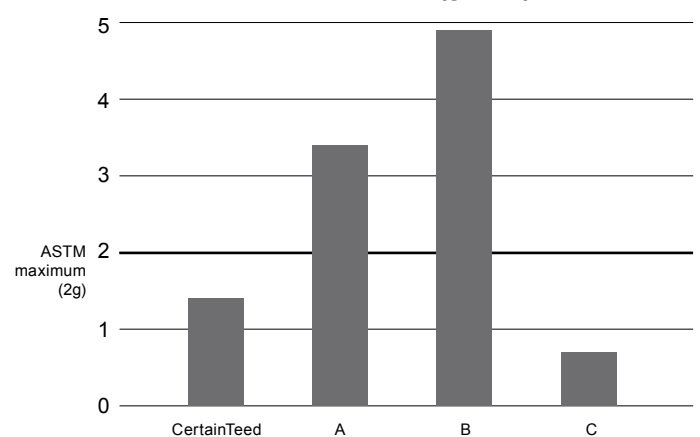
Adhesion to Base Sheet (lb/ft)



Backcoating Asphalt Content (lb/sq)



Granule Loss (grams)

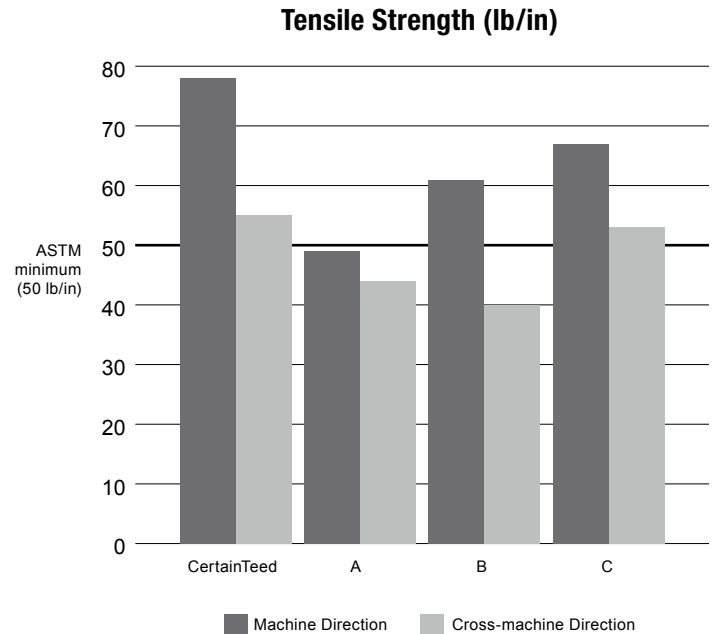


TECHNICAL BULLETIN

SELF-ADHERED FLINTLASTIC® SA CAP SHEET COMPETITIVE AUDIT

Tensile strength is an important measurement for any polymer modified bituminous sheet. It measures the ability of the membrane to resist breaking under tension and is measured in force per unit area. This test method can be found in ASTM D5147 - Standard Test Method for Sampling and Testing Modified Bituminous Sheet Material. [See Tensile Strength]

Compound stability is a high temperature flow test in which sections of membrane are hung vertically in a forced air oven at high temperatures. This test method can be found in ASTM D5147 - Standard Test Method for Sampling and Testing Modified Bituminous Sheet Material. Although ASTM minimum values are yet to be determined for self-adhering products, it is important to note that CertainTeed's self-adhering product line resists flow at temperatures exceeding 215°F (the passing temperature of an SBS modified product). This means that our products are well suited for both cooler temperatures (aggressive tack at room temperature) and high temperatures (compound will not flow or lose granules).



CertainTeed

CEILINGS • DECKING • FENCE • GYPSUM • INSULATION • RAILING • ROOFING • SIDING • TRIM

20 Moores Road Malvern, PA 19355 Professional: 800-233-8990 Consumer: 800-782-8777 certainteed.com

TECHNICAL BULLETIN

SELF-ADHERED WIND UPLIFT PERFORMANCE COMPARISON

Date: July 2019

As reported by the Asphalt Roofing Manufacturers Association (ARMA), self-adhered products are the fastest growing segment within the bituminous sector, growing an average of 9.6% year over year for the last three years. Factors driving this growth include application efficiency, applicator learning curve, elimination of flames, fumes, and the operational costs associated with torches and kettles.

Self-adhered bituminous membranes are manufactured with a bottom surface release film. The film is removed in the field, exposing factory-applied pressure sensitive adhesive which functions as the bonding agent for the roof system. Adhesive formulations are proprietary to manufacturers; bond strength and durability varies by brand. Flintlastic SA, CertainTeed's low-slope, self-adhered modified bitumen product line, has been successfully in service since 2003.

As industry acceptance and demand continues to increase, CertainTeed frequently fields requests to compare the bond and performance of our torch-applied and hot-asphalt applied roof systems to our self-adhered roof systems. Third-party quantification of a roof system's wind uplift resistance is a practical demonstration of bond strength. The wind uplift resistance of the following systems, as reported in Florida Building Code Report FL-2533-R21, illustrates equivalent or better performance across CertainTeed torch-applied and self-adhered multi-layer membranes:

Deck Type	Self-Adhered System	MDP (psf)	Torch/Hot Applied System	MDP (psf)
Wood	W-1	-45.0	W-8	-45.0
Wood	W-2	-52.5	W-9	-52.5
Wood	W-3	-52.5	W-10	-52.5
Steel	S-1	-37.5	S-8	-37.5
Steel	S-2	-45.0	S-11	-45.0
Steel	S-24	-37.5	S-31 (Hybrid)	-37.5
Concrete	C-8	-120.0	C-58 (SBS TA)	-120.0
Concrete	C-99	-630.0	C-106 (APP TA)	-630.0
Concrete	C-99	-630.0	C-107 (SBS TA)	-630.0
Concrete	C-99	-630.0	C-108 (HA Only)	-630.0
LWC	LWC-3	-150.0	LWC-9	-150.0
LWC	LWC-40	-60.0	LWC-54	-60.0
GWC	CWF-1	-45.0	CWF-4	-45.0
Gypsum	G-3	-135.0	G-10	-135.0
Recover	R-8	-157.5	R-43 (Hybrid System)	-157.5

For full report please visit CertainTeed.com: <https://www.certainteed.com/resources/FL-2533-FlintlasticModBit.pdf>

TECHNICAL BULLETIN

STAINING

Date: 10/15/2019

Supersedes: 7/11/2013

Staining of portions of the exposed mineral surface of modified bitumen reflective roof membranes may occur over a period of time during storage when these cap sheet membranes are stored as tightly wound rolls. Small amounts of plasticizing oils in the polymer modified bitumen could leach to the surface, or minerals used to coat the underside of the roll may transfer from the underside of the membrane to portions of the abutting exposed face of the membrane, resulting in discoloration. In some cases, staining can take the form of dark lines that correspond to the straps used to contain each roll prior to installation. Staining caused by mineral dust or oils migrating from the asphalt in the membrane is not permanent and will weather out, however the process to reach the perfect white surface may take up to three (3) months depending upon the time of year and the amount of rainfall the roof surface receives. In some geographical regions where there is little to no rainfall, the process may take longer.

Migration of oils and mineral coatings from the underside to the exposed face of the membrane is a natural process that is triggered by heat and pressure and does not constitute a manufacturing defect. CertainTeed's many years of experience in the roofing industry and our laboratory research tells us that this type of staining will be degraded by the ultraviolet rays of the sun to water soluble components and then disappear after being washed away by rainfall.

We request that customers who observe this phenomenon allow their new roofing membranes to weather for a period of 90 days; 6 months in areas where there is little rainfall. If after this time the staining persists or shows no signs of lightening, CertainTeed will remedy the condition as stipulated in our limited warranty. Fortunately, our experience has been that the vast majority of customers notice an elimination of the stain well before the 90-day period is up.



CertainTeed

CEILING • DECKING • FENCE • GYPSUM • INSULATION • RAILING • ROOFING • SIDING • TRIM

20 Moores Road Malvern, PA 19355 Professional: 800-233-8990 Consumer: 800-782-8777 certainteed.com

© 01/20 CertainTeed, Printed in the USA

TECHNICAL BULLETIN

WOODBLOCKING

FM Global Property Loss Prevention Data Sheet 1-49 (LPDS 1-49) states:

“The majority of roof covering failures resulting from windstorms involve improperly designed or constructed perimeter flashings.”¹

The perimeter of the roof assembly sustains the highest wind loads during wind events. The proper application of woodblocking will serve to strengthen the roof system by providing a strong attachment base for the connection of the roof assembly and metal flashings.

Both adhered and systems bonded to mechanically attached base sheets have the advantage of physical bonding or attachment to the deck. However, all of these roof assemblies depend on the strength and attachment of the woodblocking to resist wind loads placed on flashings and perimeter membranes. The loss of attachment from the woodblocking can potentially mean the loss of the roof system, at least at perimeters and corners.

In general, there are three types of loads that perimeter woodblocking anchors must withstand when securing a roof system and perimeter flashings (see Figure 1):

- Tensile Load: applied parallel to the axis of the anchor;
- Shear Load: applied perpendicular to the axis of the anchor; and
- Oblique Load: Also known as a combination load, it applies stress with the qualities of both a tensile and a shear load.

Load conditions at the perimeter vary depending on wind speed, perimeter conditions, and substrate material.

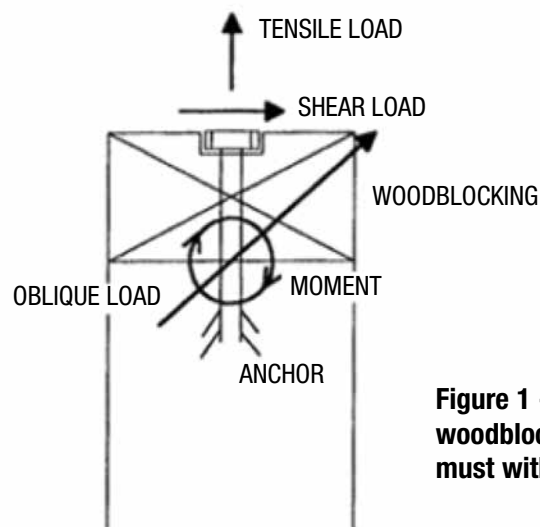


Figure 1 - Loads which woodblocking anchors must withstand

¹ Factory Mutual Global Loss Prevention Data Sheet 1-49: Perimeter Flashings.

TECHNICAL BULLETIN

WOODBLOCKING

Following recommended guidelines for woodblocking attachment is critical in preventing catastrophic damage caused by poorly maintained or improperly installed roof components. If installed correctly, perimeter woodblocking can play a crucial role in strengthening and protecting a building's roof system, no matter what design or material is being utilized.

RECOMMENDATIONS FOR SECURING PERIMETER WOODBLOCKING

Both FM Global Loss Prevention Data Sheet 1-49 and industry standards provide recommendations and guidelines on woodblocking construction and attachment. FM Global (FMG) publishes recommendations only for concrete, masonry and steel decks in the Loss Prevention Data Sheets.

While industry standard guidelines do address a variety of attachment methods and formulas, they do not address safety factors related to specific deck types. Instead, they provide general recommendations for spacing and attachment. The phrase most commonly found in guideline specifications is "attachment of woodblocking to resist a minimum pull-out resistance of 175 lbf/ft in all directions." In some specifications, this recommendation has been increased to 350 lbf/ft in all directions.

While these guidelines might provide a useful starting formula for attaching woodblocking, the following recommendations addressing specific deck types, and based on laboratory and field testing, provide detailed guidelines for woodblocking attachment.

CONCRETE

For concrete and masonry, FMG recommends a minimum ½" diameter corrosion resistant anchor, combined with a minimum 1" diameter bearing washer embedded into the woodblocking. It is further recommended that the anchor and washer be recessed into woodblocking at least 1½" thick, spaced at a maximum of 48" o.c. (24" at corners). Note withdrawal resistance testing should be carried out in compliance with ANSI/SPRI FX-1-2006² or Metro Dade TAS 105³.

For buildings with concrete decks, the fastener design load should not be less than 250 lbf/ft after application of a 4:1 safety factor. The pull-over value should not be less than 125% of the design load and, if necessary, a larger bearing washer should be utilized to achieve this requirement. A variety of different fasteners and anchors can be utilized to achieve these recommendations, though certain conditions, such as concrete substrates with a compressive strength of less than 2,500 psi or thickness less than 2½", will require on-site performance testing to ensure design criteria are being met.

² ANSI/SPRI FX-1-2006: Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.

³ TAS 105: Test Procedure for Field Withdrawal Resistance Testing.

TECHNICAL BULLETIN

WOODBLOCKING

Table 1 - Anchor type, size and spacing criteria for concrete decks

ANCHOR TYPE	DIAMETER	SPACING
P	æ"	12" o.c.
F	1/2"	12" o.c.
H	ø"	12" o.c.
%	ø"	12" o.c.
F	ø"	12" o.c.

STEEL

For steel decks, FM Global recommends 3/4" diameter bolts drilled and tapped into a structural steel member or bar joists spaced between 48" and 72" o.c. depending on perimeter conditions.

Woodblocking attached to 18 to 22 ga. steel roof deck can be carried out using #14 or #15 diameter threaded fasteners. These fasteners have an average withdrawal 460 lbf from 33 KSI, 22 gauge steel decking. The industry accepted margin of safety is 1.5:1 with a pull-over value of not less than 125%.

Where woodblocking is attached perpendicular to the deck flute, it is recommended that fasteners be positioned over the high flanges of the deck, 12" o.c. (6" in corners). Where woodblocking runs parallel to the flutes, similar spacing is recommended, with the addition of 1/4" diameter self-tapping screws through the woodblocking deck and bar joist, spaced not greater than 6'. A #14 type 'B' fastener can be installed into a pre-drilled hole using a #1 twist drill. The possibility exists that the steel deck is poorly attached to structural components, especially on re-roofing projects. The decking can be mechanically attached to the bar joists with either a self-tapping fastener or a #4 or #5 pt. self-driller with a minimum 7/8" bearing washer.

For those metal decks using light-gauge metal (less than 22 ga.), the following formula can be utilized to determine fastener spacing: $X_{mn} \times FS = X_{fst} \div MS$ (X_{mn} = Minimum withdrawal resistance = Known (1); FS = Fastener spacing = Unknown; X_{fst} = Average fastener withdrawal = Known; MS = Margin of safety = 2). As with standard metal decks, woodblocking attached parallel to the ribs should be secured to steel angles, or mechanically secured to bar joists using self-trapping or self-drilling fasteners.

“LIGHTWEIGHT” DECKS (GYPSUM, TECTUM, LIGHTWEIGHT INSULATING AND CELLULAR CONCRETE)

Due to the low density of these deck materials and the load combinations they sustain, attaching woodblocking to lightweight decks is not recommended. In general, the deck should not be used as an attachment substrate unless the chosen anchor can clamp to the underside of the deck or attach to a structural member below, and achieve not less than 425 lbf ultimate load.

In order to determine fastener spacing, the following formula with a 4:1 margin of safety

TECHNICAL BULLETIN

WOODBLOCKING

should be used: $X_{mn} \times FS = X_{fst} \div MS$ (X_{mn} = Design withdrawal resistance = 250 lbf/lineal foot; FS = Fastener spacing = Unknown; X_{fst} = Average fastener withdrawal resistance = Known; MS = Margin of safety = 4). Toggle bolts are not recommended for fastening as they require a large hole for installation and rely on a trunnion nut to hold the toggle rod to the wing.

VERTICAL WALLS

Woodblocking can also be attached to vertical walls (See Figure 2). In these cases, the woodblocking should have a minimum thickness of 1½" with fasteners spaced not greater than 12" apart. Each anchor should have a minimum withdrawal resistance value of 800 lbf. Larger diameter threaded concrete anchors or hammer-in anchors are preferred in order to draw the blocking tight to the substrate.

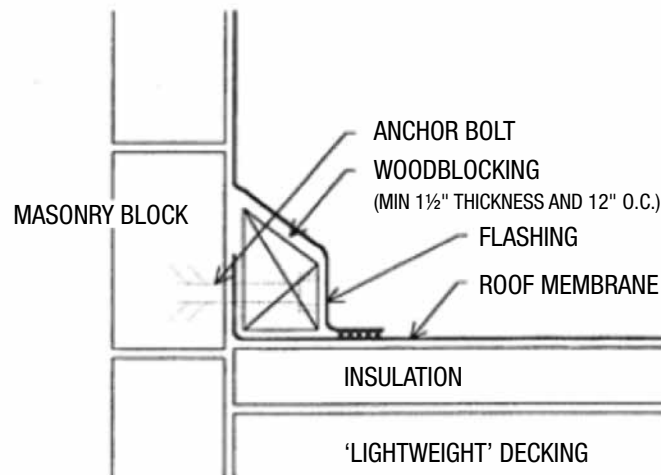


Figure 2 - Woodblocking attachment to vertical wall

TECHNICAL BULLETIN

SPECIFYING ROOFING SYSTEM WIND UPLIFT RESISTANCE

For many years the United States had numerous model building codes, all of which had differing criteria for the calculation of wind loads for low-slope roofing. The lack of continuity created confusion driving specifiers to rely on the insurance industry, and in particular, Factory Mutual Research Corp. (FMRC), the primary entity in the United States testing and approving roof assemblies with ratings related to wind uplift, fire and hail resistivity. FMRC became the default specification for wind uplift criteria whether the building was insured by FMRC or not. The objective of this document is to provide perspective around specifying wind uplift requirements.

In 1994, the South Florida Building Code published a new revision of the building code following Hurricane Andrew that required roof assemblies to meet the uplift resistance requirements as calculated using ASCE-7, the new wind load standard published by The American Society of Civil Engineers and the successor of ANSI A58.1. The South Florida Building Code began approving laboratories to run uplift resistance testing using the FMRC test criteria, Test Standards 4450 and 4470, as the test protocol. All projects submitted for permit had to include wind load calculations and evidence of successful testing at an approved laboratory. Over time, these tests were incorporated into a "Notice of Acceptance" that listed the testing at approved laboratories and the published testing from both FMRC and Underwriter's Laboratories.

For the rest of the country, the practice of specifying a FMRC rating, such as FM Class 1-60 or FM Class 1-90, was commonplace, providing a specifier with some level of assurance that the system had been tested for wind uplift resistance. In essence, FMRC became the de facto national standard for wind uplift requirements.

During the development of the International Building Code (IBC), this issue was addressed and clarified by adopting ASCE-7 as the wind load standard for roofing. Laboratories certified by the International Code Council (ICC) – the successor to BOCA, UBC and SBC – began testing roofing assemblies for uplift resistance for publication in ICC Evaluation Reports and for evaluation by local building officials. Of course, testing at FMRC (now FM Global) and at Underwriter's Laboratories could also be submitted for evaluation. With the 50 states adopting the majority of the IBC there was finally a standard for wind uplift testing and evaluation throughout the United States. While the South Florida Code differs, the calculation of wind loads is the same as the rest of the country. ASCE-7 is updated regularly, and at times may not be synchronized with the building code. For example, some jurisdictions may be enforcing the 2009 revision of the IBC when there is a 2010 version of ASCE-7. The code in force at the time of permitting will clearly state the version of ASCE-7 that is currently in force for that particular jurisdiction.

For non-FM Global insured projects, compliance with the building code simply requires a roof design for wind loading to be in compliance with the version of ASCE-7 in force at the time of permitting, and test data to confirm the submitted system is in compliance. Note that this will not only require compliance in the field but enhanced criteria for perimeters and corners. The test data to support compliance may be in a current Evaluation Report, or may be a recent test by a certified laboratory that demonstrates performance. There are some jurisdictions that do not require building permits for re-roofing; however, the installer is still obligated to install a roof assembly that meets code, including the wind uplift resistance requirements for the specific building. The design professional responsible for the project typically completes wind load calculations. The requirements in each jurisdiction may vary; therefore it is best to consult your local building official for specific requirements. For the current code requirements, please review Section 1504.3 of the 2012 IBC.

If FM Global insures the structure, or the specifier has used FM Global as the sole criteria for calculating wind loads, there is an additional step needed to comply with project documents. As a baseline, all projects must meet the ICC requirements noted above; in addition, the project must meet the design criteria for the structure outlined in the FM Global *Loss Prevention Data Sheet 1-28*. This document provides the necessary data, when read in conjunction with

TECHNICAL BULLETIN

SPECIFYING ROOFING SYSTEM WIND UPLIFT RESISTANCE

the FM Global *Loss Prevention Data Sheet 1-29*, to calculate wind- uplift resistance for any project insured by, or specified under FM Global criteria. In many cases, the specifier will include in the specification the field, perimeter and corner pressures eliminating the need to complete the calculations. If the project is FM Global insured, the calculations and proposed roof system are submitted to the FM Global Design Review Desk for evaluation. The reviewer will provide any revisions or modifications in writing. It is helpful to include with the project submission the *account* and *index* numbers to insure proper building identification.

If the structure is not insured by FM Global, but has been used as the basis of design, it is the designer of record who will review the submission and compare it to systems *approved* or *accepted* by FM Global. Approved systems can be found in FM Global *RoofNav*, an on-line database of approved systems that can be accessed by the public after a registration process. RoofNav lists all systems currently approved by FM Global and published in their current *FM Global Directory*. It is important to note that FM Global lists approvals using ratings of 1-60, 1-75, 1-90, etc. The “1” is a designation for a Class 1 assembly as designated in Test Standards 4450 and 4470. This “Class” addresses both the roof assembly and the roof deck. The numeric designation (60, 75, 90, etc.) is the calculated wind uplift pressures with a 2:1 margin of safety applied. Therefore, a system listed as a “60” system can be utilized for projects where the roof field pressures are calculated to be 30 psf or less. The margin of safety is the criteria established in the test protocol, which acknowledges the differences between the laboratory and field environments.

FM Global can also assist, responding to both email and telephone inquiries. It is important to bear in mind that these services are typically provided for any project insured by FM Global.

Notwithstanding a specification requirement to comply with FM Global, the building code requirements within the jurisdiction must be met. CertainTeed has hundreds of roof assemblies tested and listed by certified testing laboratories FM Global and Underwriter’s Laboratories. CertainTeed Tech Services can assist in identifying roof assemblies that meet specific project requirements whether *built-up*, *modified bitumen*, *self-adhered* or a *hybrid system*.

CertainTeed Commercial Roofing has designed and tested systems for over 50 years, amassing approvals and listings for hundreds of systems utilizing both CertainTeed and CertainTeed-accepted accessories. Our Technical Service representatives can assist in identifying the right systems for every project need.



CertainTeed

CEILING • DECKING • FENCE • GYPSUM • INSULATION • RAILING • ROOFING • SIDING • TRIM

20 Moores Road Malvern, PA 19355 Professional: 800-233-8990 Consumer: 800-782-8777 certainteed.com