

TOPCOAT® Liquid-Applied Roofing Systems

Application and Specifications Manual

(TOPGN160)

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*Quality You Can Trust...From
North America's Largest Roofing Manufacturer!™*

Welcome

Thank you for consulting the 2014 Edition of the TOPCOAT® *Application and Specifications Manual*. You can find further information at gaf.com, or contact GAF Technical Services at 1-800-ROOF-411 (1-800-766-3411).

WHO IS GAF?

Founded in 1886, GAF has grown to become North America's largest manufacturer of commercial and residential roofing.* Professional roofing contractors have long preferred the rugged, dependable performance that only a GAF roof can offer, and have made it the #1-selling brand in North America.* Our success in growing the company to nearly \$3 billion in sales has been based on our unique philosophy of helping our customers.

For roofing contractors and distributors:

- Helping to build your business and avoid hassles

For property owners & architects:

- Helping to ensure your best and safest choice in roofing

WHAT IS IN THIS MANUAL?

This Manual contains the following sections:

- Welcome
- Product Data Sheets
- Quick Specs and Tips
- Low-Slope / Restoration System Specifications
- Low-Slope Detail Drawings
- Balcony / Plaza Deck System Specifications
- Balcony / Plaza Deck Detail Drawings
- Metal Roof System Specifications
- Metal Roof Detail Drawings

WHAT ARE OUR PRODUCTS AND SERVICES?

No one offers a wider range of reliable, proven, cost-effective roofing solutions:

COMMERCIAL PRODUCTS

- TOPCOAT® Liquid-Applied Roofing Systems
- EverGuard Extreme® TPO Single-Ply Roofing Systems
- EverGuard® TPO and PVC Single-Ply Roofing Systems
- EverGuard® Freedom™ TPO Self-Adhering Roofing Systems
- RUBEROID® SBS and APP Modified Bitumen Roofing Systems
- ROOFMatch™ SBS and APP Membranes in select colors
- Liberty™ SBS Self-Adhering Modified Bitumen Roofing Systems
- GAFGLAS® Fiberglass Built-up Roofing Systems
- GardenScapes™ Roofing... Hassle-free Garden Roofing System

RESIDENTIAL PRODUCTS

- Lifetime Designer Shingles... Camelot®, Camelot II®, Country Mansion® II, Slateline®, Grand Canyon®, Grand Sequoia®, Grand Sequoia® IR, Sienna®, Woodland®, and Monaco® Shingles
- Timberline® Lifetime Shingles... Timberline Ultra HD®, Timberline HD®, Timberline® Natural Shadow®, Timberline® American Harvest®, Timberline® Cool Series, and Timberline® ArmorShield™ II
- 3-Tab Shingles... Marquis WeatherMax® and Royal Sovereign®
- TruSlate® Roofing... affordable Genuine Slate Roofing System

**Source: 2010 Fredonia Group Study*

ACCESSORY PRODUCTS

- We offer an extensive line of accessory products for our roof systems, including: EverGuard® TPO and PVC Prefabricated Accessories; Single-Ply Adhesives, Primers & Sealants; Matrix™ Adhesives and Cements; EnergyGuard™ Insulations; Drill-Tec™ Fasteners; M-Weld™ Preflashed Accessories; Metalastic® Expansion Joint Covers; Lexsuco® Roof System Accessories; Cobra® and Master Flow® Ventilation Products; Timbertex® Premium Ridge Cap Shingles; WeatherWatch® and StormGuard® Leak Barriers; and Shingle-Mate® and Deck-Armor™ Roof Deck Protection.

SERVICES

- Every GAF roofing product benefits from the substantial resources available only from a multibillion-dollar corporation dedicated to roofing. Our 29 plants mean manufacturing expertise. Our extensive R&D organization means a constant focus on product and process improvement. GAF is a team of over 3,000 people dedicated to your roofing satisfaction.
- GAF has a network of sales representatives and distributors to supply and service its quality roofing systems throughout North America.
- Our Technical Helpline is a technical assistance service that allows you to contact us directly to speak with a technical representative about specifications, applications, code approvals, and product information. The Helpline number is 1-800-ROOF-411 (1-800-766-3411).
- Architectural Information Services (AIS) is a specification service that allows you to specify your exact roofing needs and will send you a general specification that outlines your job summary, application method, product description, and detail drawings. The phone number for AIS is 1-800-522-9224.
- Our Tapered Design Group (TDG) is one of the many services available to our customers to help reduce their hassles. We provide tapered insulation take-offs for architects, contractors, and distributors nationwide. Just send your roof plans and specifications to tdg@gaf.com.
- Visit GAF on the web at gaf.com for extensive product information, specifications, and technical literature.

A FEW THINGS TO CONSIDER...

- This Manual contains the latest information relating to the application of TOPCOAT® Liquid-Applied Roofing Systems and is based on our years of experience in the commercial roofing field. It has been prepared as a general guide to assist architects, engineers, roofing contractors, and owners in the use of our roofing systems.
- GAF manufactures and sells roofing materials and does not practice architecture or engineering. GAF is not responsible for the performance of its products when damage to its products is caused by such things as improper building design, construction flaws, or defects in workmanship.
- The design responsibility remains with the architect, engineer, roofing contractor, or owner, and construction details illustrated and described herein are furnished solely for guidance purposes. These guidelines should not be construed as being all-inclusive, nor should they be considered as a substitute for good application practices.
- Under no circumstances does GAF have any liability for expenses arising out of or associated with the pre-existing presence of asbestos-containing materials or any other allegedly hazardous substances or materials upon the roof to which the new GAF roofing materials are being applied.
- Information contained in this Manual is presented in good faith and, to the best of GAF's knowledge, does not infringe upon any patents, foreign or domestic.
- As a part of its continuing efforts to improve the performance of its products, GAF periodically makes changes to its products and application specifications. The Company reserves the right to change or modify, at its discretion, any of the information, requirements, specifications, or policies contained herein. This Manual supersedes all catalogs and previous manuals.
- GAF is Your Best and Safest Choice!

TOPCOAT® Liquid-Applied Roofing Systems

Application and Specifications Manual

TABLE OF CONTENTS

SECTION 1: PRODUCT DATA SHEETS	
SECTION 1A: COATINGS	
322 White Elastomeric Coating	Pg. 8-9
EPDM Coating	Pg. 10
EnergyCote™ Elastomeric Coating	Pg. 11
FireOut™ Fire Barrier Coating	Pg. 12-13
FireShield® MB	Pg. 14
FireShield® SB	Pg. 15
MB Plus	Pg. 16
Membrane	Pg. 17
Membrane WOB	Pg. 18
PVDF Coating	Pg. 19
Sky-Lite	Pg. 20
Surface Seal SB	Pg. 21
SECTION 1B: FLASHING	
Flashing - Brush Grade	Pg. 23
Flashing - Brush Grade WOB	Pg. 24
Flashing - Liquid Fabric	Pg. 25
Flashing - Spray Grade	Pg. 26
Flashing Fabric	Pg. 27
SECTION 1C: PRIMERS & CLEANERS	
MP-300	Pg. 29
Precote	Pg. 30
Surface Seal SB Primer	Pg. 31
TPO Red Primer	Pg. 32
XR-2000	Pg. 33
SECTION 1D: SEALANTS	
FlexSeal™ Caulk Grade	Pg. 35
FlexSeal™/FlexSeal™ LV	Pg. 36
SECTION 2: QUICK SPECS AND TIPS	
FireShield® Roof System – Smooth-Surface BUR	Pg. 38
FireShield® Roof System – Torch Smooth APP	Pg. 39
FireShield® Roof System – Granule Surface	Pg. 40
BUR/MB Roof System – Smooth Surface	Pg. 41
MB Roof System – Granule Surface	Pg. 42
Metal Roof System With 20-Year NDL	Pg. 43
Metal Roof System With 15-Year NDL	Pg. 44
Metal Roof System With 10-Year NDL	Pg. 45
EPDM Roof System	Pg. 46
Plywood Roof System	Pg. 47
Structural Concrete Roof System	Pg. 48
TPO Roof System	Pg. 49
Hypalon® and PVC Roof System	Pg. 50
Polyurethane Foam Roof System	Pg. 51
Corrugated Transite Panels Roof System	Pg. 52
Exterior Metal Wall System	Pg. 53
TOPCOAT® Recommended Equipment	Pg. 54
TOPCOAT® Sprayer Specifications and Recommendations	Pg. 55

SECTION 3: LOW-SLOPE / RESTORATION SYSTEM SPECIFICATIONS

FireShield® System Specifications – Smooth BUR	Pg. 57-60
FireShield® System Specifications – Torch Smooth APP	Pg. 61-64
FireShield® System Specifications – Mineral-Surfaced, Mop Granule & Torch Granule APP Cap Sheets	Pg. 65-68
TOPCOAT® System Specifications – Smooth BUR and Smooth-Surface Modified Bitumen	Pg. 69-73
TOPCOAT® Restoration Specifications – Fiberglass & Modified Bitumen Granulated Cap Sheets	Pg. 74-78
TOPCOAT® System Specifications – EPDM	Pg. 79-83
TOPCOAT® System Specifications – Plywood	Pg. 84-86
TOPCOAT® Restoration Specifications – Structural Concrete	Pg. 87-91
TOPCOAT® System Specifications – Hypalon® & PVC	Pg. 92-96
TOPCOAT® System Specifications – TPO	Pg. 97-102
TOPCOAT® System Specifications – Sprayed Polyurethane Foam	Pg. 103-105
TOPCOAT® System Specifications – Corrugated Transite Panels	Pg. 106-110

SECTION 3A: LOW-SLOPE / RESTORATION DETAIL DRAWINGS

MB/BUR/EPDM Field Up Repair Detail/High Wall Detail	Pg. 112
Wall Termination Detail/Side Penetration Through Base Flashing Detail	Pg. 113
Penetration Curb Flashing Detail/Vent Pipe Flashing Detail	Pg. 114
BUR Edge Restoration Detail	Pg. 115
BUR Wall Termination Restoration Detail/BUR Drain Restoration Detail	Pg. 116
BUR Inside Corner Restoration Detail/BUR Outside Corner Restoration Detail	Pg. 117
BUR Scupper Restoration Detail/BUR Expansion Joint Restoration Detail	Pg. 118
BUR Equipment Support Restoration Detail/BUR Wall To Base Flashing Restoration Detail	Pg. 119

SECTION 4: BALCONY / PLAZA DECK SYSTEM SPECIFICATIONS

TOPCOAT® System Specifications – Concrete Plaza Deck / Balcony with Ceramic Tile	Pg. 121-126
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SECTION 4A: BALCONY / PLAZA DECK DETAIL DRAWINGS

Balcony Edge Waterproofing Detail/Balcony Edge Water Proofing Detail Alt. 1	Pg. 128
Balcony Edge Waterproofing Detail Alt. 2/Balcony Railing Detail	Pg. 129
Balcony Threshold Detail	Pg. 130

SECTION 5: METAL ROOF SYSTEM SPECIFICATIONS

TOPCOAT® System Specifications – Metal	Pg. 132-146
TOPCOAT® System Specifications – 20-Year Diamond Pledge™ ND	Pg. 147-160

SECTION 5A: METAL ROOF DETAIL DRAWINGS

Sheet Metal Cricket/Sheet Metal Cricket Installed & Flashed/Sheet Metal Cricket Completed	Pg. 162
Sheet Metal Cap/Seal Cap Seams & Fasteners With Flashing Grade	Pg. 163
Ridge Vent/Ridge Vent Cap Installed	Pg. 164
Ribbed Panel/Flashed Vertical Seam	Pg. 165
Ribbed Panel/Standing Seam On Ribbed Panel	Pg. 166
Initial Application of Flashing Grade/Embed TOPCOAT® Flashing Fabric (Transition Slits)/Cut TOPCOAT® Flashing Fabric (Around Fasteners)	Pg. 167
Standing Seam On Ribbed Panel (Trapezoidal Standing Seam)/ Flashing Grade Extruded Onto Vertical Seams Of A Standing Seam Panel	Pg. 168
Ridge Cap/Flutes On Ridge Filled & Flashed	Pg. 169
Concrete Wall Transition/When Applying TOPCOAT® Products To A Metal...	Pg. 170
Metal Wall Transition/Do Not Flash Base Of Wall To Roof Panel	Pg. 171
Neoprene Pipe Boots May Be Used...	Pg. 172
Flash Pipe Using Flashing Grade/Using Neoprene Pipe Boot	Pg. 173
Curb Unit/Properly Flashed Curb Unit	Pg. 174
Flush Skylight/Encapsulate Exposed Fasteners With Flashing Grade	Pg. 175
Reseaming Of Inverted “J” Panel	Pg. 176

ADHESION QUICK REFERENCE GUIDE

Product	Base	Recommended Use*									
		BUR	SBS	APP	TPO***	PVC	EPDM	Metal	Concrete	Wood	Transite**
COATINGS											
TOPCOAT® 322 White Elastomeric Coating	Water	•	•	•	•	No	No	•	•	•	•
TOPCOAT® MB Plus	Water	•	•	•	No	No	No	No	No	No	No
TOPCOAT® Membrane	Water	No	No	No	•	•	No	•	•	•	•
TOPCOAT® Membrane WOB	Water	No	No	No	•	•	No	•	•	•	•
TOPCOAT® EPDM Coating	Water	No	No	No	No	No	•	No	No	No	No
TOPCOAT® PVDF Coating (surface coat only)	Water	•	•	•	•	•	•	•	•	•	•
TOPCOAT® EnergyCote™ Elastomeric Coating	Water	•	•	•	No	No	No	No	No	No	No
TOPCOAT® FireOut™ Fire Barrier Coating	Water	No	No	No	No	No	No	No	No	•	No
TOPCOAT® FireShield® MB	Water	•	•	•	No	No	No	No	No	No	No
TOPCOAT® FireShield® SB	Solvent	•	•	•	No	No	No	•	•	•	No
TOPCOAT® Surface Seal SB	Solvent	•	•	•	No	No	•	•	•	•	No
FLASHING (Water-based)											
TOPCOAT® Flashing - Brush Grade	Water	•	•	•	•	•	•	•	•	•	•
TOPCOAT® Flashing - Brush Grade WOB	Water	•	•	•	•	•	•	•	•	•	•
TOPCOAT® Flashing - Spray Grade	Water	•	•	•	•	•	•	•	•	•	•
TOPCOAT® Flashing - Liquid Fabric	Water	•	•	•	•	•	•	•	•	•	•
TOPCOAT® Flashing Fabric	n/a	•	•	•	•	•	•	•	•	•	•
SEALANTS (Solvent-based)											
TOPCOAT® FlexSeal™ Caulk Grade	Solvent	•	•	•	•	No	•	•	•	•	•
TOPCOAT® FlexSeal™ (Regular)	Solvent	•	•	•	•	No	•	•	•	•	•
TOPCOAT® FlexSeal™ LV	Solvent	•	•	•	•	No	•	•	•	•	•
PRIMERS & CLEANERS											
TOPCOAT® EPDM System Cleaner	Water	No	No	No	No	No	•	No	No	No	No
TOPCOAT® MP-300 Rust-Inhibiting Primer	Water	No	No	No	No	No	No	•	No	No	No
TOPCOAT® XR-2000 Primer for Kynar® Coated Metal	Water	No	No	No	No	No	No	•	No	No	No
TOPCOAT® Precote Transite Panel Primer	Solvent	No	No	No	No	No	No	No	No	No	•
TOPCOAT® Surface Seal SB Primer	Solvent	No	No	No	No	No	No	•	No	No	No
TOPCOAT® TPO Red Primer	Solvent	No	No	No	•	No	No	No	No	No	No

* Surfaces must be clean, dry, and free of loose material. A primer may be needed in some instances. See application instructions for more details.

** TOPCOAT® Precote must be used prior to using any other coating, flashing, or sealant.

*** TOPCOAT® TPO Red Primer is required for all applicable coatings, flashings, and MajorSeal™ Liquid Flashing, but is not required for FlexSeal™ sealants.

GUARANTEE QUICK REFERENCE GUIDE

Product	Base	Substrate	Materials Only 10-Year	Integrated 10-Year	Emerald Pledge™ 10-Year***	Diamond Pledge™***			
						5-Year	10-Year	15-Year	20-Year
TOPCOAT® 322 White Elastomeric Coating	Water	Asphaltic	Yes	n/a	n/a	n/a	n/a	n/a	n/a
		Metal	Yes	n/a	n/a	n/a	n/a	n/a	n/a
		Concrete	Yes	n/a	n/a	n/a	n/a	n/a	n/a
TOPCOAT® MB Plus	Water	Asphaltic	Yes	Yes	3 gal	n/a	n/a	n/a	n/a
		Metal	Yes	n/a	n/a	1.5 gal	2 gal	3.25 gal	4.5 gal
TOPCOAT® Membrane & Membrane WOB	Water	TPO*	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
		PVC	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
		Concrete	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
		Transite**	Yes	Yes	3 gal	n/a	n/a	n/a	n/a
		EPDM	Yes	Yes	3 gal	n/a	n/a	n/a	n/a
TOPCOAT® PVDF Coating	Water	TPO*	Yes	n/a	n/a	n/a	n/a	n/a	n/a
		Membrane	Yes	n/a	n/a	n/a	n/a	n/a	n/a
TOPCOAT® EnergyCote™ Elastomeric Coating	Water	MB Plus	Yes	n/a	n/a	n/a	n/a	n/a	n/a
		Asphaltic	Yes	n/a	n/a	n/a	n/a	n/a	n/a
TOPCOAT® FireOut™ Fire Barrier Coating	Water	Wood	Yes	n/a	n/a	n/a	n/a	n/a	n/a
		Asphaltic	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
TOPCOAT® FireShield® MB	Solvent	Asphaltic	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
		EPDM	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
TOPCOAT® FireShield® SB	Solvent	Metal	Yes	Yes	2 gal	1.5 gal	2 gal	3.25 gal	4.5 gal
		Asphaltic	Yes	Yes	3 gal	n/a	n/a	n/a	n/a
		EPDM	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
TOPCOAT® Surface Seal SB	Solvent	Concrete	Yes	Yes	2 gal	n/a	n/a	n/a	n/a
		Fiberglass	Yes	n/a	n/a	n/a	n/a	n/a	n/a
TOPCOAT® Sky-Lite	Solvent	Fiberglass	Yes	n/a	n/a	n/a	n/a	n/a	n/a

* Requires TOPCOAT® TPO Red Primer

** Requires TOPCOAT® Precote (Transite Panel Primer)

*** Gallons indicate minimum application per 100 square feet of roof

SECTION 1: PRODUCT DATA SHEETS

SECTION 1A: Coatings





322 WHITE ELASTOMERIC COATING

FORMERLY LEAKBUSTER™ MATRIX™ 322 ELASTOMERIC ROOF COATING

Description

TOPCOAT® 322 White Elastomeric Coating is a styrene acrylic-based roof coating that forms a seamless and flexible layer of protection for your roof. This coating is designed to seal and dramatically reduce the surface temperatures and to resist heat absorption and cracking due to thermal shock. TOPCOAT® 322 White Elastomeric Coating is an ENERGY STAR® qualified (U.S. only) reflective product, which will help in reducing interior building temperatures. Formulated to provide a tough, durable, weather-resistant coating, this flexible, fast-drying elastomeric coating adheres readily to most roofing substrates and is designed to protect the roof substrate from the damaging effects of the sun's heat and ultraviolet radiation.

- ENERGY STAR® qualified reflectivity can dramatically decrease interior building temperatures
- Meets the stringent standards for solar reflectance and thermal emittance set by the California Energy Commission for a cool roof
- Offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy
- Low VOC, non-flammable, and presents minimal hazard to the applicator
- Provides a protective and reflective finish that will keep the sun's damaging rays from prematurely aging your roof, while keeping the substrate temperatures substantially lower to alleviate stress on the membrane

Uses

TOPCOAT® 322 White Elastomeric Coating is an ENERGY STAR® qualified reflective product, which will help in reducing interior building temperatures for:

- Smooth-surface asphalt built-up and modified bitumen membranes (aged for a minimum of 90 days)
- Protection and restoration of aged roofs

Approvals & Certification

TOPCOAT® 322 White Elastomeric Coating meets or exceeds the requirements of ASTM D1653, ASTM D412, ASTM G26, ASTM G29, ASTM B117, ASTM C794, ASTM G21, FTMS 141.6271, FTMS 141.6221, ASTM D2243-90, ASTM D2196, ASTM D2240, ASTM D2794, ASTM D1475, ASTM E1644, ASTM D2697, ASTM E470, ASTM G53. Approvals may vary by region. Be sure to review pail labels before purchase.

Surface Preparation

All surfaces must be clean, dry, and free from any foreign matter, such as oil, grease, dirt, or debris that could inhibit the bonding capabilities of the coating. On existing roofs, inspect roof deck condition; moisture in old roof may require complete removal of existing roof. Check local building codes; local building codes may require complete removal of existing roof. Contact GAF Technical Services for details on cutting out and repairing blisters, buckles, and raised edges for a smooth surface. Check all flashings, edges, drains, valleys, and vents and repair as needed. Use Matrix™ 203 Plastic Roof Cement for repairs and follow can instructions. Repaired areas using roof cement must weather a minimum of 90 days.

TOPCOAT® 322 WHITE ELASTOMERIC COATING TECHNICAL DATA

Application Rate:	1.0 gallons/100 sq.ft. per coat
Application Method:	Airless sprayer, roller, or brush
Application Temp (air, surface):	45° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Weight:	8.8 lbs per gallon
VOC (max):	<50 grams/liter
Non-Volatile Content:	47-53% minimum
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Non-Volatile Content:	85% by weight minimum
Sizes:	3, 5, or 55 gallon



322 WHITE ELASTOMERIC COATING (continued)

Application

Application Rate: Typical application rate is 1 gallon per 100 square feet per coat. Typical applications require 2 coats. Application rate may vary with surface conditions and membranes used.

Application Method: Stir before application. Apply coating with roller, brush, or sprayer, covering the surface at an even rate of 1 gallon per 100 square feet. For spray application, use a Graco 30:1 ratio pump or equivalent, capable of delivering 3-5 gallons a minute. Recommended method for application is by airless sprayer.

Spray: A Graco 30:1 pump or equivalent is recommended. Consult equipment manufacturer for optimum psi, spray tip size, length of hose, and number of spray guns to achieve uniform coat.

Brush: Apply smooth, heavy coat using parallel strokes for uniform coat. For maximum reflective surface, DO NOT OVERBRUSH.

Roller: Apply smooth, heavy coat, using parallel strokes for uniform coat.

System Installations: See membrane manufacturer's application instructions for use in roof systems.

Precautions

Compatibility & Limitations: BUR and MB surfaces must be aged for a minimum of 90 days. Do not use on extremely wet surfaces, directly over wood, or on surfaces previously covered with coal tar products. Do not apply if there is a threat of rain within 24 hours. Do not use over coal tar or rubber membranes or over shingles of any kind.

Temperature Range: Apply only when temperatures are 45°F (5.5°C) and rising. Cold weather will cause product

to stiffen, making application difficult. Store 24 hours at room temperature prior to application. Do not heat container or attempt to thin this product. Not recommended for application on substrates that exceed 120°F (48°C).

Storage/Handling: TOPCOAT[®] 322 White Elastomeric Coating should always be kept away from heat, open flame, and any source of ignition. Observe normal safeguards for storing and handling of this product prior to and during application. Do not allow coating to freeze.

Important: Repair leaks promptly to avoid adverse effects, including, but not limited to, mold growth.

Clean-Up

Keep containers covered when not in use. Clean equipment and overspray with soap and water. Clean hands with waterless hand cleaner or soap and water. Dried material should be removed with mineral spirits or biodegradable turpentine solvent.

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

TOPCOAT®

LIQUID-APPLIED ROOFING

EPDM COATING

Description

TOPCOAT® EPDM Coating is a water-based, acrylic, reflective, highly flexible, liquid-applied membrane designed to protect and provide reflectivity to EPDM. TOPCOAT® EPDM Coating (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. It is designed to be used after the roof has been treated with our proprietary TOPCOAT® EPDM System Cleaner. The EPDM System Cleaner provides an alternative to high solvent products and can be used on both fully adhered and mechanically attached EPDM systems.

Uses

TOPCOAT® EPDM Coating is a liquid-applied membrane used to resurface EPDM surfaces. EPDM Coating is designed to protect and restore aged roof surfaces and to increase a roof's reflectivity. It is to be used after the roof has been treated with our proprietary EPDM System Cleaner. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).** Surface must be free of ponding water, ice, snow and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Highly reflective and listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only)
- Reflective white can dramatically decrease building temperatures
- Advanced formulation that reduces the possibility of leaks at joints, edges, or corners when properly flashed
- Flexible; will expand and contract with roof during temperature extremes
- Helps to resist algae, mold, and mildew
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 10 years*
- Available in 5-gallon pails, 55-gallon containers, and bulk totes

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

TOPCOAT® EPDM COATING TECHNICAL DATA

Application Rate:	1.0-1.75 gallon/100 sq. ft. per coat
Application Method:	Airless sprayer or roller
Application Temp: (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) – 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) – 8 dry mils
Total Solids (by weight):	68% ± 2%
Total Solids (by volume):	54% ± 2%
Specific Gravity:	1.46 ± 0.1
Weight per Gallon:	12.2 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	210 psi ± 10%
Initial Reflectivity:	0.86 (white only)
Aged Reflectivity:	0.70 (white only)
Initial Emissivity:	0.88 (white only)
Aged Emissivity:	0.87, 3 year (white only)
Initial SRI:	108 (white only)
Aged SRI:	85 (white only)
Storage:	Store in well-ventilated area at 42°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

TOPCOAT® EPDM SYSTEM CLEANER TECHNICAL DATA

Application Rate:	1 gallon/500 sq. ft.
Application Method:	Garden sprayer or spray bottle
Application Temp (surface):	32° – 120°F
Drying Time (75°F, 50% RH):	Approximately 30 minutes
Total Solids (by weight):	16% ± 2%
Weight per Gallon:	8.3 ± 0.5 lbs
Viscosity:	Same as water
PH:	11 – 12
Storage:	Store in well-ventilated area at 42°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water



ENERGYCOTE™ ELASTOMERIC COATING

Description

TOPCOAT® EnergyCote™ Elastomeric Coating is a brilliant white, water-based, low-VOC, highly reflective, elastomeric coating that cures to form a seamless rubber membrane. It has been specifically designed to treat seams, laps, flashings, and other edges and details in reflective cap sheet products such as the EnergyCap™ roofing membrane. It is flexible and, due to unique emulsion chemistry, resists unsightly bleed-through over asphalt substrates better than other coating systems. It is non-flammable and presents minimal hazard to the installer.

Uses

TOPCOAT® EnergyCote™ Elastomeric Coating is designed to add reflectivity and protect areas of asphalt bleed-out on white reflective asphaltic roll roofing applications to give a uniform, brilliant white finish across the whole roof area. Matching granules may be broadcast into the asphalt bleed-out at seams prior to coating to enhance the finished appearance of the membrane.

Advantages

- Highly compatible with asphaltic substrates and resistant to staining and asphalt bleed-through, even on fresh asphalt
- Ideal for touch-up of reflective asphaltic membranes
- No waiting period for exposed asphalt to age
- Low VOC, non-flammable, and presents minimal hazard to the installer
- Easy application by brush, roller, or spray

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D2196, ASTM D1475, ASTM E1644, ASTM C1549, ASTM E408

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

TOPCOAT® ENERGYCOTE™ ELASTOMERIC COATING TECHNICAL DATA

Application Rate:	1 gallon/100 sq. ft.; 300 lin.ft per gallon @ 4" wide
Application Method:	Airless sprayer, brush or roller
Application Temp (air, surface):	42° - 140°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 8 dry mils
Total Solids (by weight):	62% ± 2%
Total Solids (by volume):	51% ± 2%
Specific Gravity:	1.44 ± 0.1
Weight per Gallon:	12.0 ± 0.5 lbs.
Viscosity (75°F):	2,900 ± 2,000 cps
Solar Reflectivity:	80%
Thermal Emittance:	>0.90
Elongation:	275%
Initial Reflectivity:	0.91 (white only)
Aged Reflectivity:	Pending
Initial Emissivity:	0.87 (white only)
Aged Emissivity:	Pending
Initial SRI:	115 (white only)
Aged SRI:	85 (white only)
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing
Unit Sizes:	5 gal/18.9 L or 2 gal/7.6 L pails



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State of
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TOPCOAT[®]
LIQUID-APPLIED ROOFING

FIREOUT™ FIRE BARRIER COATING

Description

TOPCOAT® FireOut™ Fire Barrier Coating is a low-VOC, water-based coating system that provides outstanding flame spread and penetration protection to combustible roof decks in the event of fire. Using FireShield® technology, FireOut™ Fire Barrier Coating can provide UL Class A performance with mechanically attached and self-adhered TPO, PVC, and modified bitumen roof systems. FireOut™ Fire Barrier Coating can be applied by roller, squeegee, or airless sprayer, and its rapid application and drying time provides the speed and simplicity to accelerate projects and save time and money over conventional gypsum board or fire-resistant slip sheet systems.

FireOut™ Fire Barrier Coating Advantages

Self-Extinguishing... active coating expands in the presence of heat or flame to form a protecting insulation layer

Installs Faster... simple, one-step application installs in less than half the time of gypsum board or fire-resistant slip sheet application

Safer Installation... no torches, hot asphalt, or fumes; less material on the roof

Easy Application... choose from spray, roller, or squeegee for maximum flexibility

Uses

TOPCOAT® FireOut™ Fire Barrier Coating is designed to provide UL Class A protection over combustible decks when used with the following systems:

- EverGuard® Mechanically Attached TPO
- EverGuard® Mechanically Attached PVC
- RUBEROID® Modified Bitumen Membrane
- Liberty® Self-Adhering Modified Bitumen Membrane

Approvals & Certification

TOPCOAT® FireOut™ Fire Barrier Coating is classified by Underwriters Laboratories (UL). Consult the current edition of the UL Approvals Directory for full images.

Surface Preparation

Deck must be constructed to comply with all local building codes for deck construction.

All surfaces to be treated with FireOut™ Fire Barrier Coating must be clean, dry, and free from any foreign matter, such as oil, grease, dirt, or debris.

Application

Application Rate: Application rate is 1 gallon per square.

Allow minimum of 1 hour drying time before allowing foot traffic, depending upon temperature and humidity.

CAUTION: Be sure that the product is dry before walking on it, since the product is slippery while still wet. The whitish-pink cast of the wet material turns brown when the product is dry, and is an excellent visual indicator.

Material Preparation: Stir well with low-speed mechanical agitation for a minimum of 2 minutes prior to application. Stage pails upside down before opening to facilitate mixing.

Application Method: Apply FireOut™ Fire Barrier Coating with a roller, squeegee, or airless sprayer, covering the surface at one gallon per 100 square feet. A wet mil film gauge should read 16 wet mils (0.016") minimum. Allow to fully dry before continuing with roof installation.

Spray: A minimum 35:1 pump (3000 psi, 2.3 to 3.0 gals per minute) or equivalent is recommended. Consult equipment manufacturer for optimum psi and length of hose to achieve uniform coat. Use a 0.045" reversible tip or larger to reduce clogging.

Roller: Use a heavy nap roller and apply a smooth, heavy coat, using parallel strokes for uniform coating. Apply the material directly from the pails and immediately begin spreading. Check to see that thickness is 16 wet mils (0.016") minimum with a wet mil gauge.

Squeegee: When using a squeegee, it should have 1/4" (6 mm) serrations to apply a uniform, smooth, even coat without gaps, dry areas, or bubbles. Apply the material directly from the pails and immediately begin spreading. Check to see that thickness is 16 wet mils (0.016") minimum with a wet mil gauge.

Precautions

Compatibility & Limitations: Do not use on wet or damp surfaces.

Application Temperature Range: Apply only when temperatures are 42°F (7.2°C) and rising. Do not heat container or attempt to thin this product. Not recommended for application on substrates that exceed 140°F (60°C).

(continued)



FIREOUT™ FIRE BARRIER COATING (continued)

Precautions (continued)

Storage/Handling: Do not allow FireOut™ Fire Barrier Coating to freeze; if product freezes, discard it.

Clean-Up: Keep containers covered when not in use. Clean equipment and overspray with water and soap. Clean hands with water and soap or waterless hand cleaner.

Ventilation: Use with adequate ventilation and close containers when not in use. If TLV (Total Level of Vapor) is exceeded, respirators are required (NIOSH/OSHA). Inhalation of high vapor concentration may result in headaches and/or dizziness. Remove individual to fresh air and administer oxygen if breathing is difficult. If breathing has stopped, administer artificial respiration, keep victim warm, and order emergency medical attention immediately.

Eye Contact: Rinse immediately with water for 15 minutes and seek medical advice.

Personal Protection - Irritation may result from prolonged or repeated contact with skin. Wear chemical-resistant gloves, protective goggles, and protective clothing.

Waste Disposal: Empty containers must be disposed of in an approved landfill in accordance with local, state, and federal regulations.

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

TOPCOAT® FIREOUT™ FIRE BARRIER COATING TECHNICAL DATA

Application Rate:	1.0 gallons/100 sq. ft minimum
Application Temperature (air, surface):	42°F – 120°F
Drying Time (75°F, 50% RH):	Approximately 1 hour
Wet Mil Thickness:	16 wet mils
Dry Mil Thickness:	9 dry mils
Solids Content:	9.7 lbs per gallon
VOC Content (max) :	<50 grams/liter
Storage:	42°F – 140°F
Shelf Life:	9 months
Unit Sizes:	5 or 55 gallon

TOPCOAT®

LIQUID-APPLIED ROOFING

FireShield® MB

Description

TOPCOAT® FireShield® MB is a water-based, 100% acrylic coating emulsion-based product that cures to form a seamless rubber membrane. FireShield® MB will maintain or may improve UL rating on select roofing systems or assemblies.* It is designed to enhance your roof system's protective performance by providing unique fire-extinguishing properties. Special fire-resistant ingredients in the product react with heat and fire, causing a chemical reaction to occur. A non-combustible carbon char layer is formed that retards flame propagation by reducing available oxygen. FireShield® MB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. Sprayable, seamless FireShield® systems install fast without the tear-off, staging, and disposal associated with traditional systems. Comprehensive warranties are available.**

Uses

TOPCOAT® FireShield® MB is designed to protect new BUR and modified bitumen roofs as well as to restore metal (as a primer), Hypalon®, wood, and concrete substrates. FireShield® MB is formulated to provide maximum fire protection, increase a roof's reflectivity, and protect the roof substrate from harmful ultraviolet rays. It is highly flexible to accommodate temperature-related expansion and contraction of the roof system, a leading cause of roof system failure. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).**

Surface must be free of water, ice, snow, and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Unique technology can turn virtually any currently UL Classified BUR or modified bitumen roof system into a UL Class A rated roof*
- FireShield® MB is highly reflective
- FireShield® MB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance
- Low VOC, non-flammable, and presents minimal hazard to the applicator
- Easier to apply than solvent-based systems for asphalt surfaces
- Limited material warranty available for up to 10 years**
- Guarantees available for up to 10 years**
- Available in 5-gallon pails, 55-gallon drums, and bulk totes

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM D2196, ASTM D1475, ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*Provided the roofing system or assembly is UL Listed.

**See applicable warranties and guarantees for complete coverage and restrictions.

TOPCOAT® FIRESHIELD® MB TECHNICAL DATA

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat, varies by system
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) – 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) – 9 dry mils
Total Solids (by weight):	67% ± 2%
Total Solids (by volume):	55% ± 2%
Specific Gravity:	1.34 ± 0.1
Weight per Gallon:	11.2 ± 0.5 lbs.
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	100 psi ± 10%
Elongation:	275%
Initial Reflectivity:	0.72 (white only)
Aged Reflectivity:	0.69 (white only)
Initial Emissivity:	0.91 (white only)
Aged Emissivity:	0.90, 3 year (white only)
Initial SRI:	89 (white only)
Aged SRI:	85 (white only)
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

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Description

TOPCOAT® FireShield® SB is a solvent-based, liquid thermoplastic rubber coating that cures to form a seamless rubber membrane. FireShield® SB will maintain or may improve UL rating on select roofing systems or assemblies.* FireShield® SB is designed to enhance your roof system's protective performance by providing unique fire-extinguishing properties. Special fire-resistant ingredients in the product react with heat and fire, causing a chemical reaction to occur. A non-combustible carbon char layer is formed that retards flame propagation by reducing available oxygen. FireShield® SB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. Sprayable, seamless FireShield® systems install fast without the tear-off, staging, and disposal associated with traditional systems. Comprehensive warranties are available.**

Uses

TOPCOAT® FireShield® SB is designed to restore BUR, modified bitumen, Hypalon®, TPO, EPDM, metal, wood, and concrete. FireShield® SB is formulated to provide maximum fire protection, increase a roof's reflectivity, and protect the roof substrate from harmful ultraviolet rays. It is highly flexible to accommodate temperature-related expansion and contraction of the roof system, a leading cause of roof system failure. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).** Surface must be free of ponding water, ice, snow, and debris

prior to application. Do not apply at temperatures below 32°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- FireShield® SB is highly reflective
- FireShield® SB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance
- Ideal for modified bitumen, Hypalon®, BUR, metal, TPO, wood, concrete, and EPDM
- Designed to be applied at temperatures as low as 32°F
- Strong; forms a flexible seal that will not become brittle
- Flexible; will expand and contract with roof
- Limited material warranty available for up to 10 years**
- Guarantees available for up to 10 years**
- Available in 5-gallon pails, 55-gallon containers, and bulk totes

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM B117, ASTM C794, ASTM G21, FTMS 141.6271, ASTM D2196, ASTM D1475, ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*Provided the roofing system or assembly is UL Listed.
**See applicable warranties and guarantees for complete coverage and restrictions.

TOPCOAT® FIRESHIELD® SB TECHNICAL DATA

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, roller, or brush
Application Temp (air, surface):	32° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) – 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) – 8 dry mils
Total Solids (by weight):	66% ± 3%
Total Solids (by volume):	48% ± 2%
Specific Gravity:	1.23 ± 0.09
Weight per Gallon:	10.2 ± 0.5 lbs.
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	565 psi ± 10%
Elongation:	550%
Initial Reflectivity:	0.81 (white only)
Aged Reflectivity:	0.71 (white only)
Initial Emissivity:	0.91 (white only)
Aged Emissivity:	0.89, 3 year (white only)
Initial SRI:	101 (white only)
Aged SRI:	87 (white only)
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral spirits



TOPCOAT®

LIQUID-APPLIED ROOFING

MB PLUS

Description

TOPCOAT® MB Plus is a water-based, low-VOC, acrylic, sprayable polymeric coating, which cures to form a seamless rubber membrane. It covers and protects most roof surfaces including modified bitumen (smooth and granulated) and smooth BUR, and acts as a primer on metal. MB Plus (white only) is an ENERGY STAR® qualified reflective product that will help to reduce building temperatures. MB Plus (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. It is highly reflective, flexible and, due to unique emulsion chemistry, resists unsightly bleed-through over asphalt substrates better than solvent-based systems. Available in white (for maximum reflectivity) and custom colors. It is non-flammable and presents minimal hazard to the applicator.

Uses

TOPCOAT® MB Plus is designed to protect and restore aged roofs. This product can be used on modified bitumen, BUR, metal (as a primer), wood, and concrete. For use with water-based sealants and top coats only.

For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours). Surface must be free of ponding water, ice, snow and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- ENERGY STAR® qualified reflectivity can dramatically decrease building temperatures (white only)
- Highly reflective and listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only)
- Low VOC, non-flammable, and presents minimal hazard to the applicator
- Easier to apply than solvent-based systems for asphalt surfaces
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 10 years*†
- Available in 5-gallon pails, 55-gallon drums, and bulk totes

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM D2196, ASTM D1475, ASTM D1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

†When used as a part of a multi-ply system.

TOPCOAT® MB PLUS TECHNICAL DATA

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) – 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) – 9 dry mils
Total Solids (by weight):	65% ± 2%
Total Solids (by volume):	54% ± 2%
Specific Gravity:	1.32 ± 0.1
Weight per Gallon:	11.0 ± 0.5 lbs.
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	150 psi ± 10%
Elongation:	275%
Initial Reflectivity:	0.83 (white only)
Aged Reflectivity:	0.67 (white only)
Initial Emissivity:	0.88 (white only)
Aged Emissivity:	0.85, 3 year (white only)
Initial SRI:	104 (white only)
Aged SRI:	91 (white only)
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

LEED® Credit
Available



State of
Florida
Approved



TOPCOAT[®]

LIQUID-APPLIED ROOFING

MEMBRANE

Description

TOPCOAT[®] Membrane is a water-based, spray-applied liquid coating, which cures to form a seamless 100% acrylic elastomeric membrane specially designed to seal the entire roof. TOPCOAT[®] (white only) is an ENERGY STAR[®] qualified reflective product that will help to reduce building temperatures. TOPCOAT[®] (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request.

Uses

TOPCOAT[®] Membrane is designed to protect and waterproof metal, wood, copper, PVC, transite and concrete roof substrates for many years. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).** Surface must be free of ponding water, ice, snow and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- ENERGY STAR[®] qualified reflectivity can dramatically decrease building temperatures (white only)

- Highly reflective and listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only)
- California Title 24 compliant
- Offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy
- Low VOC, non-flammable, and presents minimal hazard to the applicator
- Cures and becomes stronger under the sun's ultraviolet rays
- Water-based for superior protection and easy application
- Is available in white (for maximum reflectivity) and 15 standard colors (custom tinting is available upon request)
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 20 years*
- Is available in 1-gallon, 5-gallon, and 55-gallon containers in addition to bulk totes

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D1653, ASTM D412, ASTM G26, ASTM G29, ASTM B117, ASTM C794, ASTM G21, FTMS 141.6271, FTMS 141.6221, ASTM D224390, ASTM D2196, ASTM D2240, ASTM D2794, ASTM D1475, ASTM E1644, ASTM D2697, ASTM E470, ASTM G53, and ASTM D6083

Note: Repair leaks promptly to avoid adverse effects, including mold growth. TOPCOAT[®] can be utilized as a direct replacement for TOPCOAT[®] CRT.

*See applicable warranties and guarantees for complete coverage and restrictions.

TOPCOAT[®] MEMBRANE TECHNICAL DATA

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) – 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) – 9 to 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D-1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Elongation:	85% of original
Weatherability :	<ul style="list-style-type: none"> • 1,000 hours Atlas Weather-o-meter[®] exposure per ASTM D412, ASTM G26 Tensile Strength: 150% of original • 1,500 hours Atlas Weather-o-meter[®] exposure per ASTM D412, ASTM G26 No cracking, embrittlement, loss of adhesion, or discoloration • 2,000 hours UV exposure, type UV bulb, per ASTM G53 No cracking, embrittlement, loss of adhesion, or discoloration
Initial Reflectivity:	0.85 (white only)
Aged Reflectivity:	0.68 (white only)
Initial Emissivity:	0.90 (white only)
Aged Emissivity:	0.88, 3 year (white only)
Initial SRI:	107 (white only)
Aged SRI:	83 (white only)
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water and mild soap before curing

LEED[®] Credit
Available

Title 24
Compliant



State of
Florida
Approved



TOPCOAT®

LIQUID-APPLIED ROOFING

MEMBRANE WOB

Description

TOPCOAT® Membrane WOB (without biocide) is a water-based, brush, roll, or spray-applied coating that cures to form a seamless rubber membrane that covers the entire roof. It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. It is low in VOC, non-flammable, and presents minimal hazard to the applicator. Do not apply in temperatures under 42°F.

TOPCOAT® Membrane WOB White is included on the list of approved potable water catchment coatings by the Bermuda Department of Health.

TOPCOAT® Membrane WOB White has been tested and certified by the NSF International as an approved potable water catchment coating that complies with requirements of "NSF Protocol for Health Effects of Rainwater Catchment System Components dated August 1, 1995."

The ingredients of TOPCOAT® Membrane WOB White are listed by the U.S. Food and Drug Administration.

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

TOPCOAT® MEMBRANE WOB TECHNICAL DATA

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, stiff brush, or roller
Application Temp (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity/Weight per Gallon:	1.50/12.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275% ± 25 psi
Low Temperature Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Clean-Up:	Water and mild soap while wet
Weatherability:	<ul style="list-style-type: none"> • 1,000 hours Atlas Weather-o-meter® exposure per ASTM G26 Tensile Strength: 150% of original Elongation: 85% of original • 2,000 hours Atlas Weather-o-meter® exposure per ASTM G26 No cracking, embrittlement, loss of adhesion, or discoloration • 6,000 hours QUV® exposure, type UVB bulb, per ASTM G53 No cracking, embrittlement, loss of adhesion, or discoloration



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PVDF COATING

Description

TOPCOAT[®] PVDF Coating is a water-based, spray-applied, Polyvinylidene fluoride-based reflective coating with exceptional dirt-repelling characteristics.

This product was designed to repel dirt build-up and staining from environmental factors that can diminish reflectance over time. Polyvinylidene fluoride is a well-established polymer additive that has been used in coating products for decades in both non-roofing and roofing applications. It offers excellent weatherability and resists mildew and can withstand extended exposure to a wide range of temperatures, ultraviolet rays, and atmospheric pollutants.

TOPCOAT[®] PVDF Coating is compatible with select water-based sealant and coating products, including TOPCOAT[®] Membrane and MB Plus coating products. It may be installed as a final coat in multicoat applications of compatible water-based product or in a multicoat PVDF coating application. See GAF's published TOPCOAT[®] application instructions for specifications and requirements.

PVDF coating is highly sensitive to substrate conditions, and all flashing materials and/or base coats **MUST BE THOROUGHLY CURED/DRY**, prior to the application of PVDF coating. Application to uncured or wet substrates will result in cracking.

While PVDF coating has demonstrated greater resistance to standing water than typical water-based coating, it is not warranted in applications where ponding water is present.

TOPCOAT[®] PVDF Coating is available in white but custom tinting is available (minimum order requirement).

Uses

TOPCOAT[®] PVDF Coating is designed for use over galvanized metal roofing, BUR, TPO (TOPCOAT[®] TPO Primer required), and modified bitumen membranes (MB Plus base coats required over asphaltic surfaces to deter staining), and select TOPCOAT[®] water-based coatings. **Substrate must not experience consistent repeated standing and/or ponding water and must have positive drainage.** Apply at temperatures above 42°F (5.56°C) and below 120°F (48.89°C). Keep material from freezing.

Advantages

- High reflectivity helps to reduce rooftop surface temperatures
- PVDF polymer deters adhesion of dirt and dust particles that impact aged reflectivity
- Compatible with other TOPCOAT[®] water-based coating products (see specifications for details)
- Water based, less impact on the environment, easy to clean up
- Extreme weatherability/longevity
- Mildew resistant
- Shorter cure time than typical water-based coatings
- Warranties available for up to 10 years*
- Guarantees for up to 20 years when used as part of a GAF Roofing System*
- Available in 5-gallon pails and 55-gallon drums, minimum order applies

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See TOPCOAT[®] 10-Year Limited Warranty and TOPCOAT[®] Diamond Pledge[™] NDL Roof Guarantee for complete coverage and restrictions.

TOPCOAT[®] PVDF COATING TECHNICAL DATA

Application Rate:	0.5 to 1.0 gallons per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42 ° – 120 °F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat (install over DRY substrates ONLY)
Elongation:	ASTM D2370 100%
Solids Content (by weight):	57% calculation via formulation
Viscosity (75°F):	Brookfield (#6 spindle @ 10 rpm) 11,000~13,000 cps
Tensile Strength:	ASTM D2370 >200 psi
Unit Sizes:	5-gallon pail and 55-gallon drum
Weight Per 5-Gallon Pail, As Applicable:	63 lbs
Wet Adhesion on TOPCOAT [®] :	ASTM C794 2 lbf/in
Water Absorption:	ASTM D471 <5%
Water Vapor Permeance:	ASTM D96 49 perms
Tear Resistance:	ASTM D624 ~70-80 lbf/in
Coverage Rate:	Airless spray 120 sq ft/gal
VOCs:	<50 g/L
Initial Reflectivity:*	0.885

*Based on in-house testing



TOPCOAT®

LIQUID-APPLIED ROOFING

SKY-LITE

Description

TOPCOAT® Sky-Lite is a clear, solvent-based synthetic rubber sealer designed to protect and waterproof porous, deteriorated fiberglass-reinforced skylight panels.

Uses

TOPCOAT® Sky-Lite is specially designed to seal and rebind fiberglass mat or fiber used in the construction of skylight panels in addition to weathered plastic skylights. TOPCOAT® Sky-Lite protects and reconditions translucent fiberglass skylight panels found on roofs and walls. DO NOT use to repair cracked or broken skylight panels. DO NOT apply at temperatures below 32°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Helps to seal out water and prevents leaking of porous skylight perimeters
- Seals and binds reinforcing fibers and extends the life of the skylight panels
- Reconditions leaky panels
- Assists in the restoration of original skylight clarity
- Limited material warranty available for up to 10 years*
- Available in 5-gallon pails

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D2196, ASTM D1475, ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

**See applicable warranties for complete coverage and restrictions.*

TOPCOAT® SKY-LITE TECHNICAL DATA

Application Rate:	1 gallon/100 sq. ft. per coat
Application Method:	Roller or brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 1 hour per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 6 dry mils
Total Solids (by weight):	40.2% ± 2%
Total Solids (by volume):	35% ± 2%
Specific Gravity:	0.91 ± 0.1
Weight per Gallon:	7.6 ± 0.5 lbs
Viscosity (75°F):	3,000 ± 400 cps
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

LEED® Credit
Available

State of
Florida
Approved



SURFACE SEAL SB

Description

TOPCOAT® Surface Seal SB is a solvent-based, sprayable thermoplastic rubber coating, which cures to form a seamless rubber membrane. It is highly reflective, provides extra protection, and is highly flexible to accommodate temperature-related expansion and contraction of the roof system. Surface Seal SB (white only) is an ENERGY STAR® qualified reflective product that will help to reduce building temperatures. Surface Seal SB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Available in white and custom colors. Ideal for application on most commercial roofs in temperatures as low as 32°F, providing product is stored at room temperature prior to installation.

Uses

TOPCOAT® Surface Seal SB is a liquid-applied seamless sealant membrane used in the retrofit of most commercial roof surfaces. Surface Seal SB is designed to protect and restore aged modified bitumen, BUR, metal, wood, concrete, and EPDM roof surfaces, and to increase a roof's reflectivity. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).** Surface must be free of ponding water, ice, snow, and debris prior to application. Do not apply at temperatures below 32°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- ENERGY STAR® qualified reflectivity can dramatically decrease building temperatures (white only)
- Highly reflective and listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only)
- Ideal for modified bitumen, BUR, metal, wood, concrete, and EPDM
- Designed to be applied at temperatures as low as 32°F
- Strong; forms a flexible seal that will not become brittle
- Flexible; will expand and contract with roof
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 10 years*
- Available in 5-gallon pails, 55-gallon containers, and bulk totes
- Enhances the adhesion of GAF Liberty™ and Freedom™ Self-Adhering Membranes. Great for use in high wall flashings.

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM B117, ASTM C794, ASTM G21, FTMS 141.6271, ASTM D2196, ASTM D1475, ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

TOPCOAT® SURFACE SEAL SB TECHNICAL DATA

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, roller, or brush
Application Temp (air, surface):	32° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) – 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) – 8 dry mils
Total Solids (by weight):	64% ± 3%
Total Solids (by volume):	50% ± 2%
Specific Gravity:	1.20 ± 0.09
Weight per Gallon:	10.1 ± 0.5 lbs.
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	565 psi ± 10%
Elongation:	650%
Initial Reflectivity:	0.84 (white only)
Aged Reflectivity:	0.59 (white only)
Initial Emissivity:	0.90 (white only)
Aged Emissivity:	0.67, 3 year (white only)
Initial SRI:	106 (white only)
Aged SRI:	71 (white only)
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral spirits

LEED® Credit
Available



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SECTION 1B:

Flashing

FLASHING – BRUSH GRADE

Description

TOPCOAT[®] Flashing – Brush Grade is a light gray, water-based, 100% acrylic, synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations. It has superior adhesion, flexibility, and resistance to ultraviolet degradation.

Uses

TOPCOAT[®] Flashing – Brush Grade is designed for use on metal, wood, and concrete. Provides a seal along seams and around fasteners on metal roofs and excellent sealing around curbs and counter flashings. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- A synthetic rubber sealant that cures in the ultraviolet rays of the sun
- Water-based
- Strong; forms a flexible seal that will not become brittle
- Can be used in conjunction with TOPCOAT[®] Flashing Fabric to provide a superior seam
- Flexible; will expand and contract with metal roof
- Free from plasticizers and oils that will migrate out over time
- Required for joints, seams, penetrations, and fastener heads
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 20 years*†
- Available in 1-gallon, 5-gallon, and 55-gallon containers, and 1-quart cartridges

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM G21, ASTM D2196, ASTM D1475, ASTM E1644, and FTMS 141.6271

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

†When used as a part of a multi-ply system.

TOPCOAT[®] FLASHING – BRUSH GRADE TECHNICAL DATA

Application Rate (seams):	5 gallons/125 lineal ft. of seam (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Tensile:	225 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

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Available



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FLASHING – BRUSH GRADE WOB

Description

TOPCOAT® Flashing – Brush Grade WOB is a light gray, water-based, synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of TOPCOAT® Membrane. Like TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation.

Uses

TOPCOAT® Flashing – Brush Grade WOB is designed for use on metal, wood, and concrete. Provides a seal along seams and around fasteners on metal roofs and excellent sealing around curbs and counter flashings. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- A synthetic rubber sealant that cures in the ultraviolet rays of the sun
- Water-based
- Strong; forms a flexible seal that will not become brittle
- Flexible; will expand and contract with metal roof
- Free from plasticizers and oils that will migrate out over time
- Required for joints, seams, penetrations, and fastener heads
- Warranties available for up to 10 years*
- Guarantees available for up to 20 years*†
- Available in 1-gallon, 5-gallon, and 55-gallon containers, and 1-quart cartridges

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM G21, ASTM D2196, ASTM D1475, ASTM E1644, and FTMS 141.6271

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

†When used as a part of a multi-ply system.

TOPCOAT® FLASHING – BRUSH GRADE WOB TECHNICAL DATA

Application Rate (seams):	5 gallons/125 lineal ft. of seam (6" width)
Application Method:	Brush
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Tensile:	225 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing



FLASHING – LIQUID FABRIC

Description

TOPCOAT[®] Flashing – Liquid Fabric is a light gray, water-based, acrylic flexible liquid fabric seam sealer that does not require reinforcing fabric on properly fastened horizontal seams of metal roofs – reduces horizontal seam labor up to 50%. This product can be used to seal properly fastened horizontal seams on metal roofs without the use of TOPCOAT[®] Flashing Fabric when horizontal seams are properly secured as per product application specifications.

Uses

TOPCOAT[®] Flashing – Liquid Fabric is designed for use on metal, wood, and concrete to provide a strong flexible seal that will not become brittle. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Strong; forms a flexible seal that will not become brittle
- Flexible; will expand and contract with metal roof
- A time saver! Reduces horizontal seam labor up to 50%
- Ideal for properly fastened horizontal seams on metal roofs
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 20 years*†
- Available in 5-gallon pails and 55-gallon containers

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM G21, ASTM D2196, ASTM D1475, ASTM E1644, FTMS141.6271

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

**See applicable warranties and guarantees for complete coverage and restrictions.*

†When used as a part of a multi-ply system.

TOPCOAT[®] FLASHING – LIQUID FABRIC TECHNICAL DATA

Application Rate:	5 gallons/125 lineal ft. of seam (6" wide)
Application Method:	Brush or airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	71.7% ± 2%
Total Solids (by volume):	55% ± 2%
Specific Gravity:	1.35 ± 0.1
Weight per Gallon:	11.3 ± 0.5 lbs
Elongation:	700%
Viscosity (75°F):	130,000 ± 15,000 cps
Tensile:	225 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

LEED[®] Credit
Available



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FLASHING – SPRAY GRADE

Description

TOPCOAT® Flashing – Spray Grade is a light gray, water-based, 100% acrylic elastomeric sealant that is applied to seams, fasteners, flashings, and penetrations. It is identical to regular TOPCOAT® Flashing – Brush Grade with the exception of viscosity. It is designed to be easily applied with an airless sprayer. It has superior adhesion, flexibility, and resistance to ultraviolet degradation.

Uses

TOPCOAT® Flashing – Spray Grade is designed for use on metal, wood, and concrete. Provides a seal along seams and around fasteners on metal roofs and excellent sealing around curbs and counter flashings. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- A synthetic rubber sealant that cures in the ultraviolet rays of the sun
- Water-based
- Can be used in conjunction with TOPCOAT® Flashing Fabric to provide a superior seam
- Strong; forms a flexible seal that will not become brittle
- Flexible; will expand and contract with metal roof

- Free from plasticizers and oils that will migrate out over time
- Required for joints, seams, penetrations, and fastener heads
- Applied with an airless sprayer
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 20 years*†
- Available in 1-gallon, 5-gallon, and 55-gallon containers

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM D2196, ASTM D1475, and ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

**See applicable warranties and guarantees for complete coverage and restrictions.*

†When used as a part of a multi-ply system.

TOPCOAT® FLASHING – SPRAY GRADE TECHNICAL DATA

Application Rate (seams):	5 gallons/125 lineal ft. of seam (6" width)
Application Method:	Airless sprayer, brush, or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	140,000 ± 14,000 cps
Tensile:	225 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing



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FLASHING FABRIC

Description

TOPCOAT[®] Flashing Fabric is a stitch bond, 100% polyester web that can be used in a variety of roofing installations and repairs. Flashing Fabric is designed for use with TOPCOAT[®] FlexSeal[™] Sealants and MajorSeal[™] Liquid Flashing at all penetrations, joints, or other areas that are subjected to high shear or stress.

Uses

TOPCOAT[®] Flashing Fabric is designed for reinforcing application and repairs made with TOPCOAT[®] FlexSeal[™] Sealants and MajorSeal[™] Liquid Flashing.

Advantages

- Lower cost on repairs compared to torched MB patches and metal patches

- One product fits most repairs
- Extremely flexible and durable
- Guarantees for full system repairs are available for up to 20 years*
- Standard sizes available: 4" x 300', 6" x 300', 12" x 300'. 20" x 300' rolls available as special order

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

**See applicable warranties and guarantees for complete coverage and restrictions.*

TOPCOAT[®] FLASHING FABRIC TECHNICAL DATA

Average Weight (ounces per square yard):	3.4
Average Tensile Strength per ASTM D5034:	74 lbs. warp; 45 lbs. weft
Average Elongation at break per ASTM D5034:	21.3% warp; 51.3% weft
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs. warp; 24.2 weft
Thickness per ASTM D1777:	.018

SECTION 1C:

Primers and Cleaners



MP-300

Description

TOPCOAT[®] MP-300 is a light blue, acrylic water-based industrial primer/rust inhibitor that must be applied to any areas of rust before a TOPCOAT[®] Flashing or TOPCOAT[®] Membrane can be applied. Heavy, flaking rust and scale must be removed by scraping, wire brushing, or grit blasting, followed by power washing with water. MP-300 can be used to brush-treat small scattered areas of rust, or it can be sprayed over areas of widespread rust. It is non-flammable, VOC compliant, and cleans up with water.

Uses

TOPCOAT[®] MP-300 is designed for use on metal and should be applied over any areas of rust that remain on the substrate after pressure washing. All rust areas must be treated with MP-300 to prevent further deterioration of the metal roof panels. For use with water-based sealants and coatings only. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Used to inhibit further rust and provide added protection
- Light blue in color to ensure proper application
- Ideal for use in preventing rust from bleeding through TOPCOAT[®] Membrane
- Non-flammable, VOC compliant, and easy to clean up
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 20 years*†
- Available in 5-gallon pails, 55-gallon containers, and bulk totes

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM B117, ASTM C794, ASTM D2196, ASTM D1475, ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

**See applicable warranties and guarantees for complete coverage and restrictions.*

†When used as a part of a multi-ply system.

TOPCOAT[®] MP-300 TECHNICAL DATA

Application Rate:	1 gallon/100 sq. ft.
Application Method:	Brush or airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 2 hours
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 6 dry mils
Total Solids (by weight):	50% ± 1%
Total Solids (by volume):	40% ± 2%
Specific Gravity:	1.19 ± 0.1
Weight per Gallon:	9.9 ± 0.5 lbs
Viscosity (75°F):	5,000 ± 1,000 cps
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

LEED[®] Credit
Available



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PRECOTE

Description

TOPCOAT[®] Precote is a clear, solvent-based thermoplastic liquid to be applied as the primer/sealer coat on any areas of corrugated asbestos (Transite) panels.* Precote is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application.

Uses

TOPCOAT[®] Precote is a required step for treatment of corrugated asbestos panels providing optimum adhesion of TOPCOAT[®] Membrane. After application of Precote, the surface will be slightly tacky and will provide an excellent base for the application of TOPCOAT[®] Membrane. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Excellent primer and sealer for all areas of Transite panels
- Used to bind loose and friable surfaces
- Will leave the roof surface "tacky" and ready to provide a solid substrate for adhesion of TOPCOAT[®] Membrane

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

TOPCOAT[®] PRECOTE TECHNICAL DATA

Application Rate:	0.75 to 1 gallon /100 sq. ft.
Application Method:	Roller or brush
Application Temperature (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 30 minutes
Wet Mil Thickness:	12-16 (0.012"-0.016")
Dry Mil Thickness:	3-4 (0.003"-0.004")
Total Solids (by weight):	28.4% + 1%
Total Solids (by volume):	24.0% +/- 1%
Specific Gravity:	0.86 g/cc
Weight per Gallon:	7.2 ± 0.5 lbs
Viscosity (75°F):	200 ± 100 cps
Storage:	Store in well-ventilated area at 50° - 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Xylene, Toluene

***Note: Follow all EPA regulations concerning asbestos.**

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SURFACE SEAL SB PRIMER

Description

TOPCOAT® Surface Seal SB Primer is a light gray, solvent-borne, thermoplastic rubber-based industrial primer/rust inhibitor that must be applied to any areas of rust before TOPCOAT® Surface Seal SB Coating can be applied. It is ideal for priming aluminum coated metal roofs that are beginning to rust through the coating. Surface Seal SB Primer can be used to brush-treat small scattered areas of rust or it can be sprayed over areas of widespread rust. Heavy, flaking rust and scale must be removed by scraping, wire brushing, or grit blasting, followed by power washing with water.

Uses

TOPCOAT® Surface Seal SB Primer is designed for priming rusty metal roofs prior to applying TOPCOAT® Surface Seal SB Coating or TOPCOAT® Membrane or to making repairs with TOPCOAT® FlexSeal™. Unlike TOPCOAT® MP-300, it is compatible with asphalt-based coatings and cements. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).** Surface must be free of ponding water, ice, snow, and debris prior to application. Do not apply at temperatures below 32°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Can be applied at temperatures as low as 32°F
- Forms a flexible seal that will not become brittle
- Limited material warranty available for up to 10 years*
- Can be part of 20-year guarantee*†
- Available in 1-gallon and 5-gallon pails and 55-gallon drum

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM G21, ASTM B117, ASTM D1475, ASTM C794, ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

*†When used as a part of a multi-ply system.

TOPCOAT® SURFACE SEAL SB PRIMER TECHNICAL DATA

Application Rate:	1 gallon/100 sq. ft.
Application Method:	Airless sprayer or brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 2 hours
Wet Mil Thickness:	16 wet mils
Dry Mil Thickness:	7 dry mils
Total Solids (by weight):	60% ± 2%
Total Solids (by volume):	45% ± 2%
Specific Gravity:	1.21 ± 0.1
Weight per Gallon:	10.1 ± 0.5 lbs
Viscosity (75°F):	10,000 ± 2,000 cps
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits

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TPO RED PRIMER

FORMERLY TOPCOAT® TPO PRIMER

Description

TOPCOAT® TPO Red Primer is a VOC-compliant, solvent-based thermoplastic liquid to be applied to new or aged EverGuard® TPO membranes where adhesion of TOPCOAT® water-based coatings or MajorSeal™ Liquid Flashing is desired. TOPCOAT® TPO Red Primer is slightly tinted to distinguish primed areas on bright white TPO membranes. The surface of the treated area must be clean of all dirt, dust, and debris and be completely free of moisture prior to application of the primer.

Uses

TOPCOAT® TPO Red Primer is a required step when coating any NEW TPO (less than 3 months aged) and recommended for improved adhesion on any aged EverGuard® TPO membranes. TOPCOAT® TPO Red Primer is easy to install; it rolls on with a foam roller and dries quickly. Application of coating or sealant can begin as soon as the primer has dried completely. Compatible with TOPCOAT® water-based coatings, including TOPCOAT® Membrane and TOPCOAT® MB Plus.

Advantages

- Allows application of select TOPCOAT® coatings to NEW TPO (required for application to new TPO)
- Improves adhesion of TOPCOAT® coatings to aged TPO
- VOC compliant

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

TOPCOAT® TPO RED PRIMER TECHNICAL DATA

Application Rate:	0.5/100 sq. ft. per coat
Application Method:	Roller or brush
Application Temperature (air, surface):	42°F – 120°F
Drying Time (75°F, 50% RH):	Approximately 15 minutes
Wet Mil Thickness:	Up to 5
Dry Mil Thickness:	Up to 0.5
Total Solids (by weight):	2.5% ± 0.5%
Total Solids (by volume):	1%
Specific Gravity:	1.14 g/cc
Weight Per Gallon:	9.5 ± 0.5 lbs
Viscosity (75°F):	100 cps
Flash Point:	5°F
Storage:	Store in well-ventilated area at 50°F to 80°F
Shelf Life:	1 year
Clean-Up:	Xylene, Toluene
VOCs:	VOC compliant up to 1 gallon



XR-2000

Description

TOPCOAT[®] XR-2000 is a white, water-based, 100% acrylic adhesion-promoting primer designed to enhance the adhesion of the TOPCOAT[®] Roofing System to prefinished metal roofing. Due to the wide variety of preapplied finishes, suitability of XR-2000 must be tested on an individual basis.*

Uses

TOPCOAT[®] XR-2000 is designed to enhance the adhesion of the TOPCOAT[®] Roofing System to prefinished metal roofing, including those containing fluoropolymers such as Kynar[®] or siliconized polyesters. **For proper installation, substrate must have positive drainage (i.e., shall not pond water for a period longer than 48 hours).** Surface must be free of ponding water, ice, snow, and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Non-flammable, VOC compliant, and easy clean-up
- Good adhesion to factory-coated metal roofing
- Has rust-inhibiting properties
- Limited material warranty available for up to 10 years**
- Available in 1-gallon, 5-gallon, and 55-gallon containers

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM B117, ASTM E1644, ASTM C794, ASTM D1475

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See TOPCOAT[®] metal specifications for testing procedure.

**See applicable warranties for complete coverage and restrictions.

TOPCOAT[®] XR-2000 TECHNICAL DATA

Application Rate:	0.75 gallon/100 sq. ft.
Application Method:	Airless sprayer or roller
Application Temperature (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 6 hours
Recommended Wet Mil Thickness:	12 wet mils
Recommended Dry Mil Thickness:	5 dry mils
Total Solids (by weight):	52.5% + 1%
Total Solids (by volume):	40% ± 1%
Specific Gravity:	1.22 ± 0.1
Weight per Gallon:	10.2 ± 0.5 lbs
Viscosity (75°F):	3,500 ± 350 cps
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

LEED[®] Credit
Available



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SECTION 1D:

Sealants



FLEXSEAL™ CAULK GRADE

Description

TOPCOAT® FlexSeal™ Caulk Grade is a white solvent-based synthetic elastomeric sealant. FlexSeal™ Caulk Grade is extremely flexible and durable, but with a higher viscosity formulation than standard viscosity FlexSeal™. Like all solvent-based products, the surface must be clean and completely free of moisture and residual contaminants before application. FlexSeal™ Caulk Grade is especially suited for use in any application where caulk is typically used. If a more fluid viscosity is desired, FlexSeal™ is also available in both a standard viscosity as FlexSeal™ and a low-viscosity version as FlexSeal™ LV.

Uses

TOPCOAT® FlexSeal™ Caulk Grade is designed for use on metal, copper, concrete, wood, asphalt shingles, SBS, APP, EPDM, BUR, TPO, and PVC substrates. Especially designed for use where elastomeric caulks are required, like term bar applications or around clamping rings at penetrations. FlexSeal™ Caulk Grade may be used for cold-weather applications provided that the material is stored properly and the substrate is dry prior to application. This product is easiest to apply at temperatures above 32°F (0°C). Substrate temperatures must be below 120°F (48.9°C) when applying product.

Advantages

- Extremely flexible and durable
- Ideal for termination bar, railing, step flashings, or edge metal
- Durable and UV resistant; will not chalk, crack, or peel
- Joint movement capability maximum \pm 25%

- Bonds to multiple substrates including metal, copper, concrete, wood, asphalt shingles, SBS, APP, EPDM, BUR, TPO, and PVC
- Paintable
- Limited material warranty available for up to 10 years*
- May be used in guaranteed projects up to 20 years**
- Available in 10-oz. cartridges

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

FlexSeal™ Caulk Grade meets ASTM D412 and D920; and is tested in accordance with D2196 and D1475.

Application Considerations

FlexSeal™ Caulk Grade is not a structural component and it is not intended to bridge large voids. Joint depth should not exceed 1/2" wide by 1/2" deep (13 mm x 13 mm). If joint exceeds 1/2" (13 mm) deep, the sealant depth should be controlled by a closed cell backer rod. The number of joints and width of joints should be designed to accommodate a maximum of 25% movement.

Note: Apply only as directed. Over-application may result in slumping, dripping, or unsightly appearance.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.
**When used as a part of a multi-ply system. TOPCOAT® FlexSeal™ Caulk Grade is a maintenance item and should be inspected periodically as a part of regular roof maintenance.

TOPCOAT® FLEXSEAL™ CAULK GRADE TECHNICAL DATA

Application Rate:	Approximately 1/4 -3/8 inch (6 – 10 mm) bead
Application Method:	Caulk gun
Application Temp (air, surface):	32°F - 120°F (0°C – 48.9°C)
Drying Time (varies by conditions):	24 – 48 hrs; skins in less than 1 hour; full cure - approximately 48 hours
Total Solids (by weight):	77% \pm 2%
Specific Gravity:	1.24 \pm 0.1
Weight per Gallon:	10.3 \pm 0.5 lbs
Viscosity (75°F (23.9°C)):	1,200,000 cps \pm 10%
Tensile:	>250 psi (>1.72 N/sq mm)
Storage:	Recommended storage temperature range 50°F-90°F (10°C-32.2°C). Storage for continued periods outside this temperature range may shorten shelf life.
Shelf Life:	Approximately 1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene



TOPCOAT®

LIQUID-APPLIED ROOFING

FLEXSEAL™ / FLEXSEAL™ LV

Description

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ – FlexSeal™ LV – is available for use in confined areas.

Uses

TOPCOAT® FlexSeal™ is designed for use on metal, concrete, wood, copper, SBS, APP, EPDM, and BUR substrates. For use on all areas of roof substrates, including gutters and detail areas. Can be used for cold-weather application. This product is easiest to apply at temperatures above 32°F. Substrate temperatures must be below 120°F when applying product.

Advantages

- Extremely flexible and durable
- Self-leveling; perfect on low-slope roof surfaces
- Seals and restores existing pitch pans
- Ideal for term bar, railing, step flashings, or edge metal
- Durable and UV resistant; will not chalk, crack, or peel
- Solvent-based sealant

- Ideal for metal, concrete, plywood, copper, SBS, APP, EPDM, BUR, and TPO
- Limited material warranty available for up to 10 years*
- Guarantees available for up to 20 years†
- Available in 1-gallon, 5-gallon, and 55-gallon containers in addition to 1-quart cartridges and 10 oz. cartridges

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

Applicable Standards

ASTM D412, ASTM D2196, ASTM D1475, and ASTM E1644

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

*See applicable warranties and guarantees for complete coverage and restrictions.

†When used as a part of a multi-ply system.

TOPCOAT® FLEXSEAL™ – FLEXSEAL™ LV TECHNICAL DATA

Application Rate:	5 gallons/125@6"
Application Method:	Trowel or stiff bristle brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV - Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

LEED® Credit
Available

State of
Florida
Approved



SECTION 2:

Quick Specs and Tips



FIRESHIELD® ROOF SYSTEM – SMOOTH-SURFACE BUR

Original Application

- Traditional Installations: Smooth-surface built-up roofs.
- Typical Property: Commercial, industrial, and public buildings.
- Reason for Installation: Low life cycle cost based on moderate original installed cost.

System Advantage

Add life and performance to existing smooth built-up roofs.
Provide fire-resistant protection to achieve a UL Class A Rated roof.

Features

- Reflective: Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds new weathering layer to old roof.
- Low Maintenance: Eliminates need to re-coat every 2-3 years.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: Cool Roof Rating CouncilSM listed (white only); high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 65 ± 2% solids; average membrane thickness is 18 dry mils when applied at a total of 2 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Make typical repairs using original roof technology.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers using TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Spray-apply base coat of FireShield® MB at 1 gallon per square.
- Step 7) Spray-apply finish coat of FireShield® MB at 1 gallon per square.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



FIRESHIELD® ROOF SYSTEM— TORCH SMOOTH APP

Original Application

- Traditional Installations: Torch smooth APP roofs.
- Typical Property: Commercial, industrial, and public buildings.
- Reason for Installation: Low life cycle cost based on moderate original installed cost.

System Advantage

Add life and performance to existing smooth Torch APP roofs.
Provide fire-resistant protection to achieve a UL Class A Rated roof.

Features

- Reflective: Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds new weathering layer to old roof.
- Low Maintenance: Eliminates need to re-coat every 2-3 years.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: Cool Roof Rating CouncilSM listed (white only); high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 65 ± 2% solids; average membrane thickness is 18 dry mils when applied at a total of 2 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Make typical repairs using original roof technology.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers using TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Spray-apply base coat of FireShield® Coating at 1.00 gallon per square.
- Step 7) Spray-apply finish coat of FireShield® Coating at 1.05 gallon per square.

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*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



FIRESHIELD® ROOF SYSTEM – GRANULE SURFACE

Original Application

- Traditional Installations: Mineral-surfaced cap, mop granule, and torch granule roofs.
- Typical Property: Commercial, industrial, and public buildings.
- Reason for Installation: Low life cycle cost based on moderate original installed cost.

System Advantage

Add life and reflectivity to existing granule surfaced modified bitumen roofs. Provide fire-resistant protection to achieve a UL Class A Rated roof.

Features

- Reflective: Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds new weathering layer to old roof and protects MB from UV.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: Cool Roof Rating CouncilSM listed (white only); high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: 65 ± 2% solids; average membrane thickness is 27 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants, no dangers from tear-offs.
- Better Aesthetics: Great-looking, monolithic membrane.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Make typical repairs using original roof technology.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers using TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Spray-apply base coat of FireShield® MB at 1.00 gallon per square.
- Step 7) Spray-apply finish coat of FireShield® MB at 1.00 gallon per square.

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*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



BUR/MB ROOF SYSTEM – SMOOTH SURFACE



Original Application

- Traditional Installations: Smooth-surface built-up roofs or modified bitumen roofs.
- Typical Property: Commercial, industrial, and public buildings.
- Reason for Installation: Low life cycle cost based on moderate original installed cost.

System Advantage

Add life and performance to existing smooth built-up and smooth-surface modified bitumen roofs.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds new weathering layer to old roof.
- Low Maintenance: Eliminates need to re-coat every 2-3 years.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only); high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 65 ± 2% solids; average membrane thickness is 26 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Make typical repairs using original roof technology.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers using TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Spray-apply base coat of TOPCOAT® MB Plus at 1.25 gallon per square.
- Step 7) Spray-apply finish coat of TOPCOAT® MB Plus at 1.75 gallon per square.

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*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



MB ROOF SYSTEM – GRANULE SURFACE



Original Application

- Traditional Installations: Granule-surfaced modified bitumen roofs (SBS or APP).
- Typical Property: Commercial, industrial, and public buildings.
- Reason for Installation: Low life cycle cost based on moderate original installed cost.

System Advantage

Add life and reflectivity to existing granule-surfaced modified bitumen roofs. Provide UV protection to help prevent breakdown of existing membrane.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds new weathering layer to old roof, and protects MB from UV.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only); high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: 65 ± 2% solids; average membrane thickness is 26 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.
- Better Aesthetics: Great-looking, monolithic membrane.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Make typical repairs using original roof technology.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers using TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Spray-apply base coat of TOPCOAT® MB Plus at 1.25 gallon per square.
- Step 7) Spray-apply finish coat of TOPCOAT® MB Plus at 1.75 gallon per square.

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*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



METAL ROOF SYSTEM WITH 20-YEAR NDL



Original Application

- Traditional Installations: Standing seam or ribbed metal roofs with exposed fasteners.
- Typical Property: Manufacturing, warehouses, and retail buildings.
- Reason for Installation: Lowest cost and fastest commercial construction method.

System Advantage

A complete restoration system for a leaky or rusty metal roof at a fraction of the cost of new metal or a single-ply overlay.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).

Guarantee/Warranty Eligibility

- Eligible for 20-year Diamond Pledge™ NDL Guarantee.*
- 10-year limited warranty on materials.*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- 20-year Diamond Pledge™ NDL Roof Guarantee.*
- 10-year limited warranty on materials.*
- Guarantees and limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 ± 5% solids; average membrane thickness is 40-45 dry mils when applied at a total of 4.5 gallons per square.
- Lightweight: Adds less than one pound per square to existing structure.

Quick Spec

- Step 1) Tighten and/or replace existing fasteners.
- Step 2) Pressure-wash roof.
- Step 3) Install crickets to divert water and complete other necessary sheet metal repairs.
- Step 4) Prime rusty areas with TOPCOAT® MP-300 at 1 gallon per square.
- Step 5) Treat horizontal seams with 6" wide band of TOPCOAT® Flashing – Liquid Fabric at 5 gallons per 125 lineal feet or TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric. Remove all residual asphalt.
- Step 6) Treat vertical seams with bead of TOPCOAT® Flashing Grade at 5 gallons per 450 lineal feet.
- Step 7) Treat all roof penetrations, skylights, and rake edges with TOPCOAT® Flashing Grade embedded in 6" TOPCOAT® Flashing Fabric at 5 gallons per 125 lineal feet.
- Step 8) Encapsulate exposed fasteners with TOPCOAT® Flashing Grade.
- Step 9) GAF Quality Assurance Representative will perform interim inspection.**
- Step 10) Apply base coat of TOPCOAT® Membrane at 1.5 gallons per square.
- Step 11) Apply intermediate coat of TOPCOAT® Membrane at 1.5 gallons per square.
- Step 12) Apply finish coat of TOPCOAT® Membrane at 1.5 gallons per square.

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*See limited warranty and guarantee for complete coverage and restrictions. Roof must have positive drainage.

**Required for warranty issuance.

NOTE: This quick specification is for water-based products.



METAL ROOF SYSTEM WITH 15-YEAR NDL



Original Application

- Traditional Installations: Standing seam or ribbed metal roofs with exposed fasteners.
- Typical Property: Manufacturing, warehouses, and retail buildings.
- Reason for Installation: Lowest cost and fastest commercial construction method.

System Advantage

A complete restoration system for a leaky or rusty metal roof at a fraction of the cost of new metal or a single-ply overlay.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds 52 wet mils of liquid-applied membrane to existing surface.

Guarantee/Warranty Eligibility

- Eligible for 15-year Diamond Pledge™ NDL Guarantee.*
- 10-year limited warranty on materials.*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- 15-year Diamond Pledge™ NDL Roof Guarantee.*
- 10-year limited warranty on materials.*
- Guarantee and limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 ± 5% solids; average membrane thickness is 29-32 dry mils when applied at 3.25 gallons per square inches & coats.
- Lightweight: Adds less than one pound per square to existing structure.

Quick Spec

- Step 1) Tighten and/or replace existing fasteners.
- Step 2) Pressure-wash roof.
- Step 3) Install crickets to divert water and complete other necessary sheet metal repairs.
- Step 4) Prime rusty areas with TOPCOAT® MP-300 at 1 gallon per square.
- Step 5) Treat horizontal seams with 6" wide band of TOPCOAT® Flashing - Liquid Fabric at 5 gallons per 125 lineal feet or TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Treat vertical seams with bead of TOPCOAT® Flashing Grade at 5 gallons per 450 lineal feet.
- Step 7) Treat all roof penetrations, skylights, and rake edges with TOPCOAT® Flashing Grade embedded in 6" TOPCOAT® Flashing Fabric at 5 gallons per 125 lineal feet.
- Step 8) Encapsulate exposed fasteners with TOPCOAT® Flashing Grade.
- Step 9) GAF Quality Assurance Representative will perform interim inspection.**
- Step 10) Apply base coat of TOPCOAT® Membrane at 1.5 gallons per square.
- Step 11) Apply finish coat of TOPCOAT® Membrane at 1.75 gallons per square.

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*See limited warranty and guarantee for complete coverage and restrictions. Roof must have positive drainage.
**Required for warranty issuance.

NOTE: This quick specification is for water-based products.



METAL ROOF SYSTEM WITH 10-YEAR NDL



Original Application

- Traditional Installations: Standing seam or ribbed metal roofs with exposed fasteners.
- Typical Property: Manufacturing, warehouses, and retail buildings.
- Reason for Installation: Lowest cost and fastest commercial construction method.

System Advantage

A complete restoration system for a leaky or rusty metal roof at a fraction of the cost of new metal or a single-ply overlay.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds 32 wet mils of liquid-applied membrane to existing surface.

Guarantee/Warranty Eligibility

- Eligible for 10-year Diamond Pledge™ NDL Guarantee.*
- 10-year limited warranty on materials.*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Diamond Pledge™ NDL Roof Guarantee.*
- 10-year limited warranty on materials.*
- Guarantee and limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 ± 5% solids; average membrane thickness is 18-20 dry mils when applied at a total of 2 gallons per square.
- Lightweight: Adds less than one pound per square to existing structure.

Quick Spec

- Step 1) Tighten and/or replace existing fasteners.
- Step 2) Pressure-wash roof.
- Step 3) Install crickets to divert water and complete other necessary sheet metal repairs.
- Step 4) Prime rusty areas with TOPCOAT® MP-300 at 1 gallon per square.
- Step 5) Treat horizontal seams with 6" wide band of TOPCOAT® Flashing - Liquid Fabric at 5 gallons per 125 lineal feet or TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 6) Treat vertical seams with bead of TOPCOAT® Flashing Grade at 5 gallons per 450 lineal feet.
- Step 7) Treat all roof penetrations, skylights, and rake edges with TOPCOAT® Flashing Grade embedded in 6" TOPCOAT® Flashing Fabric at 5 gallons per 125 lineal feet.
- Step 8) Encapsulate exposed fasteners with TOPCOAT® Flashing Grade.
- Step 9) GAF Quality Assurance Representative will perform interim inspection.**
- Step 10) Apply base coat of TOPCOAT® Membrane at 1 gallon per square.
- Step 11) Apply finish coat of TOPCOAT® Membrane at 1 gallon per square.

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*See limited warranty and guarantee for complete coverage and restrictions. Roof must have positive drainage.

**Required for warranty issuance.

NOTE: This quick specification is for water-based products.



EPDM ROOF SYSTEM

Original Application

- Traditional Installations: Fully adhered or mechanically attached EPDM rubber roof systems.
- Typical Property: Large low-rise buildings, warehouses, and public buildings.
- Reason for Installation: Low original installed cost.

System Advantage

Adds life and performance to an existing fully adhered or mechanically attached EPDM roof.

Features

- Reflective: Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds second weathering layer to single-ply roof.

Warranty Eligibility

Weather Stopper[®] Integrated System Limited Warranty*

TOPCOAT[®] System Advantages

- Reflectivity: Cool Roof Rating Council listed (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 65 ± 2% solids; average membrane thickness is 14 dry mils when applied at a total of 2 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct required moisture scan and remove/replace all wet areas.
- Step 2) Use garden sprayer to apply TOPCOAT[®] EPDM System Cleaner at 1 gallon per 500 square feet.
- Step 3) Pressure-wash roof.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers using TOPCOAT[®] Flashing Fabric embedded into TOPCOAT[®] Flashing Grade.
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT[®] Flashing Grade and TOPCOAT[®] Flashing Fabric.
- Step 6) Spray-apply base coat of TOPCOAT[®] EPDM Coating at 1 gallon per square.
- Step 7) Spray-apply finish coat of TOPCOAT[®] EPDM Coating at 1 gallon per square.

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*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



PLYWOOD ROOF SYSTEM

Minimum Slope 1:12



Original Application

- Traditional Installations: Commercial and residential buildings; locations which have high UV radiation.
- Typical Property: Commercial low-rise buildings, storage facilities, and some residential locations.
- Reason for Installation: Low installed cost, high reflectivity, resistance to UV.

System Advantage

Due to the high level of UV in the U.S. Virgin Islands and Hawaii, most other roofing products fail early in their life span. TOPCOAT® will stand up to the harshest UV environment.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds 30 - 32 dry mils of liquid-applied membrane to existing surface.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Weather Stopper® Integrated System Limited Warranty.*
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 ± 3% solids; average membrane thickness is 24 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Quick Spec

- Step 1) Pressure-wash roof.
- Step 2) Remove and replace any damaged areas of plywood.
- Step 3) Treat all roof penetrations, spits, drains and scuppers with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 4) Spray-apply base coat of TOPCOAT® Membrane at 1.25 gallons per square.
- Step 5) Spray-apply finish coat of TOPCOAT® Membrane at 1.75 gallons per square.

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*See limited warranty for complete coverage and restrictions. Roof must have positive drainage.

NOTE: This quick specification is for water-based products.



STRUCTURAL CONCRETE ROOF SYSTEM

Original Application

- Traditional Installations: structural concrete roofs.
- Typical Property: Large buildings, commercial-owned storage, silos, and some residential homes.
- Reason for Installation: Increase reflectivity of the roof surface.

System Advantage

Cost effective solution to repairing or covering a structural concrete roof. Will not add additional load to the roof.

Features

- Reflective: Changes surface color to white.
- Durable: Adds 27- 30 dry mils of liquid-applied membrane to existing surface.

Guarantee/Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*
10-year Diamond Pledge™ NDL Roof Guarantee*

TOPCOAT® System Advantages

- Reflectivity: High-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Weather Stopper® Integrated System Limited Warranty.*
- Guarantee and limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 +/- 3% solids; average membrane thickness is 27-30 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Quick Spec

- Step 1) Pressure-wash roof.
- Step 2) Treat all cracks greater than 1/8" width with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade. For cracks and fissures less than 1/8" wide, only Flashing Grade needs to be applied.
- Step 3) Spray-apply base coat of TOPCOAT® Membrane at 1.25 gallons per square.
- Step 4) Spray-apply finish coat of TOPCOAT® Membrane at 1.75 gallons per square.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See limited warranty and guarantee for complete coverage and restrictions. Roof must have positive drainage.

NOTE: This quick specification is for water-based products.



TPO ROOF SYSTEM



Original Application

- Traditional Installations: Fully adhered or mechanically attached TPO roof systems.
- Typical Property: Large low-rise buildings, warehouses, and public buildings.
- Reason for Installation: Low original installed cost and reflectivity.

System Advantage

Adds life and performance to an existing fully adhered or mechanically attached TPO Roof. If TOPCOAT® PVDF Coating is utilized, dirt pick-up will be greatly reduced.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds second weathering layer to single-ply roof.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Weather Stopper® Integrated System Limited Warranty.*
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 65 ± 2% solids; average membrane thickness is 27-30 dry mils when applied at a total of 3 gallons per square.
- Can be applied to new or aged TPO.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct required moisture scan and remove/replace all wet areas.¹
- Step 2) Pressure-wash roof.
- Step 3) Prime roof with TOPCOAT® TPO Red Primer at .5 gallons per square.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.²
- Step 5) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.²
- Step 6) Spray-apply base coat of TOPCOAT® Membrane at 1.00 gallons per square.
- Step 7) Spray-apply finish coat of TOPCOAT® Membrane at 1.50 gallons per square.
- Step 8) If roof is being coated to minimize dirt pick-up, TOPCOAT® PVDF Coating can be applied at 1.0 gallons per square in lieu of TOPCOAT®.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See limited warranty for complete coverage and restrictions.

¹ Old TPO

² If not new

NOTE: This quick specification is for water-based products.



HYPALON® AND PVC ROOF SYSTEM



Original Application

- Traditional Installations: Fully adhered or mechanically attached Hypalon® or PVC roof systems.
- Typical Property: Large low-rise buildings, warehouses, and public buildings.
- Reason for Installation: Low original installed cost and reflectivity.

System Advantage

Adds life and performance to an existing fully adhered or mechanically attached Hypalon® or PVC roof.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds second weathering layer to single-ply roof.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Weather Stopper® Integrated System Limited Warranty.*
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 65 ± 2% solids; average membrane thickness is 27-30 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct required moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Treat all roof penetrations, splits, drains, and scuppers with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 4) Treat all loose seams with 6" wide area of TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 5) Spray-apply base coat of TOPCOAT® Membrane at 1.00 gallons per square.
- Step 6) Spray-apply finish coat of TOPCOAT® Membrane at 1.50 gallons per square.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



POLYURETHANE FOAM ROOF SYSTEM



Original Application

- Traditional Installations: Commercial buildings with polyurethane roofs.
- Typical Property: Large low-rise buildings, warehouses, and public buildings.
- Reason for Installation: Low original installed cost; no tear-off required for existing roof.

System Advantage

Adds life and performance to existing polyurethane foam.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds 28 - 32 dry mils of liquid-applied membrane to existing surface.
- Protection: Protects polyurethane roof from ultraviolet rays.

Warranty Eligibility

Weather Stopper® Integrated System Limited Warranty*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Weather Stopper® Integrated System Limited Warranty.*
- Limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 ± 3% solids; average membrane thickness is 28 -32 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Requirements

- Moisture scan.
- Roof must have positive drainage.

Quick Spec

- Step 1) Conduct required moisture scan and remove/replace all wet areas.
- Step 2) Pressure-wash roof.
- Step 3) Remove and replace any damaged or wet areas of foam.
- Step 4) Treat all roof penetrations, splits, drains, and scuppers with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Spray-apply base coat of TOPCOAT® Membrane at 1.25 gallons per square.
- Step 6) Spray-apply finish coat of TOPCOAT® Membrane at 1.75 gallons per square.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See limited warranty for complete coverage and restrictions.

NOTE: This quick specification is for water-based products.



CORRUGATED TRANSITE PANELS ROOF SYSTEM



Original Application

- Traditional Installations: Transite paneled roofs.
- Typical Property: Large low-rise buildings, warehouses, storage facilities, and public buildings.
- Reason for Installation: To avoid high cost associated with asbestos abatement.

System Advantage

Will encapsulate asbestos fibers; no need for asbestos abatement.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only). Cool Roof Rating CouncilSM listed reflective product (white only).
- Durable: Adds 28-32 dry mils of liquid-applied membrane to existing surface.

Guarantee Eligibility

- Eligible for 10-year Diamond Pledge™ NDL Roof Guarantee.*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- 10-year Diamond Pledge™ NDL Roof Guarantee.*
- Guarantee backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 +/- 3% solids; average membrane thickness is 28 - 32 dry mils when applied at a total of 3 gallons per square.
- Less Disruption: No hassles for building inhabitants; no dangers from tear-offs.

Quick Spec

- Step 1) Pressure-wash roof.
- Step 2) Remove and replace any damaged areas of transite panels.
- Step 3) Roller apply TOPCOAT® Precote at 0.75 gallons per square.
- Step 4) Treat all roof penetrations, spits, drains, and scuppers with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 5) Spray-apply base coat of TOPCOAT® Membrane at 1.25 gallons per square.
- Step 6) Spray-apply finish coat of TOPCOAT® Membrane at 1.75 gallons per square.

Note: Follow all EPA regulations concerning asbestos.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See guarantee for complete coverage and restrictions. Roof must have positive drainage.

NOTE: This quick specification is for water-based products.



EXTERIOR METAL WALL SYSTEM



Original Application

- Traditional Installations: Exterior metal walls.
- Typical Property: Large low-rise buildings, warehouses, and public buildings.
- Reason for Installation: Waterproof and protect vertical metal surfaces.

System Advantage

Protection for walls provides superior water resistance, great looks, and the long-lasting protection of an elastomeric membrane.

Features

- Reflective: ENERGY STAR® qualified reflective product (white only).
- Durable: Adds 32 wet mils of liquid-applied membrane to existing surface.
- Protection: Waterproofs and protects walls; decorative.

Guarantee/Warranty Eligibility

- Weather Stopper® Integrated System Limited Warranty.*
- Can be part of the 20-year Diamond Pledge™ NDG Guarantee.*

TOPCOAT® System Advantages

- Reflectivity: ENERGY STAR® qualified (white only) high-reflectivity can mean substantial energy savings by reducing interior building temperatures.
- Diamond Pledge™ NDG Roof Guarantee.*
- Weather Stopper® Integrated System Limited Warranty.*
- Guarantee and limited warranty backed by GAF, North America's largest roofing materials manufacturer.*
- High Solids: Liquid-applied membrane with 71 ± 5% solids; average membrane thickness is 18-20 dry mils when applied at 2 gallons per square.
- Performance: Elastomeric properties provide stronger resistance to discoloration and fading while helping to resist blistering, flaking, and peeling.
- Extra Protection: Helps to prevent weather infiltration while providing a breathable membrane.

Quick Spec

- Step 1) Pressure-wash walls.
- Step 2) Treat all wall penetrations and scuppers with TOPCOAT® Flashing Fabric embedded into TOPCOAT® Flashing Grade.
- Step 3) Treat all horizontal seams with TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric.
- Step 4) Spray-apply base coat of TOPCOAT® Membrane at 1 gallon per square.
- Step 5) Spray-apply finish coat of TOPCOAT® Membrane at 1 gallon per square.

This Quick Spec is meant only as an overview of installation procedures. It is not meant to replace the detailed specification requirements that appear in the Low-Slope / Restoration System Specifications section of this Manual. Be sure to review detailed specification prior to beginning any project.

*See limited warranty and guarantee for complete coverage and restrictions. Roof must have positive drainage.

NOTE: This quick specification is for water-based products.



TOPCOAT® RECOMMENDED EQUIPMENT

The GAF Technical Services Department recommends that the following tools and equipment be on site and available for the preparation and installation of TOPCOAT® Repair and/or Maintenance Systems:

- Adequate water source for pressure washing and clean-up
- Adequate source of electrical power
- Wire brush for removing rust
- Utility knives
- Metal snips
- Reciprocating saw
- Drill or screw gun for tightening fasteners (or T-bar with hex fitting to match fastener size)
- Polyurethane foam or closed-cell foam strips to fill excessive voids in ridge vents, duct work, etc., before TOPCOAT® Flashing and TOPCOAT® Flashing Fabric are applied
- Thick-bristle brushes (2"- 4") to apply various TOPCOAT® products
- Low-nap rollers to apply various TOPCOAT® products
- Caulking guns for application of TOPCOAT® Flashing Grade in cartridges
- Self-drilling stitching screws to properly secure seams, ridge cap, and penetrations
- Pressure washer with minimum working pressure of 3,000 psi equipped with roto-spray tip
- Airless spray system with a minimum working pressure of 2,000 psi/3,000 psi (remove filters) and reversible spray tips for TOPCOAT® product application
- Leister Heat Gun or soldering pencil with pencil tip to make holes in TOPCOAT® Flashing Fabric around fasteners that are present when three-coursing
- Rags

For application questions, please contact GAF Technical Services at 1-800-766-3411.



TOPCOAT® SPRAYER SPECIFICATIONS AND RECOMMENDATIONS

The use of an airless sprayer system with several of the TOPCOAT® products saves time and labor. It allows for easier application over uneven surfaces and provides uniform mil thickness. The airless sprayer system also enables the product to be applied at an average of three to six gallons per minute. The following is a guideline for spraying TOPCOAT® products.

Recommendations:

- Before spraying TOPCOAT® products, it is important to do a complete site assessment, checking proximity of any items such as vehicles, other buildings, etc., that may come in contact with overspray during the spray process.
- Always leave spray equipment on the ground. This will reduce the risk of roof overload. The sprayer should be set up on a level surface with good access to roof and water supply (for clean-up and pressure washing).
- To allow for maximum safety and efficiency, use three persons for the spray process (one for spraying, one for guiding the hose, and one on the ground with spray equipment).
- When spraying TOPCOAT® products, hold gun perpendicular to roof surface, approximately 12"-14" away. Move gun at a correct, even speed, overlapping each stroke approximately 50% to obtain a smooth, uniform product thickness ("wet on wet" spraying).
- All terminations of TOPCOAT®, such as on ductwork, air conditioning units, etc., must be squared-off and neat to maintain good aesthetic value.

Specifications:

- Minimum Gallons per Minute: 2 gallons for TOPCOAT® Coatings
3 gallons for TOPCOAT® Flashing - Spray Grade
- Minimum Working Pressure: 3,000 psi
- Reversible Tip Sizes: .033" (except MP-300, which would use .021")
- Recommended Hose Length: 250' - 400' maximum (pump dependent)
- Recommended Hose Diameter Breakdown: 3/4" to 1/2" hose
- Power Source: Gasoline-Powered Engine, Minimum 16hp/Hydraulic Operated Pump
- Recommended Gun: Pistol Grip Flo Thru Gun

IMPORTANT:

When using airless spray equipment, always follow manufacturer's safety regulations and guidelines. GAF will not be liable for any equipment failures or malfunctions.



SECTION 3:

Low-Slope/Restoration System Specifications

FireShield® System Specifications – Smooth BUR

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The FireShield® Roofing System can be applied on smooth built-up roofing (BUR). This specification addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications shall be used for installations on smooth BUR.

1.02 SUBSTRATE CONDITIONS

- A. The FireShield® Roofing System is to be applied over smooth, dry, sound asphaltic BUR only. Roof must have positive drainage. Do not apply on coal tar substrates or roofs that have been covered with gravel. Smooth BUR surface must be older than 90 days. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any smooth BUR roof. TOPCOAT® Coatings will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The FireShield® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the FireShield® Roofing System for any given smooth BUR roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

1.05 REGULATORY REQUIREMENTS

UL Listing: Provide FireShield® Roofing System and component materials that have been evaluated by Underwriters Laboratories for flame-spread, and are listed in "Underwriters Laboratory Roofing Materials and Systems Directory" for Class A construction over existing smooth BUR roofing (unlimited slope). Provide roof-covering materials bearing UL approval marking on container, which indicates that material has been subjected to UL's examination, test procedures, and follow-up inspection service.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. FireShield® MB

FireShield® MB is a water-based acrylic sprayable liquid that cures to form a seamless rubber membrane. Its unique technology maintains UL rating, and can turn virtually any BUR or modified bitumen roof system into a UL Class A rated roof.* FireShield® MB (white only) meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. FireShield® MB is formulated to provide maximum fire protection, increase a roof's reflectivity, and to protect the roof substrate from harmful ultraviolet rays. It is highly flexible to accommodate temperature-related expansion and contraction of the roof system, a leading cause of roof system failure. Substrate shall not pond water for a period longer than 48 hours. Surface must be free of ponding water, ice, snow, and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

* Provided the assembly is UL listed.

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	67% ± 2%
Total Solids (by volume):	55% ± 2%
Specific Gravity:	1.34 ± 0.1
Weight per Gallon:	11.2 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	100 psi
Elongation:	275%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

E. FireShield® SB

FireShield® SB is a solvent-based, liquid thermoplastic rubber sealant that cures to form a seamless rubber membrane. FireShield® SB, with its unique technology, will maintain or may improve UL rating on select roofing systems or assemblies.* FireShield® SB is designed to enhance your roof system's protective performance by providing unique fire-extinguishing properties. Special fire-resistant ingredients in the product react with heat and fire, causing a chemical reaction to occur. A non-combustible carbon char layer is formed that retards flame propagation by reducing available oxygen. FireShield® SB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. Sprayable, seamless FireShield® systems install fast without the tear-off, staging, and disposal associated with traditional systems.

* Provided the assembly is UL listed.

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	66% ± 2%
Total Solids (by volume):	48% ± 2%
Specific Gravity:	1.23 ± 0.1
Weight per Gallon:	10.2 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	100 psi
Elongation:	550%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Treatment of Damaged/Deteriorated BUR: Any areas where BUR has blistered, buckled, and/or become wet must be removed and repaired using similar products manufactured by GAF (new BUR repair materials must be allowed to weather at least 30 days before applying TOPCOAT® products to these repaired areas). All areas where the BUR surface has significantly craze-cracked (i.e., gaps in width and/or depth greater than 1/16") must be repaired using TOPCOAT® FlexSeal™ to bring the substrate to a smooth, workable surface. TOPCOAT® FlexSeal™ can be applied by either squeegee or brush when repairing craze cracks. Allow at least 24 hours drying time before application of other TOPCOAT® products (additional drying time must be allowed when very thick TOPCOAT® FlexSeal™ applications are required).
- C. Substrate Cleaning: Roof substrate must be carefully pressure-washed with water. Use an approximate working pressure of 2,000 psi (depending on condition of roof) to remove all dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, then pressure-wash surface.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION OF FIRESHIELD® MB SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing smooth BUR substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- C. Coating Application:
NOTE: Recommended method for application of FireShield® MB is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.
1. Spray-apply base coat of FireShield® MB at a rate of 1 gallon per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of FireShield® MB at a rate of 1 gallon per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours has elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 18 mils field and 80 mils on roof penetration details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services Department at 1-800-522-9224.

FireShield® System Specifications – Torch Smooth APP

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The FireShield® Roofing System can be applied on torch smooth APP. This specification addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications shall be used for installations on torch smooth APP.

1.02 SUBSTRATE CONDITIONS

- A. The FireShield® Roofing System is to be applied over smooth, dry, sound APP only. Roof must have positive drainage. Do not apply on coal tar substrates or roofs that have been covered with gravel. Smooth APP surface must be older than 90 days. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any smooth APP roof. TOPCOAT® Coatings will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The FireShield® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the FireShield® Roofing System for any given smooth APP roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

1.05 REGULATORY REQUIREMENTS

UL Listing: Provide FireShield® Roofing System and component materials that have been evaluated by Underwriters Laboratories for flame-spread, and are listed in "Underwriters Laboratory Roofing Materials and Systems Directory" for Class A construction over existing Torch Smooth APP roofing (unlimited slope). Provide roof-covering materials bearing UL approval marking on container, which indicates that material has been subjected to UL's examination, test procedures, and follow-up inspection service.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. This product is easiest to apply in temperatures above 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application.

A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a non-woven, spun bonded 100% polyester web that must be used in conjunction with TOPCOAT® Flashing Grade, FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. FireShield® MB

FireShield® MB is a water-based acrylic sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. Its unique technology can turn virtually any BUR or modified bitumen roof system into a UL Class A rated roof.* FireShield® MB (white only) meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. FireShield® MB is formulated to provide maximum fire protection, increase a roof's reflectivity, and to protect the roof substrate from harmful ultraviolet rays. It is highly flexible to accommodate temperature-related expansion and contraction of the roof system, a leading cause of roof system failure. Substrate shall not pond water for a period longer than 48 hours. Surface must be free of ponding water, ice, snow, and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

* Provided the assembly is UL listed.

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	67% ± 2%
Total Solids (by volume):	55% ± 2%
Specific Gravity:	1.34 ± 0.1
Weight per Gallon:	11.2 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	100 psi
Elongation:	275%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

D. FireShield® SB

FireShield® SB is a solvent-based, liquid thermoplastic rubber sealant that cures to form a seamless rubber membrane. FireShield® SB, with its unique technology, will maintain or may improve UL rating on select roofing systems or assemblies. *FireShield® SB is designed to enhance your roof system's protective performance by providing unique fire-extinguishing properties. Special fire-resistant ingredients in the product react with heat and fire, causing a chemical reaction to occur. A non-combustible carbon char layer is formed that retards flame propagation by reducing available oxygen. FireShield® SB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high-reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. Sprayable, seamless FireShield® systems install fast, without the tear-off, staging, and disposal associated with traditional systems.

* Provided the assembly is UL listed.

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush or roller
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	66% ± 2%
Total Solids (by volume):	48% ± 2%
Specific Gravity:	1.23 ± 0.1
Weight per Gallon:	10.2 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	100 psi
Elongation:	550%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Treatment of Damaged/Deteriorated APP: Any areas where APP has blistered, buckled, and/or become wet must be removed and repaired using similar products manufactured by GAF (new APP repair materials must be allowed at least 30 days to weather before applying TOPCOAT® products to these repaired areas). All areas where the APP surface has significantly craze cracked (i.e., gaps in width and/or depth greater than 1/16") must be repaired using TOPCOAT® FlexSeal™ to bring the substrate to a smooth, workable surface. TOPCOAT® FlexSeal™ can be applied by either squeegee or brush when repairing craze cracks. Allow at least 24 hours drying time before application of other TOPCOAT® products (additional drying time must be allowed when very thick TOPCOAT® FlexSeal™ applications are required).
- C. Substrate Cleaning: Roof substrate must be carefully pressure-washed with water. Use an approximate working pressure of 2,000 psi (depending on condition of roof) to remove all dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, then pressure-wash surface.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION OF FIRESHIELD® MB SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one (1) layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing smooth BUR or MB substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- C. Coating Application:
NOTE: Recommended method for application of FireShield® MB is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.
1. Spray-apply base coat of FireShield® MB at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of FireShield® MB at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 27 mils field and 80 mils on roof penetration details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services Department at 1-800-522-9224.

FireShield® System Specifications – Mineral-Surfaced, Mop Granule, and Torch Granule APP Cap Sheets

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The FireShield® Roofing System can be applied on mineral-surfaced, mop granule, and torch granule APP cap sheets. This section addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications shall be used for installations on mineral-surfaced, mop granule, and torch granule APP cap sheets.

1.02 SUBSTRATE CONDITIONS

- A. The FireShield® Roofing System is to be applied over dry, sound asphaltic mineral-surfaced, mop granule, and torch granule APP cap sheets only. Roof must have positive drainage. Do not apply on coal tar substrates or roofs that have been covered with gravel. Cap sheets must be older than 90 days. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any roofs having granule cap sheets. TOPCOAT® products will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The FireShield® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the FireShield® Roofing System for any given granule cap sheet roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

1.05 REGULATORY REQUIREMENTS

UL Listing: Provide FireShield® Roofing System and component materials that have been evaluated by Underwriters Laboratories for flame-spread, and are listed in "Underwriters Laboratory Roofing Materials and Systems Directory" for Class A construction over existing Mineral Surface, Mop Granule and Torch Granule APP roofing (unlimited slope). Provide roof-covering materials bearing UL approval marking on container, which indicates that material has been subjected to UL's examination, test procedures, and follow-up inspection service.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. FireShield® MB

FireShield® MB is a water-based acrylic sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. Its unique technology can turn virtually any BUR or modified bitumen roof system into a UL Class A rated roof.* FireShield® MB (white only) meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. FireShield® MB is formulated to provide maximum fire protection, increase a roof's reflectivity, and to protect the roof substrate from harmful ultraviolet rays. It is highly flexible to accommodate temperature-related expansion and contraction of the roof system, a leading cause of roof system failure. Substrate shall not pond water for a period longer than 48 hours. Surface must be free of ponding water, ice, snow, and debris prior to application. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

* Provided the assembly is UL listed.

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	67% ± 2%
Total Solids (by volume):	55% ± 2%
Specific Gravity:	1.34 ± 0.1
Weight per Gallon:	11.2 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	100 psi
Elongation:	275%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Water before curing

D. FireShield® SB

FireShield® SB is a solvent-based, liquid thermoplastic rubber sealant that cures to form a seamless rubber membrane. FireShield® SB, with its unique technology, will maintain or may improve UL rating on select roofing systems or assemblies.* FireShield® SB is designed to enhance your roof system's protective performance by providing unique fire-extinguishing properties. Special fire-resistant ingredients in the product react with heat and fire, causing a chemical reaction to occur. A non-combustible carbon char layer is formed that retards flame propagation by reducing available oxygen. FireShield® SB (white only) is listed by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance. Its high reflectivity and thermal emittance will help to reduce heat gain to preserve the roof substrate, lower interior temperatures, and reduce cooling costs. Sprayable, seamless FireShield® systems install fast without the tear-off, staging, and disposal associated with traditional systems.

* Provided the assembly is UL listed.

Application Rate:	1.0 to 1.75 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, brush or roller
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	66% ± 2%
Total Solids (by volume):	48% ± 2%
Specific Gravity:	1.23 ± 0.1
Weight per Gallon:	10.2 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	100 psi
Elongation:	550%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Treatment of Damaged/Deteriorated Substrates: Any areas where the substrate has blistered, buckled, and/or become wet must be removed and repaired using similar products manufactured by GAF (new substrate repair materials must be allowed at least 30 days to weather before applying TOPCOAT® products to these repaired areas). All areas where the surface has significantly craze-cracked (i.e., gaps in width and/or depth greater than 1/16") must be repaired using TOPCOAT® FlexSeal™ to bring the substrate to a smooth, workable surface. TOPCOAT® FlexSeal™ can be applied by either squeegee or brush when repairing craze cracks. Allow at least 24 hours drying time before application of other TOPCOAT® products (additional drying time must be allowed when very thick TOPCOAT® FlexSeal™ applications are required).
- C. Substrate Cleaning: Roof substrate must be carefully swept to remove debris and loose granules. Then lightly pressure-wash the roof with water. Use an approximate working pressure of 1,500 - 2,000 psi (depending on condition of roof) to remove remaining dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION OF FIRESHIELD® MB SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing fiberglass or modified bitumen granule cap sheet substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- C. Coating Application:
- NOTE: Recommended method for application of FireShield® MB is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.**
1. Spray-apply base coat of FireShield® MB at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of TOPCOAT® MB Plus at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 27 mils field and 80 mils on roof penetration details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services Department at 1-800-522-9224.

TOPCOAT® System Specifications—Smooth BUR and Smooth-Surface Modified Bitumen



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on smooth built-up roofing (BUR) and smooth modified bitumen (MB). This specification addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications shall be used for installations on smooth BUR and MB.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over smooth, dry, sound asphaltic BUR or MB only. Roof must have positive drainage. Do not apply on coal tar substrates or roofs that have been covered with gravel. Smooth BUR or MB surface must be older than 90 days. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any smooth BUR or MB roof. TOPCOAT® Coatings will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given smooth BUR or MB roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a solvent-based, synthetic rubber sealant designed for use in a wider range of temperatures. FlexSeal™ must be used as the flashing material wherever TOPCOAT® Surface Seal SB will be used as the base coating. This product offers unique flow properties that allow encapsulation of fasteners with little or no tooling. This product is easiest to apply in temperatures above 32°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard):	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. TOPCOAT® MB Plus



TOPCOAT® MB Plus is a water-based, acrylic, low VOC, sprayable polymeric liquid that cures to form a seamless rubber membrane. Covers and protects most roof surfaces including modified bitumen (smooth and granulated), smooth BUR, Hypalon®, and metal. MB Plus (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It is highly reflective, flexible, and due to unique emulsion chemistry, resists unsightly bleed-through over asphalt substrates better than solvent-based systems. Available in white (for maximum reflectivity) and custom colors. It is non-flammable, presents minimal hazard to the applicator or the environment, and cleans up with water. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	65% ± 2%
Total Solids (by volume):	54% ± 2%
Specific Gravity:	1.32 ± 0.1
Weight per Gallon:	11.0 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	150 psi
Elongation:	275%
Clean-Up:	Water before curing

E. TOPCOAT® Surface Seal SB



TOPCOAT® Surface Seal SB is a solvent-based, sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. It is highly reflective, provides extra protection, and is highly flexible to accommodate temperature-related expansion and contraction of the roof system. Surface Seal SB (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). Available in white, aluminum, and custom colors. Ideal for application on most commercial roofs in temperatures as low as 32°F, providing product is stored at room temperature prior to installation. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 1.5 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, roller or brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 8 dry mils
Total Solids (by weight):	64% ± 3%
Total Solids (by volume):	50% ± 2%
Specific Gravity:	1.20 ± 0.09
Weight per Gallon:	10.1 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	700 psi
Elongation:	650%
Clean-Up:	Mineral spirits

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.

- B. Treatment of Damaged/Deteriorated BUR or MB: Any areas where BUR or MB has blistered, buckled, and/or become wet must be removed and repaired using similar products manufactured by GAF (new BUR or MB repair materials must be allowed to weather at least 30 days before applying TOPCOAT® products to these repaired areas). All areas where the BUR or MB surface has significantly craze-cracked (i.e., gaps in width and/or depth greater than 1/16") must be repaired using TOPCOAT® FlexSeal™ to bring the substrate to a smooth, workable surface. TOPCOAT® FlexSeal™ can be applied by either squeegee or brush when repairing craze cracks. Allow at least 24 hours drying time before application of other TOPCOAT® products (additional drying time must be allowed when very thick TOPCOAT® FlexSeal™ applications are required).
- C. Substrate Cleaning: Roof substrate must be carefully pressure-washed with water. Use an approximate working pressure of 2,000 psi (depending on condition of roof) to remove all dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, then pressure-wash surface.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION OF SURFACE SEAL SB SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® FlexSeal™, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of FlexSeal™ to completely embed the Fabric. Feather the FlexSeal™ onto the existing smooth BUR or MB substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® FlexSeal™ and TOPCOAT® Flashing Fabric, as required.
- C. Coating Application:
NOTE: Recommended method for application of Surface Seal SB is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.
 1. Spray-apply base coat of TOPCOAT® Surface Seal SB at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of TOPCOAT® Surface Seal SB at a rate of 1.75 gallons per 100 sq. ft. Do not apply finish coat unless the base coat is clean and dry and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 24 mils field and 80 mils on roof penetration details.

3.03 APPLICATION OF MB PLUS SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing smooth BUR or MB substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.

C. Coating Application:

NOTE: Recommended method for application of MB Plus is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.

1. Spray-apply base coat of TOPCOAT® MB Plus at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
2. Spray-apply finish coat (same color as base coat) of TOPCOAT® MB Plus at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and will provide proper adhesion.
3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 27 mils field and 80 mils on roof penetration details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services Department at 1-800-522-9224.

TOPCOAT® Restoration Specifications – Fiberglass and Modified Bitumen Granulated Cap Sheets



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on fiberglass and modified bitumen granule-surfaced cap sheets. This section addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications shall be used for installations on fiberglass and modified bitumen granulated cap sheets.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over dry, sound asphaltic fiberglass or modified bitumen granule cap sheets only. Roof must have positive drainage. Do not apply on coal tar substrates or roofs that have been covered with gravel. Fiberglass or modified bitumen granule cap sheets must be older than 30 days. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any roofs having fiberglass or modified bitumen granule cap sheets. TOPCOAT® products will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given granulated cap sheet roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a solvent-based, synthetic rubber sealant designed for use in a wider range of temperatures. FlexSeal™ must be used as the flashing material wherever Surface Seal SB will be used as the base coating. This product offers unique flow properties that allow encapsulation of fasteners with little or no tooling. This product is easiest to apply in temperatures above 32°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. TOPCOAT® MB Plus



TOPCOAT® MB Plus is a water-based, acrylic, low VOC, sprayable polymeric liquid that cures to form a seamless rubber membrane. Covers and protects most roof surfaces including modified bitumen (smooth and granulated), smooth BUR, Hypalon®, and metal. MB Plus(white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It is highly reflective, flexible, and due to unique emulsion chemistry, resists unsightly bleed-through over asphalt substrates better than solvent-based systems. Available in white (for maximum reflectivity) and custom colors. It is non-flammable, presents minimal hazard to the applicator or the environment, and cleans up with water. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	65% ± 2%
Total Solids (by volume):	54% ± 2%
Specific Gravity:	1.32 ± 0.1
Weight per Gallon:	11.0 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	150 psi
Elongation:	275%
Clean-Up:	Water before curing

E. TOPCOAT® Surface Seal SB



TOPCOAT® Surface Seal SB is a solvent-based, sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. It is highly reflective, provides extra protection and is highly flexible to accommodate temperature-related expansion and contraction of the roof system. Surface Seal SB (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). Available in white, aluminum, and custom colors. Ideal for application on most commercial roofs in temperatures as low as 32°F, providing product is stored at room temperature prior to installation. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 1.5 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, roller or brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 8 dry mils
Total Solids (by weight):	64% ± 3%
Total Solids (by volume):	50% ± 2%
Specific Gravity:	1.20 ± 0.09
Weight per Gallon:	10.1 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	700 psi
Elongation:	650%
Clean-Up:	Mineral spirits

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.

- B. Treatment of Damaged/Deteriorated BUR or MB: Any areas where BUR or MB has blistered, buckled, and/or become wet must be removed and repaired using similar products manufactured by GAF (new BUR or MB repair materials must be allowed to weather at least 30 days before applying TOPCOAT® products to these repaired areas). All areas where the fiberglass or modified granule cap sheet has significantly cracked and/or crazed (i.e., gaps in width and/or depth greater than 1/16") must be repaired using TOPCOAT® FlexSeal™ to bring the substrate to a smooth, workable surface. TOPCOAT® FlexSeal™ can be applied by either squeegee or brush when repairing cracks and/or crazing. Allow at least 24 hours drying time before application of other TOPCOAT® products (allow additional drying time when very thick FlexSeal™ applications are required).
- C. Substrate Cleaning: Roof substrate must be carefully swept to remove debris and loose granules. Then lightly pressure-wash the roof with water. Use an approximate working pressure of 1,500 - 2,000 psi (depending on condition of roof) to remove remaining dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION OF SURFACE SEAL SB SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® FlexSeal™ and one layer of 6" TOPCOAT® Flashing Fabric. Feather the FlexSeal™ onto the existing fiberglass or modified bitumen granule cap sheet substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® FlexSeal™ and TOPCOAT® Flashing Fabric, as required.
- C. Coating Application:
NOTE: Recommended method for application of TOPCOAT® Surface Seal SB is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.
 1. Spray-apply base coat of TOPCOAT® Surface Seal SB at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of TOPCOAT® Surface Seal SB at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 24 mils field and 80 mils on roof penetration details.

3.03 APPLICATION OF MB PLUS SYSTEM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing fiberglass or modified bitumen granule cap sheet substrate.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.

C. Coating Application:

NOTE: Recommended method for application of TOPCOAT® MB Plus is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.

1. Spray-apply base coat of TOPCOAT® MB Plus at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
2. Spray-apply finish coat (same color as base coat) of TOPCOAT® MB Plus at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 27 mils field and 80 mils on roof penetration details.
3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 27 mils field and 80 mils on roof penetration details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services Department at 1-800-522-9224.

TOPCOAT® System Specifications – EPDM



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on both fully adhered and mechanically fastened EPDM. This section addresses unique aspects for this type of installation.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over dry, sound EPDM only. Roof must have positive drainage. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any EPDM roof. TOPCOAT® products will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system shall be used that is approved by GAF.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given EPDM roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® EPDM System Cleaner

A clear to pink, water-based, sprayable liquid. Required to insure good adhesion to EPDM. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/500 sq. ft.
Application Method:	Garden sprayer or spray bottle
Application Temp (surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 30 minutes
Total Solids (by weight):	16% ± 2%
Viscosity:	Same as water
PH:	11 - 12
Clean-Up:	Water
Precautions:	Avoid contact with eyes and skin; wear appropriate protective equipment

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

E. TOPCOAT® Surface Seal SB



TOPCOAT® Surface Seal SB is a solvent-based, sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. It is highly reflective, provides extra protection, and is highly flexible to accommodate temperature-related expansion and contraction of the roof system. Surface Seal SB (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). Available in white, aluminum, and custom colors. Ideal for application on most commercial roofs in temperatures as low as 32°F, providing product is stored at room temperature prior to installation. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 1.5 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, roller or brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 8 dry mils
Total Solids (by weight):	64% ± 3%
Total Solids (by volume):	50% ± 2%
Specific Gravity:	1.20 ± 0.09
Weight per Gallon:	10.1 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	700 psi
Elongation:	650%
Clean-Up:	Mineral Spirits

F. TOPCOAT® EPDM Coating

TOPCOAT® EPDM Coating is a water-based, acrylic, reflective, highly flexible liquid-applied membrane designed to protect and provide reflectivity to EPDM and other single-ply roofs. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). Designed to be used after the roof has been treated with our proprietary TOPCOAT® EPDM System Cleaner. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft. per coat
Application Method:	Airless sprayer or roller
Application Temp: (surface):	42°-120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 8 dry mils
Total Solids (by weight):	65% ± 2%
Total Solids (by volume):	52% ± 2%
Specific Gravity:	1.32 ± 0.1
Weight per Gallon:	11.0 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	200 psi
Clean-Up:	Water before curing

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive coating. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Treatment of Damaged/Deteriorated EPDM: Any areas where EPDM has torn, cracked, and/or buckled must be repaired using similar products. **Any wet insulation must be replaced as part of the roofing repair.**
- C. Substrate Cleaning: Apply TOPCOAT® EPDM System Cleaner at a rate of 1 gal per 500 sq. ft. Cleaner should be applied with industrial garden pump sprayer. The roof substrate must then be carefully pressure-washed with water with an approximate working pressure of 2,000 psi (depending on condition of roof) to remove remaining dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, and then pressure-wash.

TOPCOAT® EPDM System Cleaner is essential for maximum adhesion of TOPCOAT® FlexSeal™, Surface Seal SB, and EPDM Coating, and is required for the application.

- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.
- **TIP:** A white towel rubbed over the surface should remain white.

3.02 APPLICATION OF MECHANICALLY FASTENED EPDM ROOF SYSTEM

- A. All roof penetration areas, drains, and scuppers must be treated with a 6" strip of TOPCOAT® Flashing Fabric embedded into TOPCOAT® FlexSeal™. At flashings where there is changing of plane, the TOPCOAT® Flashing Fabric should be applied 3" up the vertical and 3" onto the horizontal. Feather the FlexSeal™ to the existing EPDM substrate and allow to dry at least 24 hours.
- B. All seams and joints must be treated with a 6" wide area of TOPCOAT® FlexSeal™. Feather the FlexSeal™ onto the existing EPDM substrate. Any seams that are delaminated will need fabric.
- C. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® FlexSeal™ and TOPCOAT® Flashing Fabric, as required.
- D. Coating Applications:
1. Coating Application—Solvent Base:

Note: Recommended method for application of TOPCOAT® Surface Seal SB and EPDM Coating is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.

 - a. Spray-apply base coat of TOPCOAT® Surface Seal SB at a rate of .5 gallon per 100 sq. ft. as primer coat. Allow at least 24 hours drying time and inspect the base/primer coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 - b. Spray-apply finish coat (same color as base coat) of TOPCOAT® Surface Seal SB at a rate of 1.5 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion.
 - c. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 16 mils field and 75 mils on roof penetration details and problem seams.

2. Coating Application–Water Base:

- a. Spray-apply base coat of TOPCOAT® EPDM Coating at a rate of 1.0 gallon per 100 sf. Overlap TOPCOAT® EPDM Coating onto ponding water areas previously treated with TOPCOAT® Surface Seal SB (overlapping 2 ft). Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
- b. Spray-apply finish coat of TOPCOAT® EPDM Coating at a rate of 1.0 gallon per 100 sf. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion.
- c. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 16 mils field and 75 mils on roof penetration details and problem seams.

3.03 APPLICATION OF FULLY ADHERED EPDM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" strip of TOPCOAT® Flashing Fabric embedded into TOPCOAT® FlexSeal™. At flashings where there is changing of plane, the TOPCOAT® Flashing Fabric should be applied 3" up the vertical and 3" onto the horizontal. Feather the TOPCOAT® FlexSeal™ to the existing EPDM substrate and allow to dry at least 24 hours.
- B. All seams and joints must be treated with a 6" wide area of TOPCOAT® Flashing Fabric and TOPCOAT® Flashing Grade.
- C. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® FlexSeal™ and TOPCOAT® Flashing Fabric, as required.

D. Coating Applications:

Note: Recommended method for application of TOPCOAT® Surface Seal SB and EPDM Coating is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.

1. Spray-apply base coat of TOPCOAT® Surface Seal SB at a rate of .5 gallon per 100 sq. ft. as primer coat. Allow at least 24 hours drying time and inspect the base/primer coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
2. Spray-apply finish coat (same color as base coat) of TOPCOAT® Surface Seal SB at a rate of 1.5 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean, dry, and will provide proper adhesion.
3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 16 mils field and 75 mils on roof penetration details and problem seams.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

TOPCOAT® System Specifications – Plywood



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on plywood roof substrates. This section addresses any unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications and detail drawings shall be used for installations on plywood roof substrates.

1.02 SUBSTRATE CONDITIONS

The TOPCOAT® Roofing System is to be applied over sound, plywood roof sheathing having the following specifications:

- 1) Thickness for single ply sheathing shall be a minimum of 3/4".
 - 2) Grade shall be structural exterior, Group 1.
 - 3) Finish veneers shall be minimum of CD PTS.
 - 4) GAF recommends that the plywood have a smooth-finished side because imperfections in the substrate may telegraph through the TOPCOAT® Membrane.
- A. The plywood deck must have a minimum slope of 1":12". Substrate should not pond water for a period longer than 48 hours after precipitation stops.
 - B. The plywood deck must be mechanically attached with screws and metal plates of a size, type, and finish needed to meet or exceed local codes.
 - C. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, cover the TOPCOAT® Roofing System where traffic will occur with a rooftop walkway system approved by GAF.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given plywood roof, please contact GAF’s Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018



C. TOPCOAT® Membrane

TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric roofing membrane specially designed to seal the entire roof. TOPCOAT® (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing

(Continued on next page)

Weatherability :	<ul style="list-style-type: none"> • 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. • 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration. • 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original
Clean-Up:	Water and mild soap

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until preparatory work has been completed or until unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Pressure Washing: Substrate must be pressure-washed with water. Use minimum working pressure of 2,000 psi to remove all dirt, dust, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.).
- C. Substrate must be clean, dry, and free of debris before application of TOPCOAT® products.

3.02 APPLICATION

- A. All seams, joints, roof penetrations, and stress areas must be treated with a 6" width (minimum) of TOPCOAT® Flashing Grade, one (1) layer of TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Smooth flashing areas with a trowel or brush to feather the Flashing Grade onto the plywood deck. Imperfections in the Flashing Grade may telegraph through the TOPCOAT® Membrane, compromising the final appearance.
- B. Fasteners: Encapsulate any exposed fasteners with TOPCOAT® Flashing Grade. Ensure the Flashing Grade is feathered neatly over and around the fasteners (for aesthetic purposes).
- C. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- D. Spray-apply base coat (Gray) of TOPCOAT® Membrane at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
- E. Spray-apply finish coat (White) of TOPCOAT® Membrane at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion.
- F. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 28 mils field and 88 mils on flashing details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

TOPCOAT® Restoration Specifications – Structural Concrete

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

Extent of TOPCOAT® Roofing System work is indicated on the drawings and is further defined by provisions of this section, which includes roofing, flashing, and reinforcing of joints and junctions and roof penetrations/accessories. Areas to be reroofed include existing structural concrete roofs as indicated on drawings. Final determination of the fitness of the TOPCOAT® Roofing System, or its components, for any given concrete roof may not be made by any representative of GAF other than a member of GAF's Technical Services Department.

1.02 GUARANTEE

Provide TOPCOAT® Diamond Pledge™ NDL Roof Guarantee* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given concrete roofs, please contact GAF's Technical Services Department.

**See guarantee for complete coverage and restrictions.*

1.03 SUBMITTALS

Submit copy of TOPCOAT® technical product data sheets, installation instructions, and samples for each type of required roofing product.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide primary products, including TOPCOAT® Membrane, TOPCOAT® Flashing Grade, TOPCOAT® Flashing Fabric, etc., by a single manufacturer (GAF), which has produced this type of product successfully for not less than twenty years. Provide secondary products only as approved by GAF, for use with the specified TOPCOAT® Roofing System.
- B. Installer Qualifications: A single Installer or firm ("Installer") shall perform all work addressed in this section, and shall be certified by GAF, for installation of the TOPCOAT® Roofing System.

1.05 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over structural concrete only. Must have positive drainage. Concrete roof substrate must be completely cured and dry before application of TOPCOAT® products. Substrate should not pond water for a period longer than 48 hours. TOPCOAT® shall not be used for application on lightweight concrete.
- B. The TOPCOAT® Roofing System is not to be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF should be installed.
- C. The bonding surface must be free of ponding water, ice, and snow, and should have a **horse hair or semi-coarse finish**.
- D. If any questions arise regarding the compatibility of TOPCOAT® products with an existing substrate, Installer shall prepare test patches to check adhesion (addressed in Part 3 of this specification). Always contact GAF's Technical Services Department concerning questionable substrates, or for required additional information and recommended test patch materials.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. A sprayable version of Flashing Grade (Flashing Grade Spray Formula) is available for use. Flashing Grade Spray Formula has all the same properties as regular Flashing Grade, but is lower in viscosity. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Method - Spray Formula:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (Ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D1117:	13.5 lbs
Thickness per ASTM D1777:	.018

C. TOPCOAT® Membrane

TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied coating, which cures to form a seamless rubber membrane that covers the entire structural concrete roof. It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. Ultraviolet rays enhance curing. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.25 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer, brush or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Clean-Up:	Water before curing

D. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

E. Airless Sprayer and Accessories

As recommended by GAF's Technical Services Department for application of sprayable TOPCOAT® products.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSTRATE

A. Examine Substrates To Receive New Roofing

Do not proceed with installation of TOPCOAT® Roofing System until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer (GAF). Roof must have positive drainage.

B. Preparation Of The Roof Substrate Is The Responsibility Of The Installer

Installer shall address and correct all of the following:

1. Treatment of large gaps and cracks
2. Treatment of ponding water areas
3. Thorough cleaning/removal of existing paints and coatings
4. Treatment of residual asphalt
5. Miscellaneous items

C. Treatment of Large Gaps and Cracks

All large gaps and cracks (greater than 1/4") shall be repaired using a high-quality concrete grout. Grout must be fully cured before application of TOPCOAT® products.

D. Treatment of Ponding Water Areas

Installer shall make every effort to eliminate all ponding water areas on the roof prior to application of TOPCOAT® products ("ponding water" is defined as water that does not properly drain and remains for more than 48 hours after precipitation stops).

E. Roof Cleaning

Structural concrete substrate must be pressure-washed with water. Use minimum working pressure of 3,000 psi to remove all dirt, dust, previous paints/coatings that are delaminating, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.). All existing silicone-based sealants must be completely removed from roof substrate prior to application of TOPCOAT® products.

F. Treatment of Residual Asphalt

Installer shall make every effort to remove asphaltic roofing elements. Removal efforts must include use of methods such as pressure washing, scrappers, wire brushes, electrical drill wire-wheels, or other similar tools. Residual asphalt is defined as asphaltic material remaining after the exercise of all required removal efforts, and exists when there is asphaltic material greater in thickness than 3 mils over an area greater than 1 square foot. Residual asphaltic areas are to be addressed with TOPCOAT® MB Plus.

G. Preparation of Test Patches

Installer shall prepare no less than three (3) test patches for all questionable roof substrates to verify adhesion of TOPCOAT® products. Minimum test patch size shall be one square foot. After the test patches have been applied, allow at least one week of drying time before checking adhesion. Check adhesion by slicing an "X" (approx. 6" in size) near the center of the test patch. Then try to remove the TOPCOAT® material at the center of the "X" with a spatula. Test patches that show good adhesion will release or chip from the surface in very small pieces. Test patches which peel off of the surface show a surface that is not acceptable. Test patches shall be labeled and photographed to document adhesion test results. Installer shall consult with GAF's Technical Services Department concerning all adhesion test results.

H. Miscellaneous Items

1. Pitch Pans: For most situations, pitch pans shall be capped with sheet metal so they can be sealed with TOPCOAT® Flashing Grade/TOPCOAT® Flashing Fabric, TOPCOAT® FlexSeal™/TOPCOAT® Flashing Fabric, or FlexSeal™. Contact GAF's Technical Services Department for particulars.
2. Neoprene Pipe Boots: GAF recommends installation of neoprene boots prior to flashing work being performed for certain types of pipe penetrations. Neoprene boots must first be sealed to the roof using a bead of TOPCOAT® FlexSeal™ prior to mechanical attachment with fasteners. Contact GAF's Technical Services Department for particulars.

3. Condensate Lines: GAF recommends installation of condensate lines from HVAC units to gutters as part of the overall roofing contract. Type of piping used for condensate lines may vary depending on local building codes. Lines must be securely fastened to the concrete deck.

3.02 APPLICATION AND INSPECTION INFORMATION

- A. Flashing Work: All joints, cracks, stress areas, and roof penetrations must be treated with a 6" wide area of TOPCOAT® Flashing Grade or one layer of TOPCOAT® Flashing Fabric and a final layer of Flashing Grade to completely embed the TOPCOAT® Flashing Fabric. Flashing Grade must be feathered at least 1" beyond each side of the 6" width to allow water to flow over the seam.
- B. Interim Inspection: Inspect substrate preparation and flashing work for problem areas (e.g., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory prior to application of TOPCOAT® Membrane.
- C. Inform Project Architect and GAF Guarantee Services Department when all substrate preparation and flashing work will be complete and the Installer is ready to proceed with application of TOPCOAT® Membrane. Allow a minimum of two (2) weeks for the interim inspection to be made by GAF's Field Services Department. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or the GAF Technical Services Department.

3.03 COATING APPLICATIONS

- A. Spray-apply base coat (gray) of TOPCOAT® Membrane at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
- B. Spray-apply finish coat (white) of TOPCOAT® Roofing Membrane at a rate of 1.75 gallons per 100 sq. ft. It should not be applied unless the base coat is clean and dry and will provide proper adhesion. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of roof surface.
- C. After at least 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc. Specified dry mil thickness is 28 - 32 mils in the field of the roof. All unsatisfactory areas must be repaired.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

TOPCOAT® System Specifications – Hypalon® and PVC



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on Hypalon® and PVC. This specification addresses unique aspects for this type of installation.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over dry, sound Hypalon® or PVC only. Roof must have positive drainage. Hypalon® or PVC must be older than one year. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any Hypalon® or PVC roof. TOPCOAT® Coatings will not adhere to any existing silicone-based coatings.
- C. **The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given Hypalon® or PVC roof, please contact GAF's Technical Services Department.

**See limited warranty for complete coverage and restrictions.*

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures and/or very thick product application to prevent improper curing and/or product “wash-off”.

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/150 ft. (6" width)
Application Method:	Stiff bristle brush, trowel, or caulking gun
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	77% ± 1%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Tensile:	485 psi ± 10%
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
Clean-Up:	Mineral Spirits, Toluene, Xylene

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. TOPCOAT® Membrane



TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric roofing membrane specially designed to seal the entire roof. TOPCOAT® Membrane (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D-1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Weatherability :	<ul style="list-style-type: none">• 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26.• 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.• 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original
Clean-Up:	Water and mild soap

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Treatment of Damaged/Deteriorated Hypalon® or PVC: Any areas where Hypalon® or PVC has torn, cracked, and/or buckled must be repaired using similar products manufactured by GAF. Any wet insulation must be replaced as part of the roofing repair. Allow at least 24 hours drying time before application of other TOPCOAT® products.
- C. Substrate Cleaning: Roof substrate must be carefully pressure-washed with water. Use an approximate working pressure of 2,000 psi (depending on condition of roof) to remove all dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, then pressure wash surface.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing Hypalon® or PVC substrate. Seams that are suspected of leaking shall also be sealed in this manner.
- B. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- C. Coating Application:
Note: Recommended method for application of TOPCOAT® Membrane is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.
 1. Spray-apply base coat of TOPCOAT® at a rate of 1.0 gallon per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of TOPCOAT® at a rate of 1.5 gallons per 100 sq. ft. Do not apply finish coat unless the base coat is clean and dry and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 20 mils field and 80 mils on roof penetration details and problem seams.

TOPCOAT® System Specifications – TPO



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on new or aged TPO. This specification addresses unique aspects for this type of installation.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over dry, sound TPO only. Roof must have positive drainage. Do not apply TOPCOAT® products over friable and/or brittle roofing. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check adhesion of TOPCOAT® products before application on any TPO roof. TOPCOAT® Coatings will not adhere to any existing silicone-based coatings.
- C. The bonding surface must be free of ponding water, ice, snow, splits, oils, grease, and debris.
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* or TOPCOAT® Emerald Pledge™ NDL Restoration Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given TPO roof, please contact GAF's Technical Services Department.

* See limited warranties for complete coverage and restrictions.

1.04 REQUIREMENTS

- A. Project Registration
- B. A copy of the moisture scan must be submitted to GAF as a requirement for warranty issuance.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas.

Application Rate (seams):	5 gallons total/150 ft. (6" width)
Application Method:	Stiff bristle brush, trowel, or caulking gun
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	77% ± 1%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Tensile:	485 psi ± 10%
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
Clean-Up:	Mineral Spirits, Toluene, Xylene

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018



D. TOPCOAT® Membrane

TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric roofing membrane specially designed to seal the entire roof. TOPCOAT® Membrane (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D-1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180°@ -30°F without fracturing
Weatherability :	<ul style="list-style-type: none">• 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26.• 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.• 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original
Clean-Up:	Water and mild soap

E. TOPCOAT® TPO Red Primer

TOPCOAT® TPO Red Primer is a VOC-compliant, solvent-based thermoplastic liquid to be applied to new or aged EverGuard® TPO membranes where adhesion of TOPCOAT® water-based coatings or MajorSeal™ Liquid Flashing is desired. TOPCOAT® TPO Red primer is slightly tinted to distinguish primed areas on bright white TPO membranes. The surface of the treated area must be clean of all dirt, dust, and debris and be completely free of moisture prior to application of the primer.

Application Rate:	0.5/100 sq. ft. per coat
Application Method:	Roller or brush
Application Temperature (air, surface):	42°F – 120°F
Drying Time (75°F, 50% RH):	Approximately 15 minutes
Wet Mil Thickness:	Up to 5
Dry Mil Thickness:	Up to 0.5
Total Solids (by weight):	2.5% ± 0.5%
Total Solids (by volume):	1%

Specific Gravity:	1.14 g/cc
Weight Per Gallon:	9.5 ± 0.5 lbs
Viscosity (75°F):	100 cps
Flash Point:	5°F
Storage:	Store in well-ventilated area at 50°F to 80°F
Shelf Life:	1 year
Clean-up:	Xylene, Toluene
VOCs:	VOC compliant up to 1 g/l

F. TOPCOAT® PVDF Coating

TOPCOAT® PVDF Coating is a water-based, spray-applied, Polyvinylidene fluoride-based reflective coating with exceptional dirt-repelling characteristics. This product was designed to repel dirt build-up and staining from environmental factors that can diminish reflectance over time. Polyvinylidene fluoride is a well-established polymer additive that has been used in coating products for decades in both non-roofing and roofing applications. It offers excellent weatherability and resists mildew, and can withstand extended exposure to a wide range of temperatures, ultraviolet rays, and atmospheric pollutants.

TOPCOAT® PVDF Coating is compatible with select water-based sealant and coating products, including TOPCOAT® Membrane and TOPCOAT® MB Plus coating products. It may be installed as a final coat in multicoat applications of compatible water-based product or in a multicoat PVDF coating application. See GAFs published TOPCOAT® application instructions for specifications and requirements. NOTE: PVDF Coating is highly sensitive to substrate conditions, and all flashing materials and/or base coats MUST BE THOROUGHLY CURED/DRY, prior to the application of PVDF coating.

Application to uncured or wet substrates will result in cracking.

Application Rate:	0.5 to 1.0 gallons per coat
Application Method:	Airless sprayer, brush, or roller
Application Temp (air, surface):	42 ° – 120 °F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat (install over DRY substrates ONLY)
Elongation:	ASTM D2370 100%
Solids Content (by weight):	57% calculation via formulation
Viscosity (75°F):	Brookfield (#6 spindle @ 10 rpm) 11,000~13,000 cps
Tensile Strength:	ASTM D2370 >200 psi
Unit Sizes:	5-gallon pail and 55-gallon drum
Weight Per 5-Gallon Pail, As Applicable:	63 lbs
Wet Adhesion on TOPCOAT®:	ASTM C794 2 lbf/in
Water Absorption:	ASTM D471 <5%
Water Vapor Permeance:	ASTM D96 49 perms
Coverage Rate:	Airless spray 120 sq ft/gal
VOCs:	<50 g/L
Initial Reflectivity:*	0.885

*Based on in-house testing

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches, other preparatory work has been completed, and unsatisfactory conditions have been corrected in a manner acceptable to GAF.

- B. Treatment of Damaged/Deteriorated TPO: Any areas where TPO has torn, cracked, and/or buckled must be repaired using similar products manufactured by GAF. Any wet insulation must be replaced as part of the roofing repair. Allow at least 24 hours drying time before application of other TOPCOAT® products.
- C. Substrate Cleaning: Roof substrate must be carefully pressure-washed with water. Use an approximate working pressure of 2,000 psi (depending on condition of roof) to remove all dirt, dust, chalking, loose materials, etc. Take care not to damage the roof surface or force water into the roof system. Use hot water and mild detergent to remove grease and/or oils from the roof substrate. If mildew or algae are present, use bleach to treat these areas, then pressure-wash surface.
- D. Substrate must be clean, **completely dry**, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION

- A. Priming: Roof will be primed with TOPCOAT® TPO Red Primer applied at a rate of 0.5 gallon per 100 sq. ft. Apply with a foam roller or brush, and allow to dry.
- B. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of 6" TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing TPO substrate. Seams that are suspected of leaking shall also be sealed in this manner.
- C. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- D. Coating Application:
 Note: Recommended method for application of TOPCOAT® Membrane is by airless sprayer. A roller can be used; however, more coats may be required to obtain specified mil thickness.
 1. Spray-apply base coat of TOPCOAT® Membrane at a rate of 1.0 gallon per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
 2. Spray-apply finish coat (same color as base coat) of TOPCOAT® Membrane at a rate of 1.5 gallons per 100 sq. ft. Do not apply finish coat unless the base coat is clean and dry and will provide proper adhesion.
 3. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 20 mils field and 80 mils on roof penetration details and problem seams.
- E. PVDF Coating: Once the initial and final coats of TOPCOAT® Membrane have been applied and fully cured, TOPCOAT® PVDF Coating may be applied at rate of 0.5-1.0 gallons per sq. to aid in retarding dirt. TOPCOAT® PVDF Coating's preferred application method is by airless sprayer. If TOPCOAT® PVDF Coating is being used as a maintenance coating only, to aid in preventing dirt retention only, then the 2 applications of TOPCOAT® Membrane can be omitted from this specification.

TOPCOAT® System Specifications – Sprayed Polyurethane Foam



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on sprayed urethane foam roof. This section addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications and detail drawings shall be used for installations on urethane foam.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over dry, sound urethane foam only with a minimum slope of 1/2:12. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. Test patches shall be prepared in representative roof areas to check TOPCOAT® adhesion before application on any urethane foam roof. TOPCOAT® products will not adhere to existing silicone-based coatings over urethane foam.
- C. **The bonding surface must be free of ponding water, ice, snow, and splits.**
- D. GAF requires that a moisture scan be done by an independent source and requires it prior to issuance of GAF's limited warranty.
- E. If the moisture scan reveals more than 20% of the roof area is wet, consider other reroofing options.
- F. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 WARRANTY

Provide Weather Stopper® Integrated System Limited Warranty* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given polyurethane foam roof, please contact GAF's Technical Services Department.

** See limited warranty for complete coverage and restrictions.*

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

B. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

C. TOPCOAT® Membrane

TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric roofing membrane specially designed to seal the entire roof. TOPCOAT® Membrane (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D1653)
Freeze-Thaw Stability:	Passes five cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing



Weatherability :

- 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26.
- 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.
- 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.

Tensile Strength:

150% of original

Elongation:

85% of original

Clean-Up:

Water and mild soap

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- Examine substrate to receive new roofing. Do not proceed with new roofing until adhesion has been verified by test patches and other preparatory work has been completed or until unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- Pressure Washing: Substrate must be pressure-washed with water. A minimum working pressure of 2,000 psi is to be used to remove all dirt, dust, chalking and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.).
- Treatment of Deteriorated Foam: All areas where the urethane foam has degraded must be refoamed to bring the substrate to a smooth, workable surface. Any areas where foam has become wet must be removed and refoamed.
- Substrate must be clean, dry, and free of any debris before application of TOPCOAT® products.

3.02 APPLICATION

- All penetration areas and splits must be treated with a 6" wide area of TOPCOAT® Flashing Grade, one layer of TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric. Feather the Flashing Grade onto the existing urethane foam substrate.
- After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- Coating Applications:
 - For new urethane foam roofs or foam roofs where the existing coating is in relatively good condition:
 - Spray-apply base coat (White) of TOPCOAT® Membrane at a rate of 1.25 gallon per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws or gaps. Correct any unsatisfactory conditions prior to proceeding.
 - Spray-apply finish coat (White) of TOPCOAT® Membrane at a rate of 1.75 gallon per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion.
 - Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 28–30 mils field and 80 mils on penetration details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

TOPCOAT® System Specifications – Corrugated Transite Panels



PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The TOPCOAT® Roofing System can be applied on corrugated asbestos roof panels. This section addresses any unique aspects for this type of installation. Unless otherwise specified in this section, GAF standard specifications and detail drawings shall be used for installations on corrugated asbestos roof panels.

1.02 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Roofing System is to be applied over corrugated asbestos panels with a minimum slope of 1/2:12. Substrate should not pond water for a period longer than 48 hours after precipitation stops.
- B. The TOPCOAT® Roofing System should not be used on heavy-traffic bearing substrates. If foot traffic is expected, a rooftop walkway system approved by GAF must be used.

1.03 GUARANTEE

Provide TOPCOAT® Diamond Pledge™ NDL Roof Guarantee* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given concrete roofs, please contact GAF's Technical Services Department.

**See guarantee for complete coverage and restrictions.*

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Precote

Solvent-based primer/sealer for use on porous or friable substrate to bind surface and obtain optimum adhesion of TOPCOAT® products. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft.
Application Method:	Brush or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 30 minutes
Total Solids (by weight):	28.4% ± 1%
Specific Gravity:	0.86 ± 0.1
Weight per Gallon:	7.2 ± 0.5 lbs
Viscosity (75°F):	200 ± 100 cps
Clean-up:	Mineral Spirits, Xylene, Toluene

B. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing



Low-Slope / Restoration
System Specs

C. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

D. TOPCOAT® Membrane

TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric roofing membrane specially designed to seal the entire roof. TOPCOAT® Membrane (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D1653)
Freeze-Thaw Stability:	Passes five cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Weatherability :	<ul style="list-style-type: none">• 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26• 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.• 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original
Clean-Up:	Water and mild soap

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrate to receive new roofing. Do not proceed with new roofing until preparatory work has been completed or until unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Treatment of Excessive Gaps: All large or excessive gaps existing between roof panels must be filled or made flush with closed-cell foam strips or polyurethane foam to pre-fill voids (larger than 1/4 inch) before applying TOPCOAT® Flashing Grade.
- C. Fasteners: All fasteners must be retightened, secured, or replaced, as necessary. All stripped fasteners must be replaced with larger fasteners. All missing fasteners must be replaced.
- D. Pressure Washing: Substrate must be pressure-washed with water. Use minimum working pressure of 2,000 psi to remove all dirt, dust, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.). **NOTE:** Corrugated asbestos panels are likely to contain significant amounts of ASBESTOS (CAS No. 1332-21-4), which may be released during pressure-washing. Since asbestos dust is an extreme HEALTH HAZARD and a known carcinogen, it is the Installer's responsibility to check with state and local agencies regarding its proper disposal, as well as the proper protection for workers exposed to this material.

3.02 APPLICATION

- A. Apply one coat of TOPCOAT® Precote at the rate of 0.75 gallon per 100 sq. ft over entire roof area. Allow 1-2 hours drying time before proceeding with flashing work.

(Note: Substrate must be completely dry before TOPCOAT® Precote can be applied.)

- B. Flash Detail Areas: All detail areas, horizontal seams, vertical seams, penetrations, curbs, and fasteners must be flashed with TOPCOAT® Flashing Grade (and for some situations, TOPCOAT® Flashing Fabric) in accordance with GAF detail drawings and as follows:
1. Horizontal Seams: Must be sealed with a 6" width of TOPCOAT® Flashing Grade.
 2. Vertical Seams: Must be sealed with at least a 4" width of TOPCOAT® Flashing Grade.
 3. Roof Penetrations and Stress Areas: Flash all roof penetrations and stress areas with a 6" width (minimum) of TOPCOAT® Flashing Grade, one layer of TOPCOAT® Flashing Fabric, and a final layer of Flashing Grade to completely embed the Fabric.
 4. Fasteners: Encapsulate all exposed fasteners with TOPCOAT® Flashing Grade. Ensure the Flashing Grade is feathered neatly over and around the fasteners.
- C. After at least 24 hours drying time, inspect preparatory/flashing work for problem areas (i.e., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory. Repair any deficiencies using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric, as required.
- D. Spray-apply base coat (Gray) of TOPCOAT® Membrane at a rate of 1.25 gallons per 100 sq. ft. Allow at least 24 hours drying time and inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions prior to proceeding.
- E. Spray-apply finish coat (White) of TOPCOAT® Membrane at a rate of 1.75 gallons per 100 sq. ft. Finish coat should not be applied unless the base coat is clean and dry and will provide proper adhesion.
- F. Allow at least 24 hours drying time prior to allowing foot traffic or inspection of the roof. After 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc., and repair any unsatisfactory conditions. Specified membrane thicknesses are minimum 28–30 mils field and 88 mils on flashing details.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

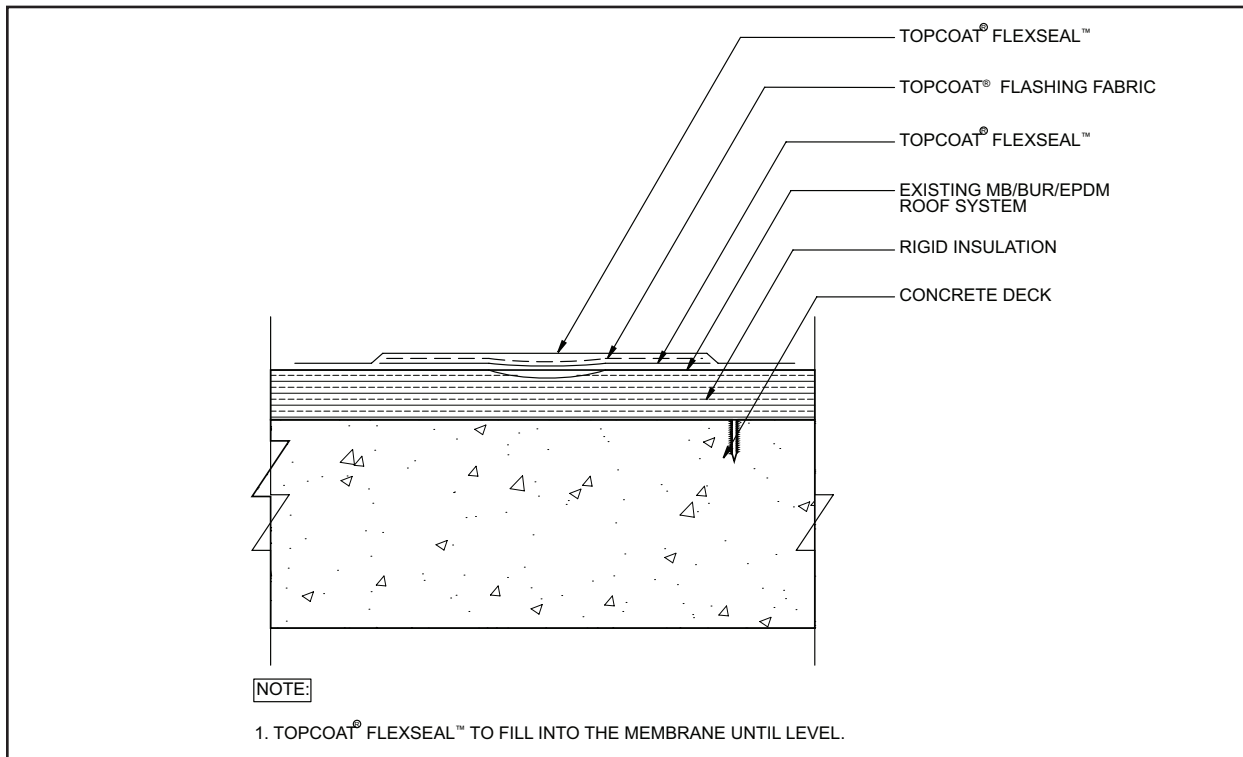
Note: Repair leaks promptly to avoid adverse effects, including mold growth.

Notes

SECTION 3A:

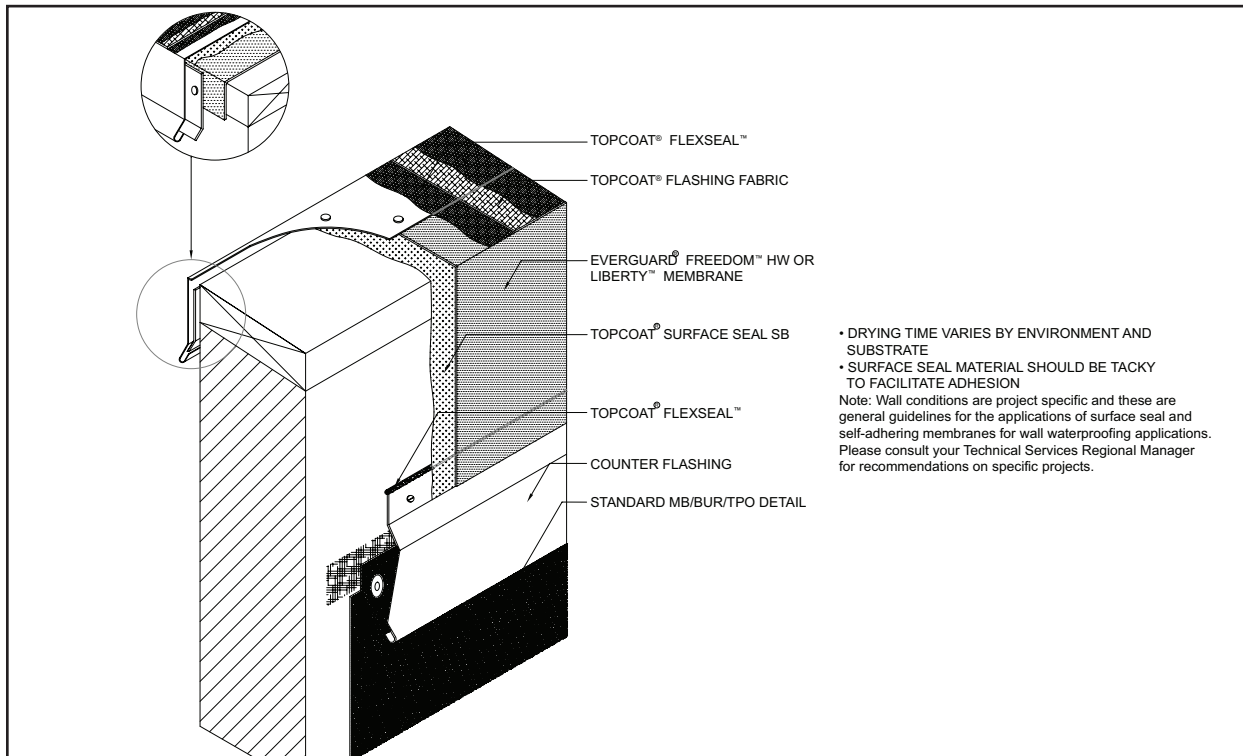
Low-Slope/Restoration Detail Drawings

MB/BUR/EPDM Field Up Repair Detail

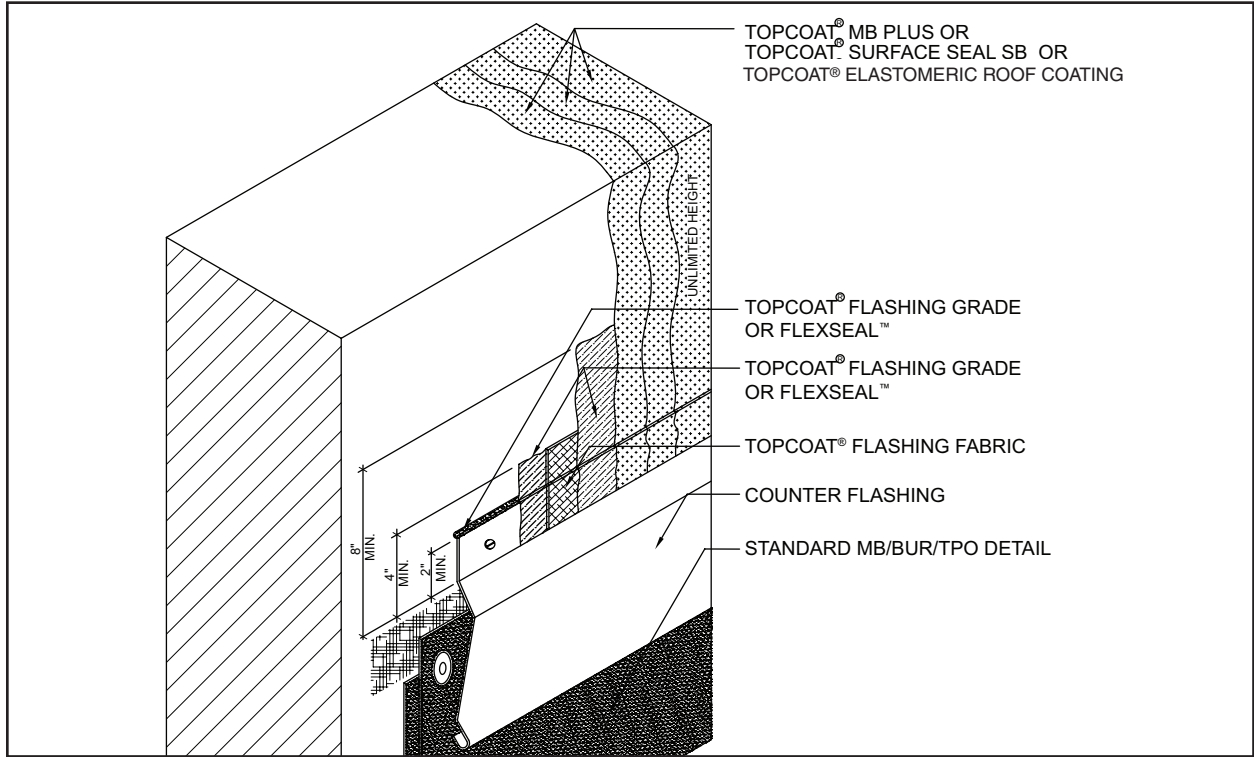


Low-Slope/Restoration
Detail Drawings

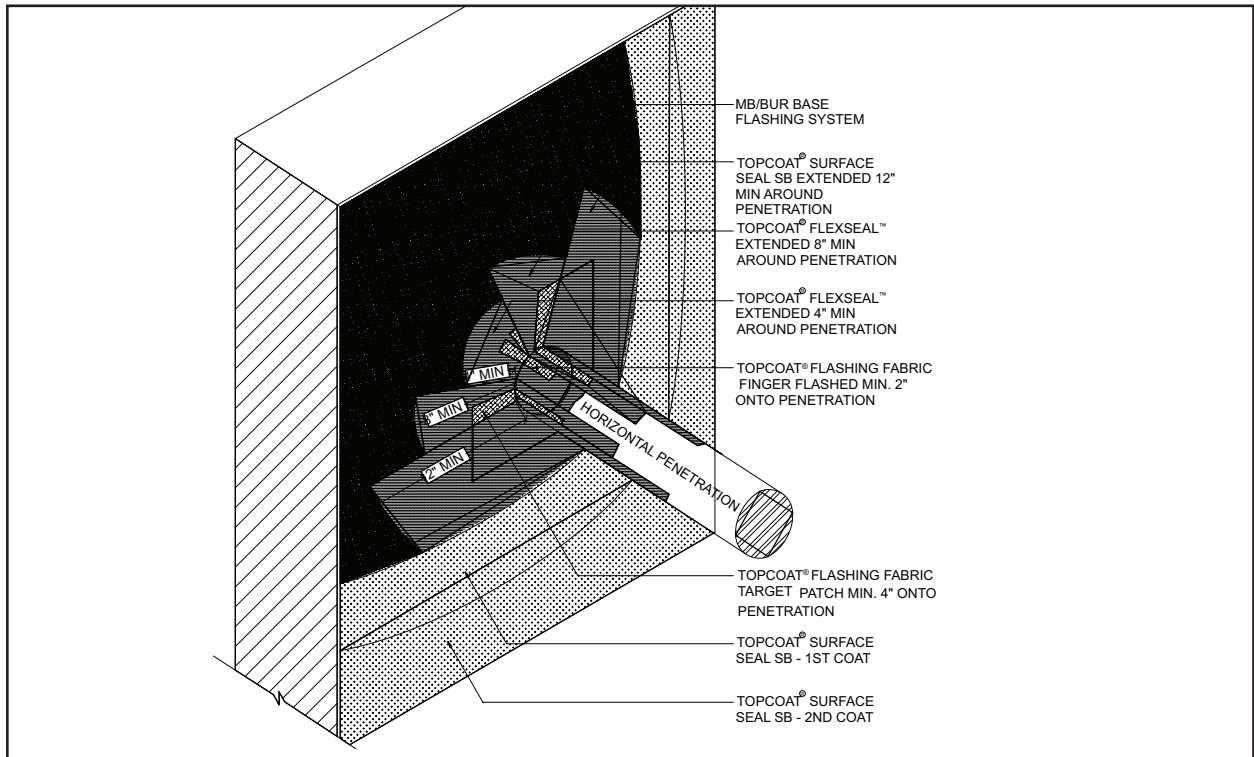
High Wall Detail



Wall Termination Detail

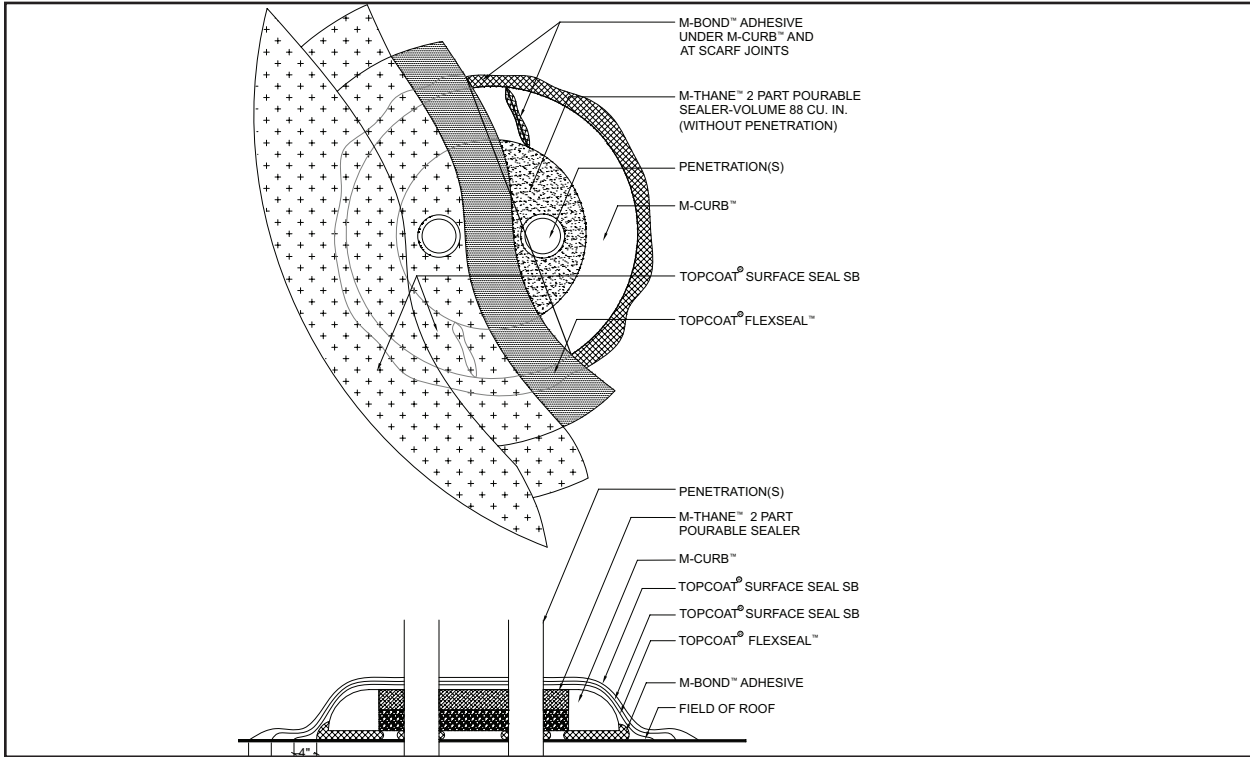


Side Penetration Through Base Flashing Detail



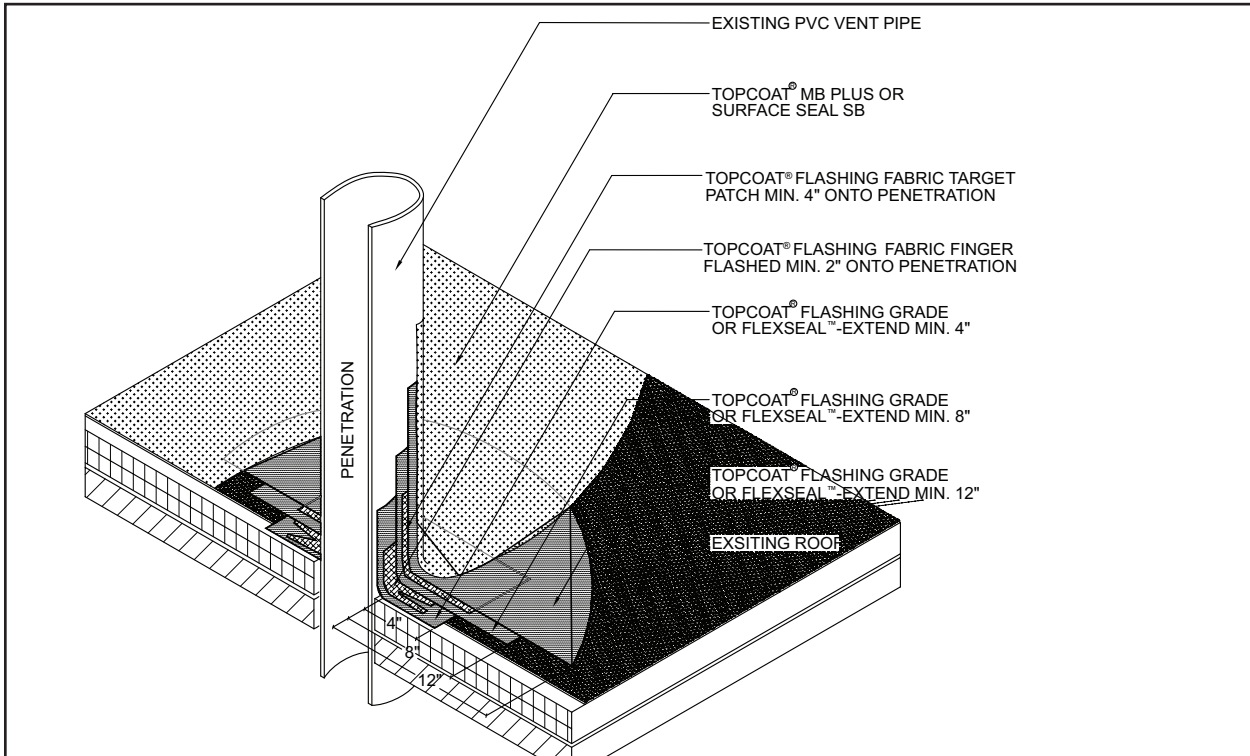
Low-Slope/Restoration
 Detail Drawings

Penetration Curb Flashing Detail

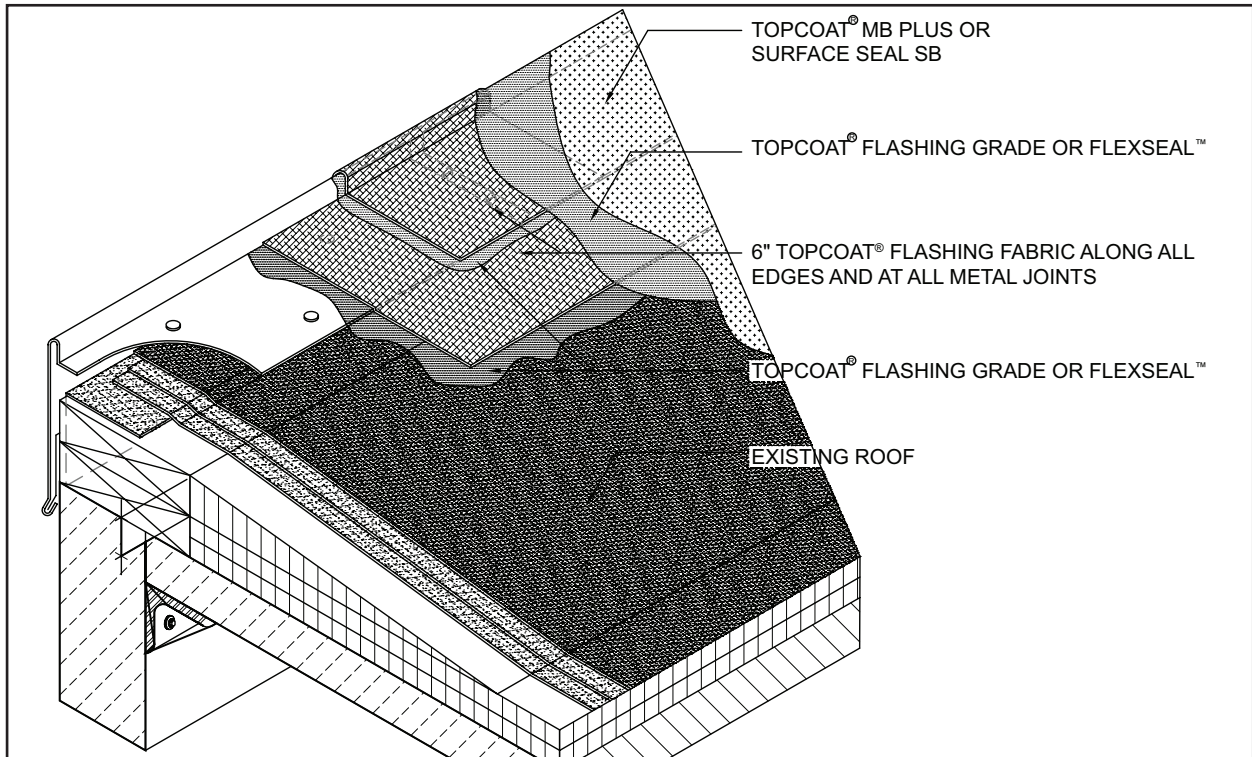


Low-Slope/Restoration
Detail Drawings

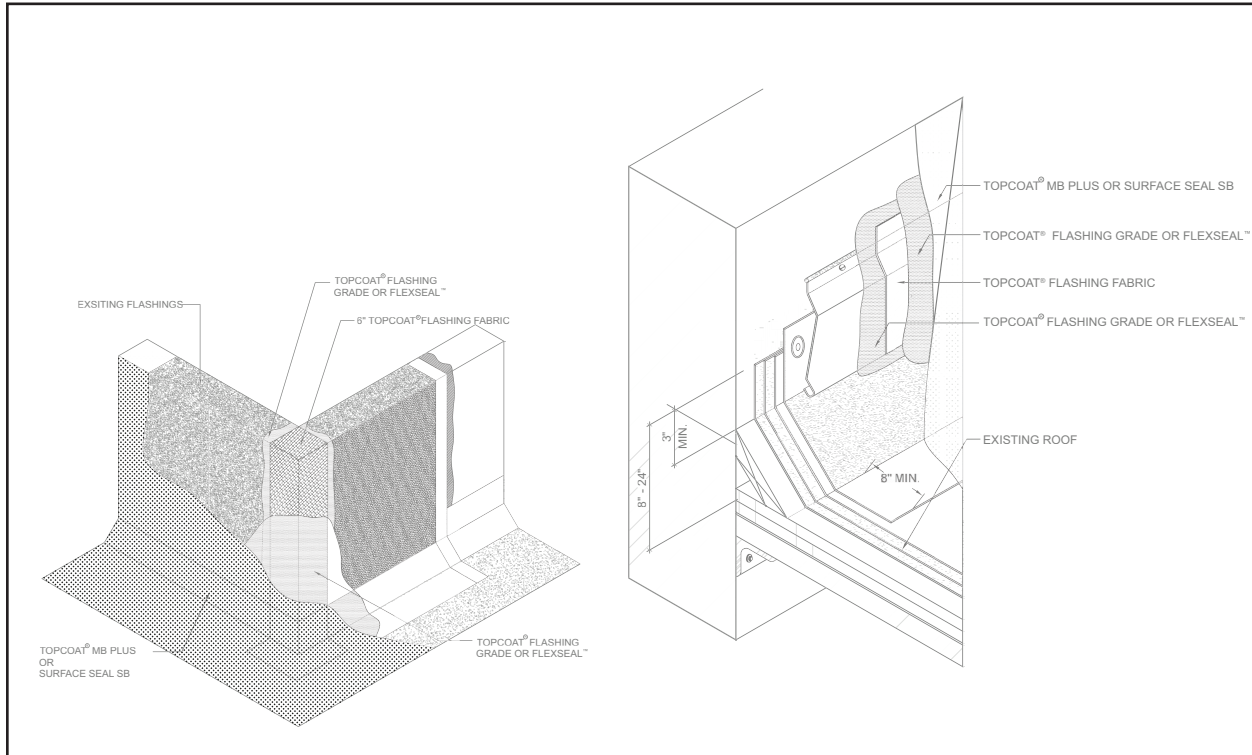
Vent Pipe Flashing Detail



BUR Edge Restoration Detail

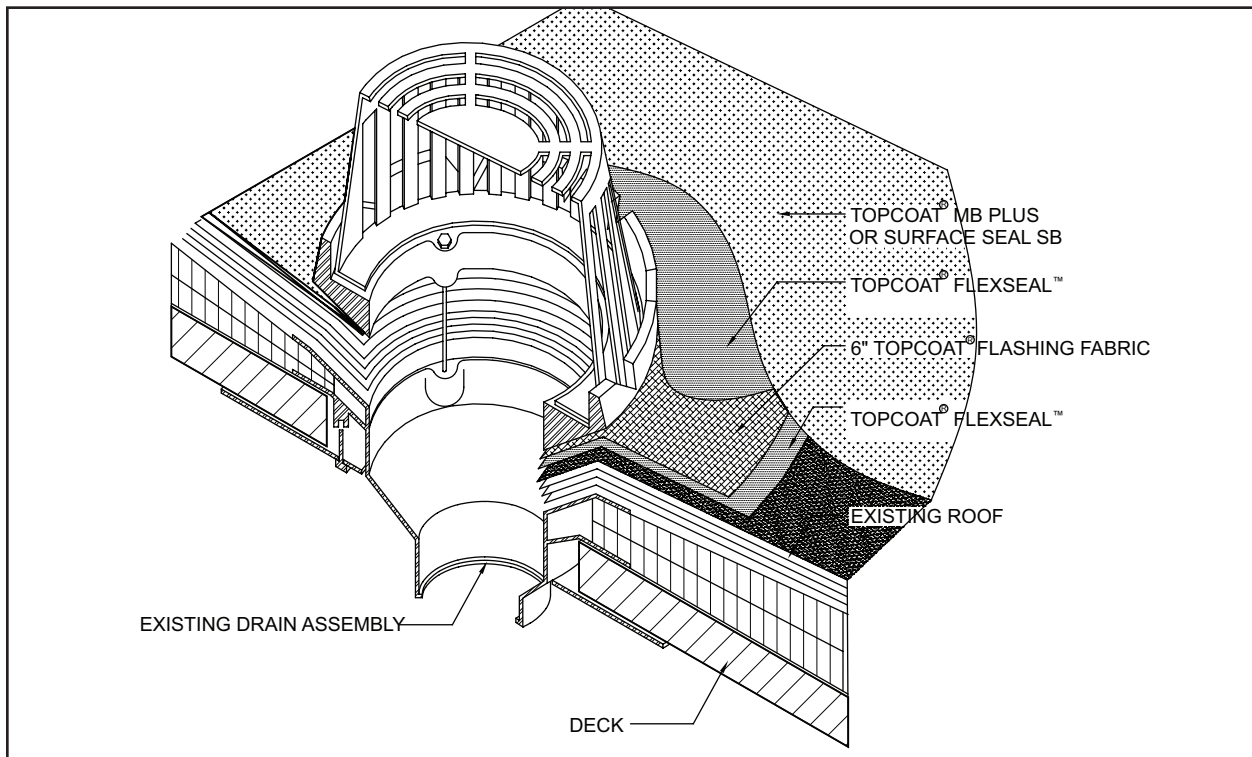


BUR Wall Termination Restoration Detail

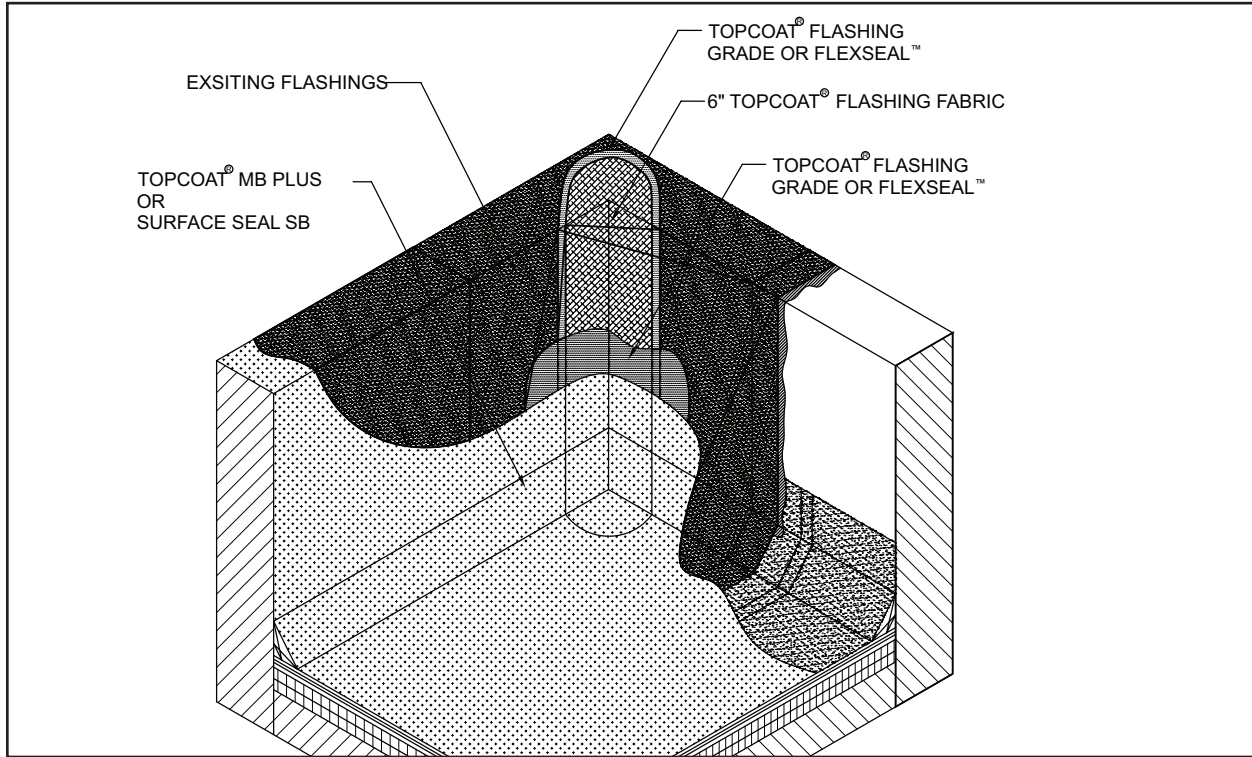


Low-Slope/Restoration
Detail Drawings

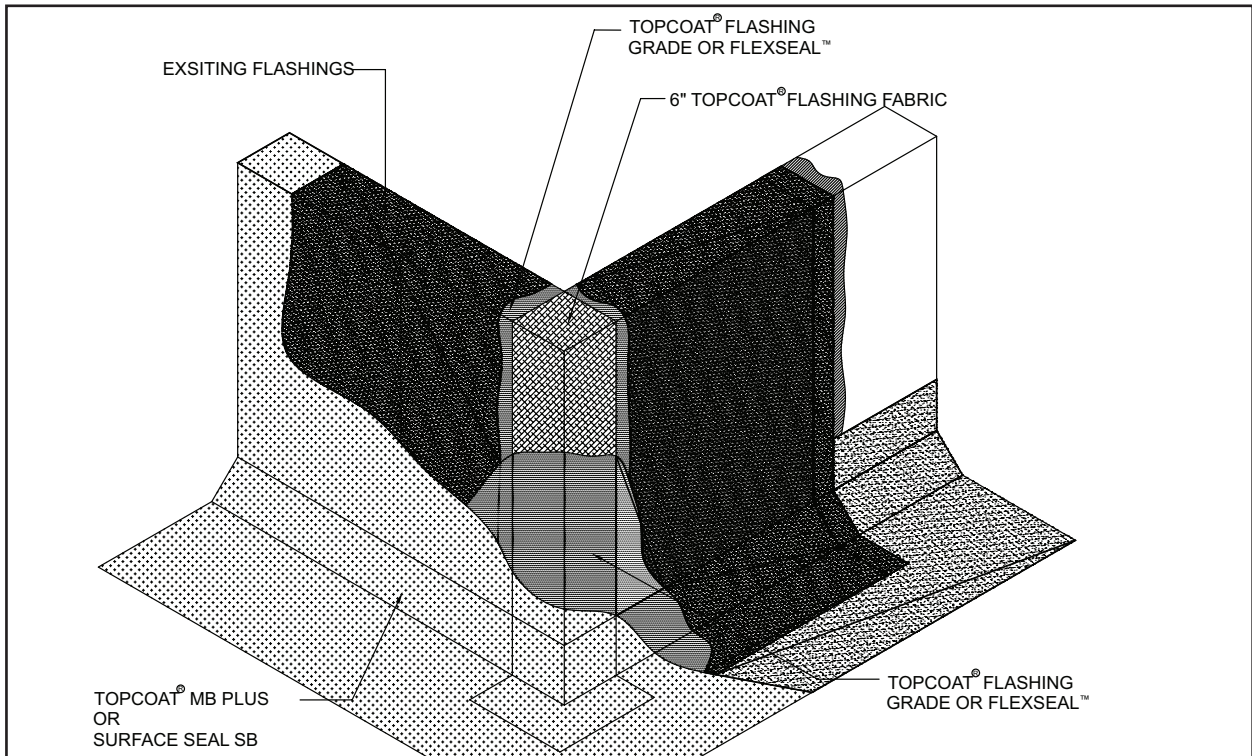
BUR Drain Restoration Detail



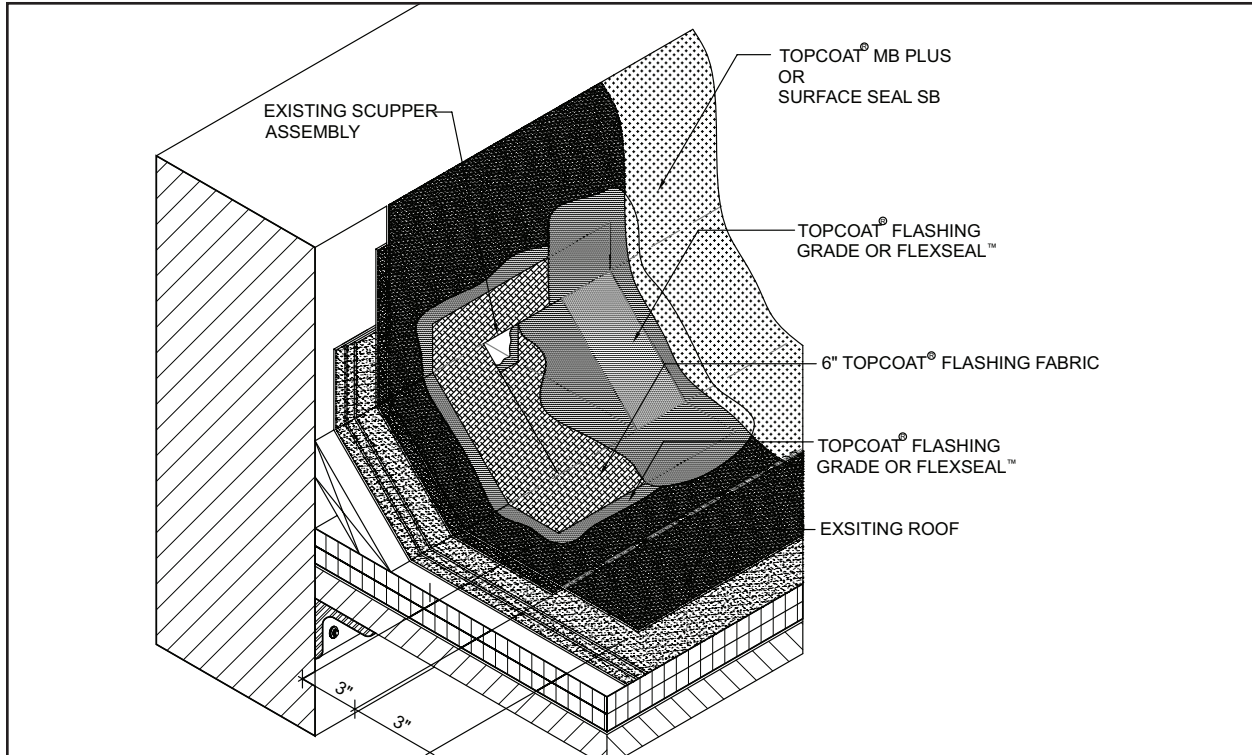
BUR Inside Corner Restoration Detail



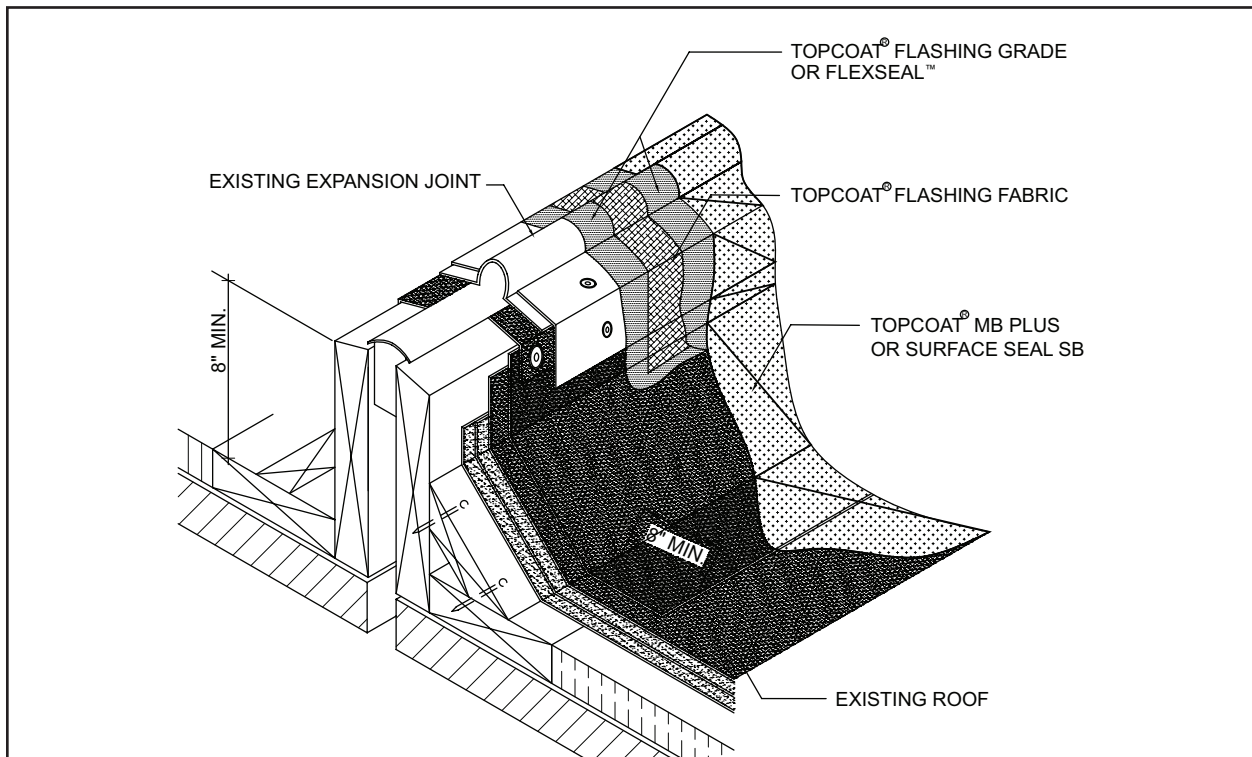
BUR Outside Corner Restoration Detail



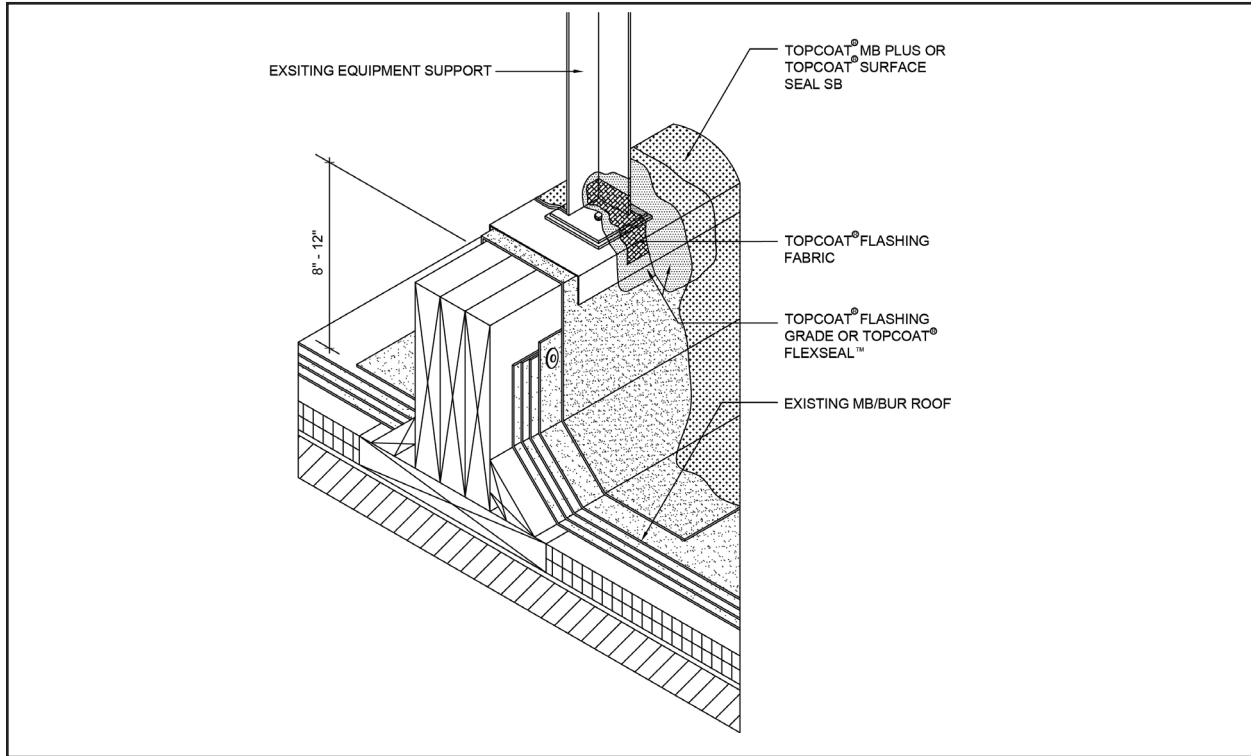
BUR Scupper Restoration Detail



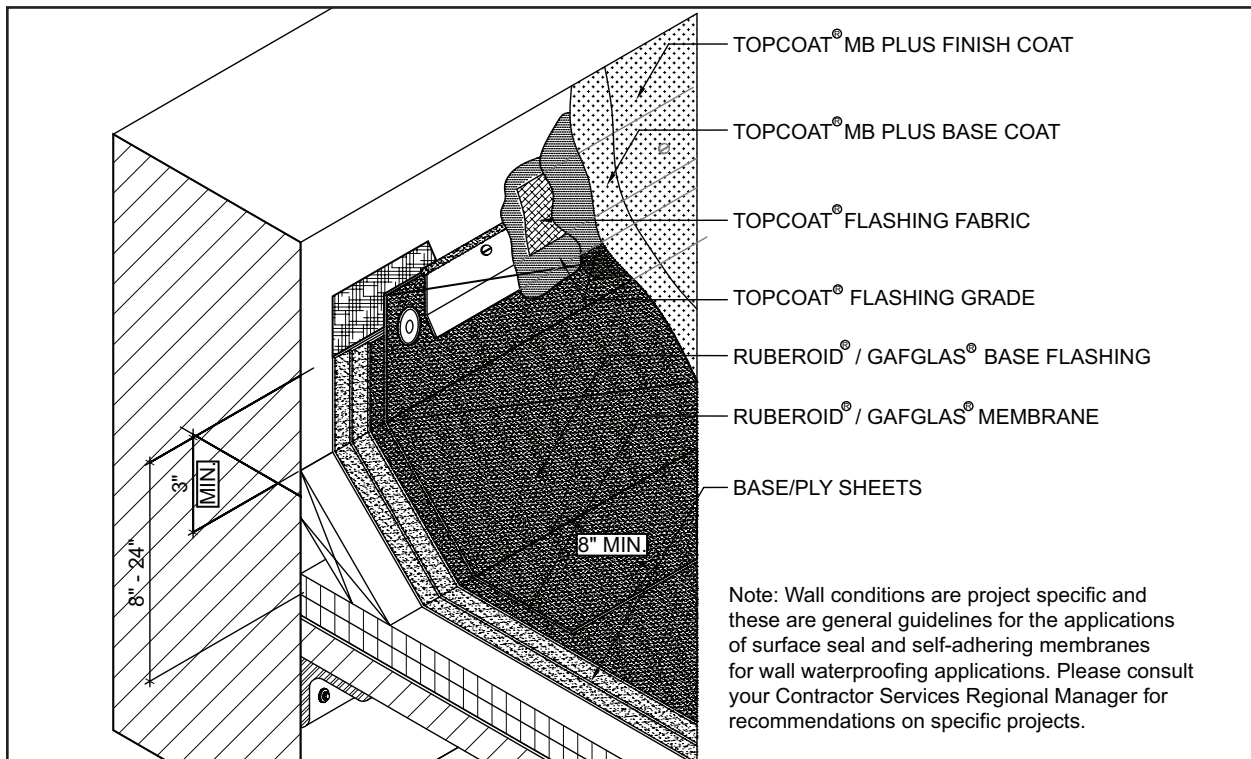
BUR Expansion Joint Restoration Detail



BUR Equipment Support Restoration Detail



BUR Wall To Base Flashing Restoration Detail



Low-Slope/Restoration
Detail Drawings

SECTION 4:

Balcony/Plaza Deck System Specifications

TOPCOAT® SYSTEM SPECIFICATIONS – CONCRETE PLAZA DECK/BALCONY WITH CERAMIC TILE

PART 1 – GENERAL



1.01 SYSTEM DESCRIPTION

Extent of TOPCOAT® Plaza Deck/Balcony System (TOPCOAT® Balcony System) work is indicated on the drawings and is further defined by provisions of this section, which includes flashing and reinforcing of joints and junctions and penetrations/accessories. Areas to be waterproofed include existing structural concrete balconies as indicated on drawings. Final determination of the fitness of the TOPCOAT® Balcony System, or its components, for any given concrete balcony may not be made by any representative other than a member of GAF's Technical Services Department.

1.02 GUARANTEE

Provide TOPCOAT® Diamond Pledge™ NDL Roof Guarantee* per the requirements of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any concrete plaza deck or ceramic tile balcony, please contact GAF's Technical Services Department.

**See guarantee for complete coverage and restrictions.*

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide primary products, including TOPCOAT® Surface Seal SB, TOPCOAT® FlexSeal™, reinforcing fabric, etc., by a single manufacturer (GAF), which has produced this type of product successfully for not less than twenty (20) years. Provide secondary products only as approved by GAF for use with the specified TOPCOAT® Balcony System.
- B. Installer Qualifications: A single Installer or Firm shall perform all work addressed in this section, and shall be certified by GAF, for installation of the TOPCOAT® Balcony System.

1.04 SUBSTRATE CONDITIONS

- A. The TOPCOAT® Balcony System is to be applied over structural concrete balconies only (minimum 2500 psi) with a positive slope. Concrete balcony substrate must be completely cured and dry before application of TOPCOAT® products. Substrate should not pond water for a period longer than 48 hours. Do NOT use TOPCOAT® Surface Seal SB for application on lightweight concrete.
- B. The bonding surface must be clean and free of ponding water, ice, and snow.
- C. If any questions arise regarding the compatibility of TOPCOAT® products with an existing substrate, Installer shall prepare test patches to check adhesion (addressed in Part 3 of this specification). Contact GAF's Technical Services Department with questions concerning substrates for additional information and recommended test patch materials.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

A. TOPCOAT® Flashing Fabric

Non-woven, spun-bonded polyester fabric that must be used in conjunction with TOPCOAT® FlexSeal™ at all seams, balcony penetrations, joints, or changes in plane that have high shear or stress penetrations. TOPCOAT® Flashing Fabric Roll Sizes: 6" x 150', 12" x 150', 36" x 150'. TOPCOAT® Flashing Fabric can be used when additional coating strength is specified or desired.

B. Block Primer

Water-based primer/sealer for porous concrete, block, or brick to promote adhesion.

C. Tile Adhesive

Polymer modified mortar

D. TOPCOAT® Surface Seal SB

Solvent-based, spray, or roller-applied liquid balcony waterproofing membrane. Can be applied in temperatures under 32°F.

Application Rate:	1.0 to 1.5 gallons/100 SF per coat
Application Method:	Airless sprayer, roller, brush
Application Temperature (surface):	32° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Tensile Strength:	565 ± 10 psi
Wet Mil Thickness:	1.0 Gallon/100 SF Application: 16 wet mils 1.5 Gallon/100 SF Application: 24 wet mils
Dry Mil Thickness:	
1.0 Gallon/100 SF Application:	8 dry mils
1.5 Gallon/100 SF Application:	12 dry mils

E. TOPCOAT® FlexSeal™

White, solvent-based synthetic elastomeric compound designed to line and waterproof. This product is easiest to apply at temperatures over 32°F. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in cold temperatures. FlexSeal™ LV can also be used on relatively flat surfaces because it has self-leveling capabilities.

Application Rate (seams):	5 gallons total/100 ft.
Application Method:	Trowel or stiff bristle brush
Application Temperature (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% ± 2%
Total Solids (by volume):	66% ± 2%
Specific Gravity:	1.24 ± 0.1
Weight per Gallon:	10.3 ± 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV-Viscosity (75°F):	150,000 ± 15,000 cps
Tensile:	485 psi ± 10%
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 year
Clean-Up:	Mineral Spirits, Toluene, Xylene

F. TOPCOAT® Membrane

Water-based, 100% acrylic, spray-applied liquid roofing membrane. Curing is enhanced by UV exposure. Available in white, gray, patina green, and other standard as well as custom colors. Do not apply in temperatures under 42°F.

Application Rate:	1.0 to 1.5 gal / 100 sf per coat
Application Method:	Airless sprayer
Application Temperature (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approx 24 hrs/coat
Total Solids (by weight):	71 ± 3%
Specific Gravity:	1.48 ± 0.06
Weight per Gal:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
PH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	0.003 perm inch
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temperature Flexibility:	35 mil dry film will bend 180° @ 30°F without fracturing
Weatherability:	<ul style="list-style-type: none">• 1,000 hours Atlas Weather-o-meter® exposure per ASTM G26.• 2,000 hours Atlas Weather-o-meter® exposure per ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.• 6,000 hours QUV® exposure, type UVB bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original

G. TOPCOAT® Flashing (Brush Grade and Spray Grade)

Light-gray, water-based, 100% acrylic synthetic rubber sealant to be applied on all seams, fasteners, flashings, and penetrations. Curing is enhanced by UV exposure. A sprayable version of Flashing (Spray Grade) is available for use. Spray Grade has all the same properties as regular Brush Grade, but is lower in viscosity. Do not apply in temperatures under 42°F.

Application Rate:	5 gal total/125 ft (6" width)
Application Method:	Brush or caulking gun (airless sprayer)
Application Temperature (air, surface):	42° – 120°F
Drying Time (75°F, 50% RH):	Approx 24 hrs
Tensile Strength:	225 ± 10 psi
Total Solids (by weight):	68% ± 1%
Specific Gravity / Weight per Gallon:	1.44 / 12.0 lbs
Viscosity – Regular (75°F):	225,000 ± 22,500 cps
Viscosity – Spray Form (75°F):	140,000 ± 14,000 cps
Clean-Up:	Water before curing

PART 3 – EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine Substrates: to receive new waterproofing. Do not proceed with installation of the TOPCOAT® Balcony System until unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Preparation of the Balcony Substrate: is the responsibility of the Installer. Installer shall address and correct all of the following:
- Treatment of large gaps and cracks
 - Protect adjacent surfaces that will not be receiving waterproofing
 - Treatment of ponding water areas
 - Thorough cleaning/removal of existing paints and coatings
 - Miscellaneous items

- C. Treatment of Large Gaps and Cracks: All large gaps and cracks (greater than 1/4") shall be repaired using a high-quality concrete grout, or TOPCOAT® FlexSeal™ and 6" fabric. Grout must be fully cured before application of TOPCOAT® products.
- D. Penetrations: Penetrations to the concrete deck should be sealed using 6" TOPCOAT® Flashing Fabric and FlexSeal™ in a 3-course application.
- E. Thorough Cleaning/Removal of Existing Paints and Coatings: Structural concrete substrate must be pressure-washed with water. A minimum working pressure of 3,000 psi shall be used to remove all dirt, dust, previous paints/coatings that are delaminating, and waste products (oil, solvents, grease, animal fats, etc.). All existing silicone-based sealants must be completely removed from roof substrate prior to application of TOPCOAT® products.
- F. Preparation of Test Patches: Installer shall prepare no less than three (3) test patches for all questionable substrates to verify adhesion of TOPCOAT® products. Minimum test patch size shall be one (1) square foot. After the test patches have been applied, allow at least one week of drying time before checking adhesion. Check adhesion by slicing an "X" (approx. 6" in size) near the center of the test patch. Then try to remove the TOPCOAT® material at the center of the "X" with a spatula. Test patches shall be labeled and photographed to document adhesion test results. Installer shall consult with GAF's Technical Services Department concerning all adhesion test results.

3.02 APPLICATION – SOLVENT-BASED

(Note: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Additional drying time must be allowed when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing.)

- A. Install 1/2" bead of TOPCOAT® FlexSeal™ at all internal corners.
- B. Prime balcony with Block Primer at a rate 1/2 gal / sq. and allow to cure. Concrete balconies older than 1 year will not require the primer.
- C. Apply base coat of TOPCOAT® Surface Seal SB at a rate of 1 gal/100 sq. ft. and allow to dry for at least 24 hours until fully cured.
- D. Apply 6" fabric imbedded in TOPCOAT® FlexSeal™ at intersections of horizontal and vertical planes as flashing.
- E. Apply second coat of TOPCOAT® Surface Seal SB at a rate of 1 gal per 100 sq. ft and allow to dry for at least 24 hours until fully cured.
- F. Install tiles using an approved adhesive.
- G. Grout joints between the tiles shall be no larger than 3/8" and be filled with a flexible grout sealant as recommended by the tile manufacturer.

3.03 APPLICATION – WATER-BASED

- A. Install 1/2" bead of TOPCOAT® FlexSeal™ at all internal corners
- B. Apply base coat of TOPCOAT® Membrane at a rate of 1 gal/100 sq. ft. and allow to dry for at least 24 hours until fully cured.
- C. Apply 6" fabric imbedded in TOPCOAT® FlexSeal™ at intersections of horizontal and vertical planes as flashing.

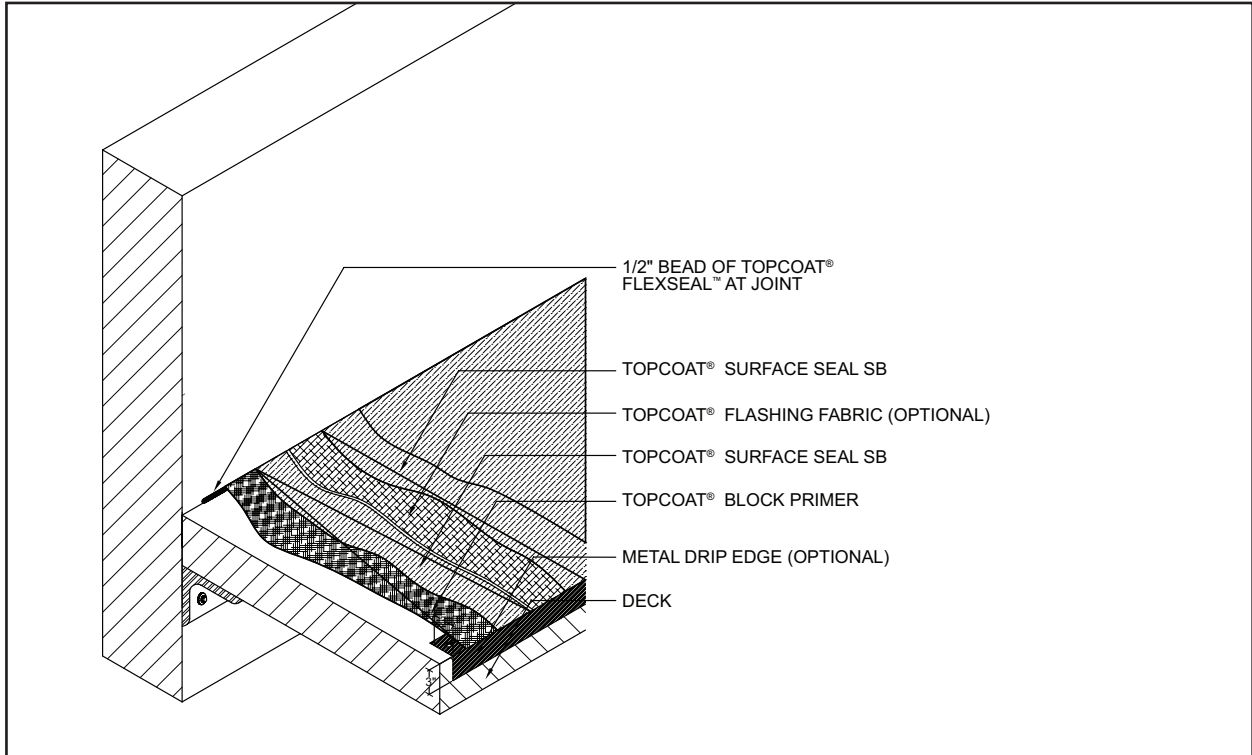
- D. Apply second coat of TOPCOAT® Membrane at a rate of 1 gal per 100 sq. ft and allow to dry for at least 24 hours until fully cured.
- E. Apply third coat of TOPCOAT® Membrane at a rate of 1 gal per 100 sq. ft. and dry for at least 24 hours until fully cured.
- F. Install tiles using an approved adhesive.
- G. Grout joints between the tiles shall be no larger than 3/8" and be filled with a flexible grout sealant as recommended by the tile manufacturer.

Notes

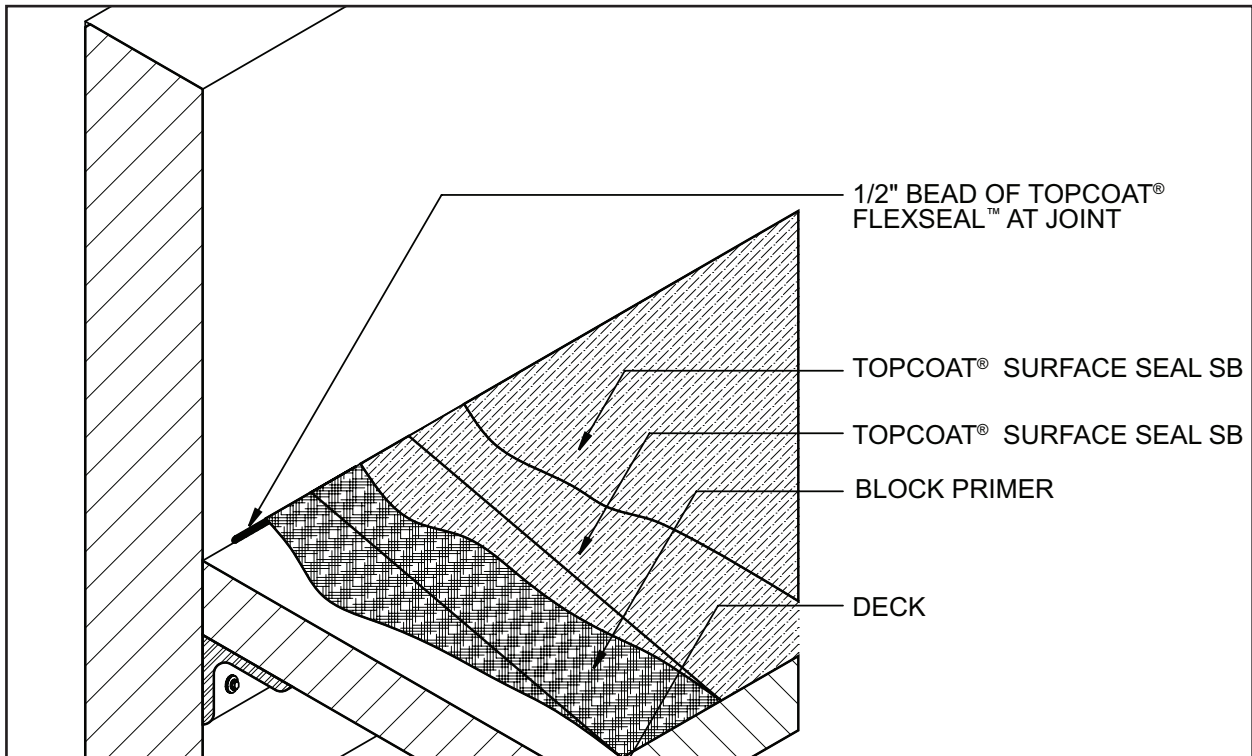
SECTION 4A:

**Balcony/Plaza Deck
Detail Drawings**

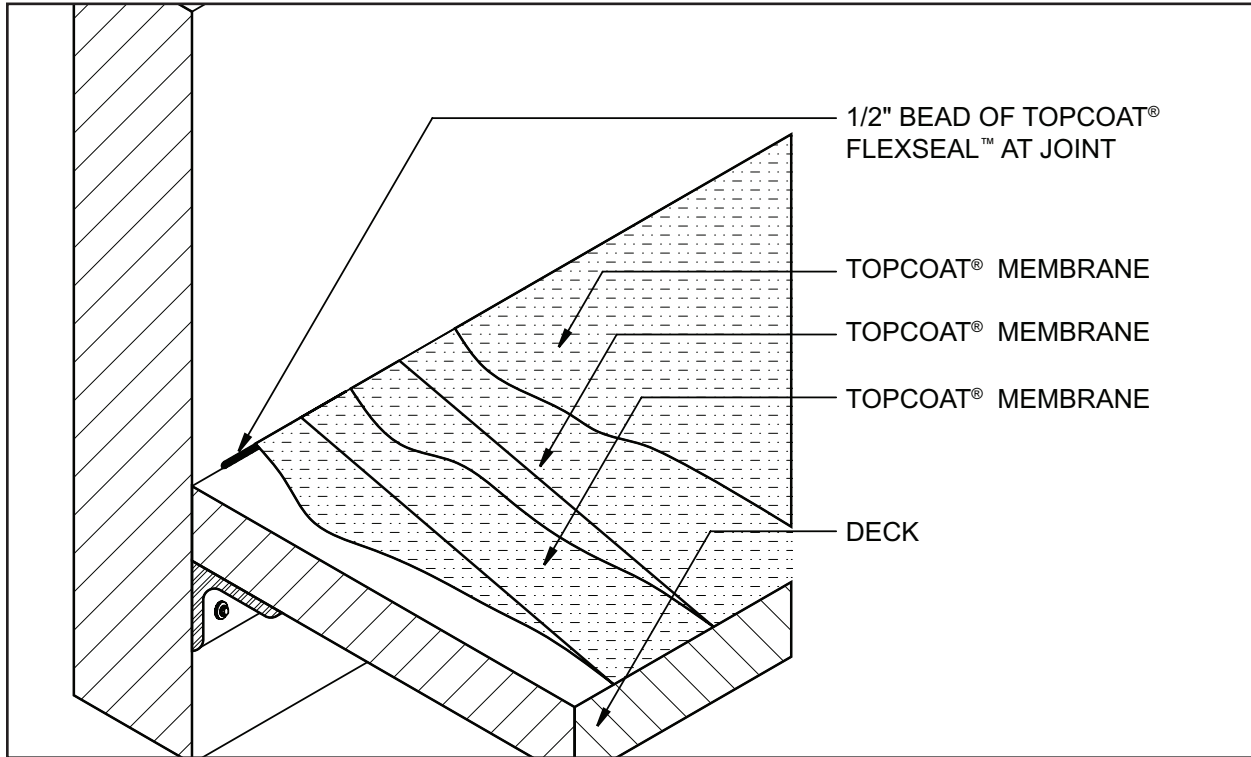
Balcony Edge Water Proofing Detail



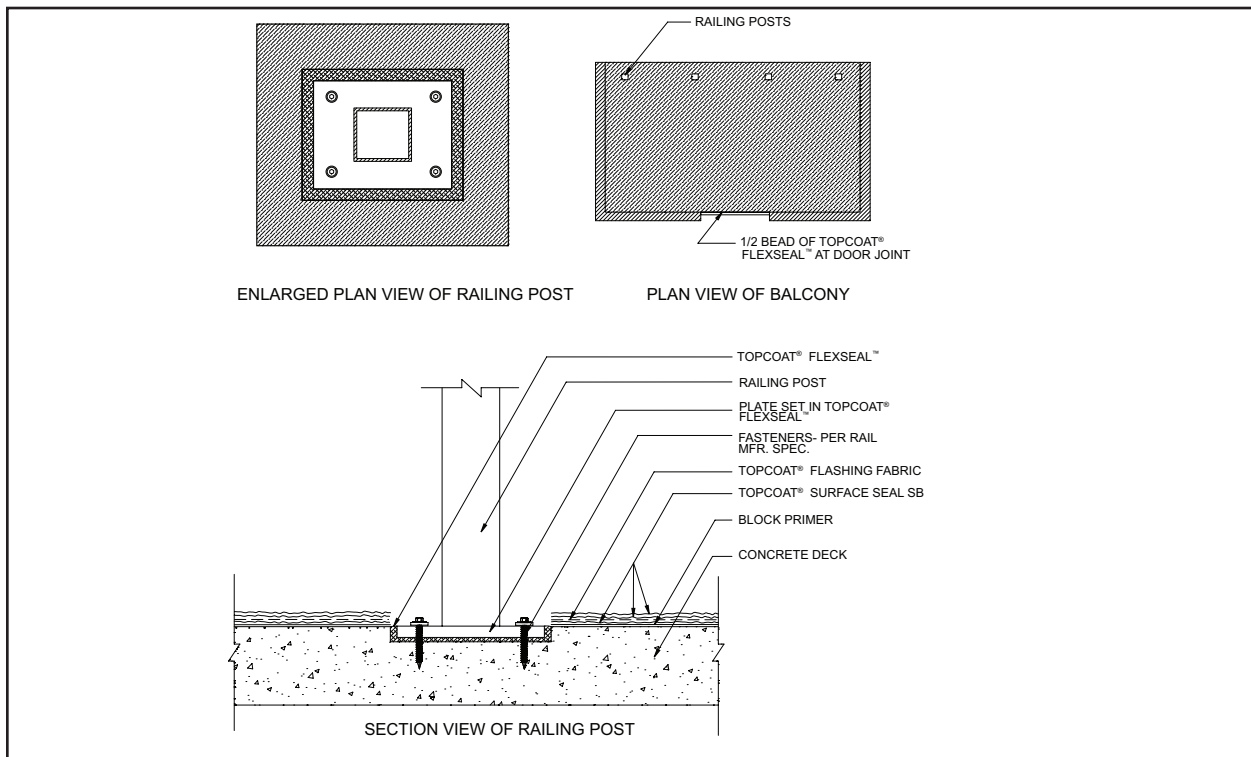
Balcony Edge Water Proofing Detail Alt. 1



Balcony Edge Water Proofing Detail Alt. 2

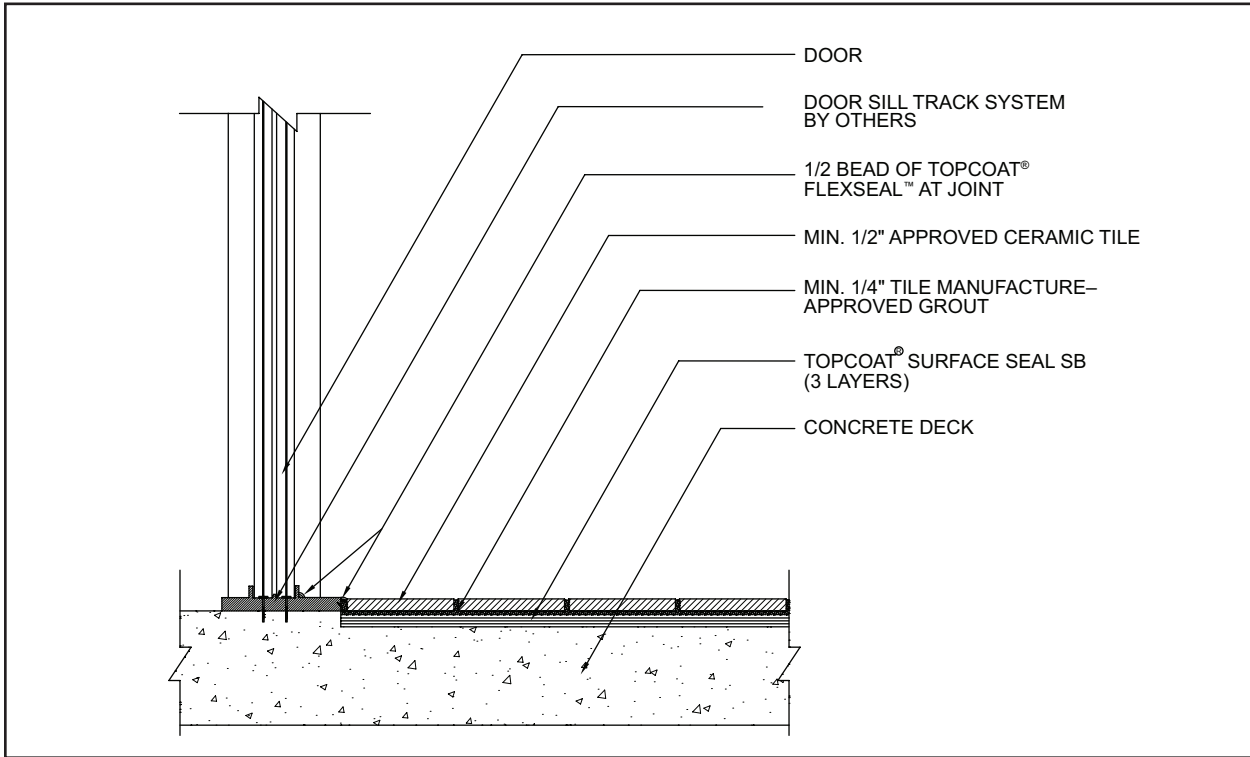


Balcony Railing Detail



Balcony / Plaza Deck
Detail Drawings

Balcony Threshold Detail



SECTION 5:

Metal Roof System Specifications

1.01 SYSTEM DESCRIPTION

Extent of TOPCOAT® Roofing System work is indicated on the drawings and is further defined by provisions of this section, which includes roofing, flashing, and reinforcing of joints and junctions, and roof accessories integrally related to roof installation. Areas to be reroofed include existing metal roofs as indicated on drawings. Should any questions arise as to the appropriateness of the TOPCOAT® Roofing System for any given metal roof, please contact GAF's Technical Services Department.

1.02 SUBMITTALS

Submit copies of TOPCOAT® technical product data sheets, installation instructions, and samples for each type of required roofing product.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide primary products, including TOPCOAT® Membrane, TOPCOAT® Flashing Grade, TOPCOAT® Flashing Fabric, etc., by a single manufacturer (GAF) that has produced this type of product successfully for not less than twenty (20) years. Provide secondary products only as approved by GAF for use with the specified TOPCOAT® Roofing System.
- B. Installer Qualifications: A single Installer or firm (“Installer”) shall perform all work addressed in this section, and shall be certified by GAF, for installation of the TOPCOAT® Roofing System.

1.04 REGULATORY REQUIREMENTS

- A. FM Listing: Provide TOPCOAT® Roofing System and component materials that have been evaluated by Factory Mutual System for flame-spread and are listed in “Factory Mutual Approval Guide” for Class I construction over existing metal roofing (flame spread must be in accordance with ASTM E108). Provide roof covering materials bearing FM approval marking on package or container, which indicates that material has been subjected to FM's examination, test procedures, follow-up inspection services, and approval.
- B. UL Listing: Provide TOPCOAT® Roofing System and component materials that have been evaluated by Underwriters Laboratories for flame-spread, and are listed in “Underwriters Laboratory Roofing Materials and Systems Directory” for Class A construction over existing metal or other non-combustible roofing (unlimited slope). Provide roof-covering materials bearing UL approval marking on container, which indicates that material has been subjected to UL's examination, test procedures, and follow-up inspection service.

1.05 INSURANCE CERTIFICATES

Assist owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with extended coverage insurance on roofing and associated work.

1.06 PRE-INSTALLATION MEETING

Approximately two weeks prior to scheduled commencement of roofing installation and associated work, conduct meeting at the project site with Installer, Architect/Owner, GAF representative, and any other persons directly concerned with the performance of the work. The Installer shall record conference discussions, including decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review methods and procedures related to roofing work, including but not necessarily limited to the following:

- A. Tour representative areas of roofing substrates to inspect and discuss conditions of substrate, penetrations, and other preparatory work to be performed.
- B. Review TOPCOAT® Roofing System requirements and specifications (GAF specifications, detail drawings, and other contract documents).
- C. Review required submittals, both completed and yet to be completed.
- D. Review and finalize construction schedule related to roofing work, and verify availability of materials, Installer's personnel, equipment, and facilities needed to consistently make progress and avoid delays.
- E. Review required inspection(s), testing, certifications, and material usage accounting procedures.
- F. Review weather and forecasted weather conditions, as well as procedures for coping with unfavorable conditions, including possibility of temporary roofing work.

1.07 DELIVERY, STORAGE, AND PROTECTION

Store and handle TOPCOAT® materials in a manner that shall ensure there is no possibility of contamination. Store in a dry, well-ventilated, weathertight place at temperatures between 50°F and 80°F until product is ready to be applied. Do not allow product to freeze. Do not stack material pallets more than two high. Do not subject existing roof to unnecessary loading of stockpiled materials. Please note that all TOPCOAT® water-based products are packaged in plastic containers.

1.08 ENVIRONMENTAL CONDITIONS

Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with GAF recommendations and guarantee requirements, as follows:

- A. Do not begin work if rain is expected within 24 hours of application or if temperatures are expected to fall below 42°F during the duration of the job. (NOTE: Surface Seal SB and FlexSeal™ can be used in temperatures lower than 42°F. Therefore, they are excluded from this temperature restriction.)
- B. Upper temperature restriction (both air and substrate) for application of TOPCOAT® products is 120°F. If this is not practical, the substrate can be cooled with water, and then TOPCOAT® products can be applied just after the water has flashed off. No moisture can be present when applying TOPCOAT® products.
- C. Allow for sufficient daylight hours necessary for curing of materials, taking into consideration the UV curing properties of TOPCOAT® Membrane and TOPCOAT® Flashing Grade.
- D. CAUTION: Other weather and environmental conditions to consider are mist, dew, condensation, and relative humidity. These factors can lengthen drying times. If TOPCOAT® products are exposed to rain before they are completely dry, product may "wash off" the roof.

1.09 SUBSTRATE CONDITIONS

If any questions arise regarding the compatibility of TOPCOAT® products with an existing substrate, Installer shall prepare test patches to check adhesion (addressed in Part 3 of this specification). Always contact GAF's Technical Services Department concerning questionable substrates, required additional information, and recommended test patch materials.

1.10 GUARANTEE

Provide TOPCOAT® Diamond Pledge™ NDL Roof Guarantee* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given metal roofs, please contact GAF's Technical Services Department.

**See guarantee for complete coverage and restrictions.*

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® Precote

Clear, solvent-based thermoplastic primer/sealer to be applied as the first coat on corrugated asbestos panels, i.e., “Transite.” Precote provides for optimum adhesion of TOPCOAT® products on Transite panels. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sf
Application Method:	Brush or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approx. 30 minutes
Total Solids (by weight):	28.4% ± 1%
Specific Gravity:	0.86 ± 0.1
Weight per Gallon:	7.2 ± 0.5 lbs
Viscosity (75°F):	200 ± 100 cps

B. TOPCOAT® MB Plus

TOPCOAT® MB Plus is a water-based, acrylic, low VOC, sprayable polymeric liquid that cures to form a seamless rubber membrane. Covers and protects most roof surfaces including modified bitumen (smooth and granulated), smooth BUR, Hypalon®, PVC, and metal. For metal roofs, MB Plus is used to prime residual asphalt. MB Plus (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures, and meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It is highly reflective, flexible, and due to unique emulsion chemistry, resists unsightly bleed-through over asphalt substrates better than solvent-based systems. Available in white (for maximum reflectivity) and custom colors. It is non-flammable, presents minimal hazard to the applicator or the environment, and cleans up with water. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	65% ± 2%
Total Solids (by volume):	54% ± 2%

Specific Gravity:	1.32 ± 0.1
Weight per Gallon:	11.0 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	150 psi
Elongation:	275%
Clean-Up:	Water before curing



C. TOPCOAT® MP-300

TOPCOAT® MP-300 is a light blue, water-based, acrylic industrial primer/rust inhibitor that must be applied to any areas of rust before TOPCOAT® Flashing Grade or TOPCOAT® Membrane can be applied. Heavy, flaking rust and scale must be removed by scraping, wire brushing, or grit blasting, followed by power-washing with water. MP-300 can be used to brush-treat small-scattered areas of rust or it can be sprayed over areas of wide-spread rust. It is non-flammable, VOC compliant, and cleans up with water. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft.
Application Method:	Brush or airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 2 hours
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 6 dry mils
Total Solids (by weight):	50% ± 1%
Total Solids (by volume):	40% ± 2%
Specific Gravity:	1.19 ± 0.1
Weight per Gallon:	9.9 ± 0.5 lbs
Viscosity (75°F):	5,000 ± 1,000 cps
Clean-Up:	Water before curing

D. TOPCOAT® XR-2000

TOPCOAT® XR-2000 is a white, water-based, 100% acrylic adhesion-promoting primer designed to enhance the adhesion of the TOPCOAT® Roofing System to prefinished metal roofing, including those containing fluoropolymers such as Kynar® or siliconized polyesters. Due to the wide variety of preapplied finishes, suitability of XR-2000 must be tested on an individual basis. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	0.75 gallon/100 sq. ft.
Application Method:	Airless sprayer or roller
Application Temperature (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 6 hours
Recommended Wet Mil Thickness:	12 wet mils
Recommended Dry Mil Thickness:	5 dry mils
Total Solids (by weight):	52.5% + 1%
Total Solids (by volume):	40% ± 1%
Specific Gravity:	1.22 ± 0.1
Weight per Gallon:	10.2 ± 0.5 lbs
Viscosity (75°F):	3,500 ± 350 cps
Clean-Up:	Water before curing

E. TOPCOAT® Flashing (Brush and Spray Grade)

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. A sprayable version of Flashing Grade (Flashing Grade Spray Formula) is available for use. Flashing Grade Spray Formula has all the same properties as regular Flashing Grade, but is lower in viscosity. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Method - Spray Formula:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

F. TOPCOAT® Flashing - Liquid Fabric

TOPCOAT® Flashing - Liquid Fabric is a light gray, water-based, acrylic polymer flexible liquid fabric seam sealer that does not require reinforcing fabric and reduces horizontal seam labor by 50%. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	5 gallons/125 lineal ft. of seam (6" wide)
Application Method:	Brush or airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 - 48 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	71.7% ± 2%
Total Solids (by volume):	55% ± 2%
Specific Gravity:	1.35 ± 0.1
Tensile:	250 psi ± 10%
Weight per Gallon:	11.3 ± 0.5 lbs
Elongation:	700%
Viscosity (75°F):	130,000 ± 15,000 cps
Clean-Up:	Water before curing

G. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

H. TOPCOAT® Surface Seal SB

TOPCOAT® Surface Seal SB is a solvent-based, sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. It is highly reflective, provides extra protection, and is highly flexible to accommodate temperature-related expansion and contraction of the roof system. Surface Seal SB (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures, and meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). Available in white, aluminum, and custom colors. Ideal for application on most commercial roofs in temperatures as low as 32°F, providing product is stored at room temperature prior to installation. Can also be used in conjunction with Surface Seal SB Primer. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 1.5 gallons/100 sq. ft. per coat
Application Method:	Airless sprayer, roller, or brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 8 dry mils
Total Solids (by weight):	64% ± 3%
Total Solids (by volume):	50% ± 2%
Specific Gravity:	1.20 ± 0.09
Weight per Gallon:	10.1 ± 0.5 lbs
Viscosity (75°F):	11,000 ± 2,000 cps
Tensile Strength:	700 psi
Elongation:	650%
Clean-Up:	Mineral Spirits



Metal Roof System Specs

I. TOPCOAT® Membrane



TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric roofing membrane specially designed to seal the entire roof. TOPCOAT® Membrane (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures, and meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
pH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D-1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Weatherability :	<ul style="list-style-type: none">• 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26.• 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.• 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original
Clean-Up:	Water and mild soap

J. TOPCOAT® Sky-Lite

TOPCOAT® Sky-Lite is a clear, solvent-based, synthetic rubber sealer designed to protect porous, deteriorated fiberglass skylight panels. It is offered in a water-based version when flammability and VOC content are a concern. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft. per coat
Application Method:	Roller or brush
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 1 hour per coat
Total Solids (by weight):	40.2% ± 2%
Total Solids (by volume):	35% ± 2%
Specific Gravity:	0.91 ± 0.1
Weight per Gallon:	7.6 ± 0.5 lbs
Viscosity (75°F):	3,000 ± 400 cps
Clean-Up:	Mineral Spirits, Toluene, Xylene

K. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white, solvent-based, synthetic elastomeric sealant designed to line and waterproof interior and exterior gutters on many buildings. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas. FlexSeal™ LV can also be used on relatively flat metal surfaces because it is self-leveling. This product is easiest to apply at temperatures above 32°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	5 gallons/100 sq. ft.
Application Method:	Trowel or stiff bristle brush
Application Temp (air, surface):	32° – 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% + 2%
Total Solids (by volume):	66% + 2%
Specific Gravity:	1.24 + 0.1
Tensile:	485 psi ± 10%
Weight per Gallon:	10.3 + 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV - Viscosity (75°F):	150,000 ± 15,000 cps
Clean-Up:	Mineral Spirits, Toluene, Xylene

L. TOPCOAT® Surface Seal SB Primer

TOPCOAT® Surface Seal SB Primer is a light gray, solvent-borne, thermoplastic rubber-based industrial primer/rust inhibitor that must be applied to any areas of rust before TOPCOAT® Surface Seal SB can be applied. It is ideal for priming aluminum-coated metal roofs that are beginning to rust through the coating. Surface Seal SB Primer can be used to brush-treat small-scattered areas of rust, or it can be sprayed over areas of widespread rust. Heavy, flaking rust and scale must be removed by scraping, wire brushing, or grit blasting, followed by power-washing with water. Do not apply at temperatures below 32°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft.
Application Method:	Airless sprayer or brush
Application Temperature (air, surface):	32° – 120°F
Drying Time (75°F, 50% RH):	Approximately 2 hours
Wet Mil Thickness:	16 wet mils
Dry Mil Thickness:	7 dry mils
Total Solids (by weight):	60% ± 2%
Total Solids (by volume):	45% ± 2%
Specific Gravity:	1.21 0.1
Weight per Gallon:	10.1 +/- 0.5 lbs
Viscosity (75°F):	10,000 ± 2,000 cps
Clean-Up:	Mineral Spirits

M. Fasteners

Self-drilling stitching screws; hex-head, zinc-coated.

N. Airless Sprayer and Accessories

As recommended by GAF's Technical Services Department for application of sprayable TOPCOAT® products.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrates to receive new roofing. Do not proceed with installation of the TOPCOAT® Roofing System until unsatisfactory conditions have been corrected in a manner acceptable to GAF.
- B. Preparation of the roof substrate is the responsibility of the Installer. Installer shall be responsible for the following:
1. Treatment of excessive gaps
 2. Installation of sheet metal crickets (required as per specifications)
 3. Treatment of ponding water areas
 4. Repair of dented/damaged panels
 5. Retightening and replacement of fasteners
 6. Thorough cleaning/removal of existing paints and coatings*
 7. Treatment of residual asphalt
 8. Treatment of rust areas
 9. Priming of prefinished metal panels
 10. Miscellaneous items

*** In the event that preexisting coatings will not or cannot be removed, please contact GAF's Technical Services Department.**

1. Treatment of Excessive Gaps: All large or excessive gaps existing between roof panels must be closed or made flush with self-drilling fasteners. Closed-celled foam strips or polyurethane foam may be used to pre-fill voids larger than 1/4 inch before applying TOPCOAT® Flashing Grade. Foam shall be shaped with a utility knife or other method to create a cant strip that facilitates both adhesion and water drainage, as well as preventing shearing of TOPCOAT® Flashing Fabric on metal edges.
2. Installation of Sheet Metal Crickets: Sheet metal crickets must be installed according to manufacturer's specifications (minimum 26-gauge metal - heavier gauge required for larger crickets) on the high side of all curb units. Vertical ribs shall be cut a minimum of 2" from the cricket to allow both the cricket flanges to mount flush to the metal panel and facilitate water drainage. Cut vertical ribs shall then be treated in the same fashion as an excessive gap. New crickets shall be "sealed" by placing a continuous bead of TOPCOAT® FlexSeal™ under the flanges before they are mechanically attached to the curb unit and metal roof panel. The cricket flanges must then be stitch-screwed to the curb unit and metal roof panel while the FlexSeal™ is still wet, using fasteners. This procedure shall apply to installation of all new crickets and curbs.
3. Treatment of Ponding Water Areas: Installer shall make every effort to eliminate all ponding water areas on the roof prior to application of TOPCOAT® products ("ponding water" is defined as water which does not properly drain and remains for more than 48 hours after precipitation stops). Ponding water areas that cannot be eliminated shall be treated with FlexSeal™ LV prior to application of other TOPCOAT® products.
4. Repair of Dented/Damaged Panels: Installer shall repair dented and/or damaged metal roof panels. Dents shall be mechanically removed to the maximum extent possible. If ribs are broken, Installer shall cover the broken rib area with a sheet metal cap. Sheet metal rib caps must be "sealed" to the roof by applying TOPCOAT® Flashing Grade over the entire broken rib area to be capped prior to attaching the cap with fasteners. TOPCOAT® Flashing Grade shall then be used to seal all the newly created rib cap seams and fasteners. Installer shall remove and replace severely damaged roof panels prior to application of TOPCOAT® products.

5. Retightening and Replacement of Fasteners: All fasteners must be retightened, secured, or replaced, as necessary. All stripped fasteners must be replaced with larger diameter fasteners, and the area resecured by adding a new fastener next to the one that was stripped. All missing fasteners must be replaced. In evaluating a roofing substrate for the application of the TOPCOAT® System, it is important to note the manner in which the roof is fastened. The fastening pattern may have to be modified/alterd to facilitate the proper installation of the system.
6. Thorough Cleaning/Removal of Existing Paints and Coatings: Metal substrate must be pressure-washed with water. Use minimum working pressure of 3,000 psi to remove all dirt, dust, previous paints/coatings that are delaminating, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.). Roto-spray tip is required to expedite metal panel cleaning. All existing silicone-based sealants must be completely removed from roof substrate prior to application of TOPCOAT® products. In some cases, a sand injection system may be required during the pressure washing to obtain proper adhesion for TOPCOAT® products. When encountering roof substrates that have living organisms such as algae, mold, or fungus, a bleach solution shall be used to kill/remove these organisms during the roof cleaning, before the pressure wash.
7. Treatment of Residual Asphalt: Installer shall make every effort to remove asphaltic roofing elements. Removal efforts must include use of methods such as pressure washing, scrapers, wire brushes, electrical drill wire-wheels, or other similar tools. Residual asphalt is defined as asphaltic material remaining after the exercise of all required removal efforts, and exists when there is asphaltic material greater in thickness than 3 mils over an area greater than 1 square foot. Residual asphaltic areas are to be addressed with TOPCOAT® MB Plus. Apply TOPCOAT® MB Plus as a primer to the entire asphaltic area to be treated.
8. Treatment of Rust Areas: All rust areas must be treated with TOPCOAT® MP-300 to prevent further deterioration of the metal roof panels. **Roof panels that are corroded to the point where they have holes must be replaced.** Prior to TOPCOAT® MP-300 application, remove all loose, flaking, or powdery rust by wire brushing if it has not been removed during the pressure washing. All rust shall be completely covered by the TOPCOAT® MP-300. Since TOPCOAT® MP-300 is designed to adhere to rust, only rusted areas shall be treated with the product. Installer must exercise special care when applying TOPCOAT® MP-300 in high temperature conditions (substrate approaching 120°F). Substrate temperatures must be kept below 120°F when applying TOPCOAT® MP-300. Areas where rust is very heavy on roof panels shall now be treated with two applications of TOPCOAT® MP-300 Rust Inhibitor. The **second** application of TOPCOAT® MP-300 is only required on heavily rusted areas. This will help prevent rust bleed-through after roof panels have been properly prepared in accordance with GAF specifications.
9. Preparation of Test Patches: Installer shall prepare no less than three test patches for all questionable roof substrates (Kynar®-500 or other fluoropolymers, coatings that contain silicone, etc.) to verify adhesion of TOPCOAT® products. Minimum test patch size shall be one square foot. After the test patches have been applied, allow at least 7 days of drying time before checking adhesion. Check adhesion by slicing an “X” (approx. 6" in size) near the center of the test patch. Then try to remove the TOPCOAT® material at the center of the “X” with a spatula. Test patches shall be labeled and photographed to document adhesion test results. Installer shall consult with the GAF Technical Services Department concerning all adhesion test results.
10. Priming of PreFinished Metal Panels: Where roof panel surfaces are known or suspected to contain Kynar®-500, other fluoropolymers, or silicone, test patches shall be prepared both with and without the use of TOPCOAT® XR-2000. Based on test patch adhesion results, Installer shall apply TOPCOAT® XR-2000 on prefinished metal panels per specifications. Note: Since TOPCOAT® XR-2000 has rust-inhibiting properties, TOPCOAT® MP-300 is not required where XR-2000 has been used.

11. Miscellaneous Items:

- a. Pitch Pans: For most situations, pitch pans shall be capped with sheet metal so they can be sealed with TOPCOAT® Flashing Grade or TOPCOAT® FlexSeal™ and TOPCOAT® Flashing Fabric. Contact GAF's Technical Services Department for specific requirements.
- b. Neoprene Pipe Boots: GAF recommends installation of neoprene boots prior to flashing work being performed for certain types of pipe penetrations. Neoprene boots must first be sealed to the roof using a bead of TOPCOAT® FlexSeal™ prior to mechanical attachment with fasteners. Contact GAF's Technical Services Department for specific requirements.
- c. Open Ridge Vents: Open ridge vents (as shown in detail drawings) start to corrode on the inside, and, over time, begin to leak. GAF highly recommends either replacement or installing sheet metal caps over the open ridge vents when they are rusted on the inside or located in a harsh environment (e.g., salt water areas). Also, sheet metal caps shall be installed when leaks are suspected from the vents. Installation of a cap on the ridge vent will prevent water entry while allowing air to continue to flow through the vent. Do not seal weep holes on the vents. Inadequate roof ventilation may cause blistering in the TOPCOAT® Roofing System due to inside air "blowing-out" through roof panel seams.
- d. Condensate Lines: GAF recommends installation of condensate lines from HVAC units to gutters as part of the overall roofing contract. Type of piping used for condensate lines may vary depending on local building codes. Lines must be securely fastened to panel ribs. Damage to roof membrane caused by HVAC units not properly drained will not be covered by the GAF Warranty.

3.02 APPLICATION AND INSPECTION INFORMATION

- A. Preliminary Work/Flashing Details: Preliminary work consists of substrate preparation (addressed earlier in specifications) and all flashing details. After completion of substrate preparation, all flashing details, horizontal seams, penetrations, and curbs must be flashed with either 6" or 12" TOPCOAT® Flashing Fabric and TOPCOAT® Flashing or FlexSeal™ in accordance with GAF detail drawings. TOPCOAT® Flashing or FlexSeal™ must be feathered at the edges so that water can easily flow over the various flashing details. Additional flashing requirements are as follows (see also current GAF detail drawings):

1. Fasteners: All fasteners must be totally encapsulated in TOPCOAT® Flashing or FlexSeal™. In some cases, brushing may be required to obtain the proper feathering around fasteners. For fasteners found in the field of the roof (i.e., not at seams or roof penetrations), GAF recommends use of TOPCOAT® FlexSeal™ for colder climates, and TOPCOAT® Flashing for warmer/hot climates.
2. Gutter Straps: All gutter straps that are fastened above roof panels must be totally encapsulated with TOPCOAT® Flashing or FlexSeal™, including the fasteners.
3. Vertical Seams:
 - a. Ribbed: All ribbed panel vertical seams must be sealed with TOPCOAT® Flashing or FlexSeal™. Feather until seam is no longer visible while brushing in the direction parallel to the seam.
 - b. Standing Seam: All standing vertical seams must be sealed with a 1/2" bead of TOPCOAT® Flashing or FlexSeal™. Feather until seam is no longer visible while brushing in the direction parallel to the seam. (NOTE: This does not apply to inverted "J" standing seams – see next page for details on this type of seam.) Contact GAF's Technical Services Department for details on specific standing seam panels.

- c. Standing “T” Seam: Both vertical seams of the standing “T” must be flashed with a 1/2" bead of TOPCOAT® Flashing or FlexSeal™ brushed into the seams.
 - d. Inverted “J” Seam: In snowy climates and/or when roof leaks are suspected from this type of vertical seam, GAF requires re-crimping the short leg of the seam all the way under the horizontal portion of the inverted “J” seam. Then brush or trowel apply TOPCOAT® Flashing or FlexSeal™ over the newly created single lock vertical seam. Portable seamers can be purchased or leased to do the recrimping.
 - e. Corrugated: All corrugated panel vertical seams must be sealed with TOPCOAT® Flashing or FlexSeal™ only. Feather until seam is no longer visible while brushing in the direction parallel to the seam.
 - f. Batten: Both vertical seams of the batten must be flashed with a 1/2" bead of TOPCOAT® Flashing or FlexSeal™. Feather until seam is no longer visible while brushing in the direction parallel to the seam.
4. Horizontal Seams: All horizontal seams must be reinforced with at least a 6" wide layer of TOPCOAT® Flashing, one layer of TOPCOAT® Flashing Fabric, and then a final layer of TOPCOAT® Flashing to completely encapsulate the Fabric. TOPCOAT® Flashing must be feathered at least 1" beyond each side of the 6" width to allow water to flow over the seam. TOPCOAT® Flashing Fabric must be cut around all fasteners so it lies flat. For ribbed roof panels, the TOPCOAT® Flashing Fabric must be applied over panel ribs in continuous lengths. A minimum 2" overlap is required for all splices in TOPCOAT® Flashing Fabric. **(NOTE: TOPCOAT® Flashing Fabric is not required for horizontal seams on corrugated roofing panels.** Horizontal seams must be secured with fasteners on the high side of every other corrugation spaced no more than 6" on center.) Note: When using TOPCOAT® Flashing – Liquid Fabric, horizontal seam must be made flush by installing two fasteners per flute.
 5. Cinch Straps at Panel End Laps: Retighten cinch straps, as necessary. Surround each strap and fastener head with a bead of TOPCOAT® FlexSeal™. Fully inject FlexSeal™ into the cinch strap water channel to displace all air and moisture within the channel. Then seal the entire lap, strap, and fastener heads with a minimum 6" width of FlexSeal™. Feather the FlexSeal™ to prevent ponding water at the high side of the lap. **Use of TOPCOAT® Flashing Fabric is not required for cinch straps at panel end laps.**
 6. Ridge Caps: Except as noted, all ridge caps must be flashed with a 6" or 12" width of TOPCOAT® Flashing Fabric and TOPCOAT® Flashing or FlexSeal™. All voids and open areas in ridge cap must be filled with polyurethane foam prior to application of TOPCOAT® Flashing or FlexSeal™ and TOPCOAT® Flashing Fabric. (NOTE: In the case of metal “Z” closures that are located within 2" of the ridge cap edge, remove all exposed existing sealant and apply a liberal bead of TOPCOAT® Flashing to all sides of the “Z” closure where they intersect with both the roof panel and ridge cap.)
 7. Rakes: All fixed rake details for the roof must be secured and sealed with a 6" minimum width of TOPCOAT® Flashing or FlexSeal™ and TOPCOAT® Flashing Fabric. If fixed rake metal is fastened to top of roof panel rib and extends back onto roof, trim off excess metal and follow horizontal seam flashing procedures. All voids and open areas must be filled with polyurethane foam prior to application of TOPCOAT® Flashing or FlexSeal™ and TOPCOAT® Flashing Fabric. For standing seam roof panels, contact GAF’s Technical Services Department for particulars.
 8. Parapet Walls: All parapet wall details for the roof must be secured and sealed with a 6" minimum width of TOPCOAT® Flashing or FlexSeal™ and TOPCOAT® Flashing Fabric. If parapet wall flashing metal is fastened to top of roof panel rib and extends back onto roof, trim off excess metal and follow horizontal seam flashing procedures. All voids and open areas must be filled with polyurethane foam prior to application of TOPCOAT® Flashing or FlexSeal™ and TOPCOAT® Flashing Fabric. For standing seam roof panels, contact GAF’s Technical Services Department for particulars.

9. Curb Flashings: All curb flashings, including cricket details, must be flashed with at least a 6" width of TOPCOAT® Flashing Fabric and TOPCOAT® Flashing Grade or FlexSeal™. Encapsulate all fasteners using TOPCOAT® Flashing Grade or FlexSeal™. Do not bridge fasteners. TOPCOAT® Flashing Fabric must be cut around all fasteners so Fabric lies flat.
10. Penetrations: TOPCOAT® Flashing Grade or FlexSeal™ shall be applied around base of unit extending at least 4" on vertical and 4" on base. Embed 6" width of TOPCOAT® Flashing Fabric using additional TOPCOAT® Flashing Grade or FlexSeal™, as necessary. Cut TOPCOAT® Flashing Fabric to accommodate the shape of the penetration. Both the top and bottom of neoprene pipe boots shall be flashed using TOPCOAT® Flashing Grade or FlexSeal™ and TOPCOAT® Flashing Fabric as described above.
11. Skylights: Curb skylights shall be treated in the same fashion as curb flashings. The entire perimeter of flush-mounted skylights must be flashed with a minimum 6" width of TOPCOAT® Flashing Grade or FlexSeal™ and TOPCOAT® Flashing Fabric. All exposed skylight fasteners shall be encapsulated with TOPCOAT® Flashing Grade or FlexSeal™. Do not bridge fasteners. TOPCOAT® Flashing Fabric must be cut around all fasteners so Fabric lies flat. After flashing work has been completed and TOPCOAT® Flashing Grade or FlexSeal™ has cured, treat deteriorated fiberglass skylight panels with TOPCOAT® Sky-Lite material.
12. Gutters: Trowel/brush-apply FlexSeal™ to the interior or exterior gutter incorporating 6" TOPCOAT® Flashing Fabric at all gutter seams. Ensure gutter is completely clean and dry before applying TOPCOAT® FlexSeal™.
13. Ponding Water Areas: Contact the GAF Technical Services Department.

NOTE: All areas that pond water are excluded from coverage under the GAF Guarantee.

- B. Inspect Preliminary Work/Flashing Details for problem areas (e.g., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory.
 1. Inform Project Architect and GAF Guarantee Services Department when all preliminary work and flashing details will be complete and the Installer is ready to proceed with application of TOPCOAT® Membrane. Allow a minimum of two weeks for the interim inspection to be made by GAF's Field Services Department. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or GAF's Guarantee Services Department. Please be advised that technical on-site support for instructing factory-certified contractors in the proper application of the TOPCOAT® Roofing System is available.
- C. Membrane Application:
 1. 15-Year Labor and Material System: 15-Year Labor and Material NDL Guarantee* available to Master and Master Select™ Contractors.
 - a. Spray-apply base coat (gray) of TOPCOAT® Membrane at the rate of 1.50 gallons per 100 sq. ft. Base coat shall be applied parallel to the ribs of roof panels. Allow at least 24 hours drying time, and then inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions.
 - b. Spray-apply finish coat (white) of TOPCOAT® Membrane at the rate of 1.75 gallons per 100 sq. ft. Finish coat shall be applied parallel to the ribs of the roof panels. It should not be applied unless the base coat is clean and dry and will provide proper adhesion. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of roof surface.
 - c. After at least 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc. Specified TOPCOAT® Diamond Pledge™ 15-Year NDL System dry membrane thicknesses are 30 – 32 mils field and 90 mils on seams and flashing details. At completion of all work, seams should not be visible on the roof. All unsatisfactory areas must be repaired.

* See TOPCOAT® Diamond Pledge™ NDL Roof Guarantee for complete coverage and restrictions.

2. 10-Year Labor & Material System: 10-Year Labor and Material NDL Guarantee* available to Master and Master Select™ Contractors.

- a. Spray-apply base coat (white) of TOPCOAT® Membrane at a rate of 1.0 gallon per 100 sq. ft. Base coat shall be applied parallel to the ribs of roof panels. Allow at least 24 hours drying time, then inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions.
- b. Spray-apply finish coat (white – must be same color as used for base coat) of TOPCOAT® Membrane at a rate of 1.0 gallon per 100 sq. ft. Finish coat shall be applied parallel to the ribs of the roof panels. It should not be applied unless the base coat is clean and dry and will provide proper adhesion. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of roof surface.
- c. After at least 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc. Specified 10-Year Labor, 10-Year Material Diamond Pledge™ NDL Guarantee dry membrane thicknesses are 18–20 mils field and 78 mils on seams and flashing details. At completion of all work, seams should not be visible on the roof. All unsatisfactory areas must be repaired.

* See TOPCOAT® Diamond Pledge™ NDL Roof Guarantee for complete coverage and restrictions.

3. 5-Year Labor & Material System: 5-Year Labor and Material NDL Guarantee* available to Master and Master Select™ Contractors.

- a. Spray-apply finish coat (white) of TOPCOAT® Membrane at a rate of 1.5 gallons per 100 sq. ft. Finish coat shall be applied parallel to the ribs of the roof panels. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of roof surface.
- b. After at least 24 hours has elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc. Specified 5-Year Labor, 5-Year Material Diamond Pledge™ NDL Roof Guarantee dry membrane thicknesses are 12–14 mils field and 74 mils on seams and flashing details. At completion of all work, seams should not be visible on the roof. All unsatisfactory areas must be repaired.

* See TOPCOAT® Diamond Pledge™ NDL Roof Guarantee for complete coverage and restrictions.

3.03 OTHER ITEMS

- A. Installer shall take photographs of representative roof areas, including detail work, at the following intervals (minimum):
1. Before work commences
 2. After roof has been thoroughly cleaned and prepared for application of TOPCOAT® Roofing System products
 3. After all flashing and detail work has been performed
 4. After spray application of TOPCOAT® Membrane
- B. Installer shall provide the following support for any applicable on-site inspections by a representative from GAF's Technical Services Department:
1. Representative from Installer's company who has authority to make binding decisions
 2. Required means to access all areas of the treated roof (e.g., various ladders)
 3. Previous photographs of the roof including test patch results, as applicable
 4. TOPCOAT® products and application equipment required to repair roof areas where destructive tests are performed by GAF's Technical Services Department
- C. **Special care must be taken to avoid shading when spraying dark TOPCOAT® Membrane colors. When applying a dark TOPCOAT® Membrane color, Installer must be very careful to always spray wet material onto wet material so that spray lines do not appear. GAF highly recommends installation of any dark-colored finish coat by spraying two lighter coats (instead of one heavy coat) using a smaller orifice spray tip. Installer should also use the roof ribs or standing seams to terminate each spray pass.**
- D. Installer shall take special care when moving spray hoses and other equipment on the roof so that flashing work and encapsulated fastener heads are not damaged. All spray equipment shall remain on the ground for the duration of the job.
- E. If there will be an extended period of time (6 months or greater) between applications of base and finish coats, GAF recommends use of TOPCOAT® white for the base coat (versus gray). Base coat must be thoroughly cleaned before application of the finish coat.
- F. It is strongly recommended that walkways designed for metal roofing systems be installed in all high-traffic areas. Contact the GAF's Technical Services Department for recommendations.
- G. Repairs to TOPCOAT® Membrane: In the event that the TOPCOAT® Membrane is damaged or punctured, for example, through the installation of new roof equipment, etc., make repairs using TOPCOAT® Flashing Grade and TOPCOAT® Flashing Fabric (where necessary) as follows:
1. Damaged areas are to be cut, cleaned, and dried.
 2. Apply Flashing Grade and feather out onto the existing TOPCOAT® Membrane.
 3. If new penetration area has been cut, embed TOPCOAT® Flashing Fabric into TOPCOAT® Flashing Grade according to standard GAF specifications.
 4. Once Flashing Grade has cured, TOPCOAT® white or other appropriate TOPCOAT® color may be applied for aesthetic uniformity.
 5. For required repairs during cold weather conditions (i.e., below 42°F), TOPCOAT® Flashing Grade or FlexSeal™ must be used in lieu of water-based Flashing Grade.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services department at 1-800-522-9224.

TOPCOAT® SYSTEM SPECIFICATIONS – 20-Year Diamond Pledge™ NDL



PART 1 - GENERAL

1.01 SYSTEM DESCRIPTION

Extent of TOPCOAT® Roofing System work is indicated on the drawings and is further defined by provisions of this section, which includes roofing, flashing, reinforcing of joints and junctions, and roof accessories integrally related to roof installation. Areas to be reroofed include existing metal roofs as indicated on drawings. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given metal roof, please contact GAF's Technical Services Department.

1.02 SUBMITTALS

Submit copy of GAF's technical product data sheets, installation instructions, and samples for each type of required roofing product.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide primary products, including TOPCOAT® Membrane, TOPCOAT® Flashing Grade, TOPCOAT® Flashing Fabric, etc., by a single manufacturer (GAF), which has produced this type of product successfully for not less than twenty years. Provide secondary products only as approved by GAF for use with the specified TOPCOAT® Roofing System.
- B. Installer Qualifications: A single Installer or Firm ("Installer") shall perform all work addressed in this section, and shall be certified by GAF for installation of the TOPCOAT® Roofing System.

1.04 REGULATORY REQUIREMENTS

- A. FM Listing: Provide TOPCOAT® Roofing System and component materials that have been evaluated by Factory Mutual System for flame-spread and are listed in "Factory Mutual Approval Guide" for Class I construction over existing metal roofing (flame spread must be in accordance with ASTM E108). Provide roof covering materials bearing FM approval marking on package or container, which indicates that material has been subjected to FM's examination, test procedures, follow-up inspection services, and approval.
- B. UL Listing: Provide TOPCOAT® Roofing System and component materials that have been evaluated by Underwriters Laboratories for flame-spread, and are listed in "Underwriters Laboratory Roofing Materials and Systems Directory" for Class A construction over existing metal or other non-combustible roofing (unlimited slope). Provide roof-covering materials bearing UL approval marking on container, which indicates that material has been subjected to UL's examination, test procedures, and follow-up inspection service.

1.05 INSURANCE CERTIFICATES

Assist owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with extended coverage insurance on roofing and associated work.

1.06 PRE-INSTALLATION MEETING

Approximately two weeks prior to scheduled commencement of roofing installation and associated work, conduct meeting at the project site with Installer, Architect/Owner, GAF representative, and any other persons directly concerned with the performance of the work. The Installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work, including but not necessarily limited to the following:

- A. Tour representative areas of roofing substrates to inspect and discuss the conditions of substrate and penetrations and other preparatory work to be performed.
- B. Review TOPCOAT® Roofing System requirements (GAF specifications, detail drawings, and other contract documents).
- C. Review required submittals, both completed and yet to be completed.
- D. Review and finalize construction schedule related to roofing work, and verify availability of materials, Installer's personnel, equipment, and facilities needed to consistently make progress and avoid delays.
- E. Review required inspection(s), testing, certifications, and material-usage accounting procedures.
- F. Review weather and forecasted weather conditions, as well as procedures for coping with unfavorable conditions, including possibility of temporary roofing work.

1.07 DELIVERY, STORAGE, AND PROTECTION

Store and handle TOPCOAT® materials in a manner to ensure there is no possibility of contamination. Store in a dry, well-ventilated, weathertight place at temperatures between 50°F and 80°F until product is ready to be applied. Do not allow product to freeze. Do not stack material pallets more than two high. Do not subject existing roof to unnecessary loading of stockpiled materials. Please note that all TOPCOAT® water-based products are packaged in plastic containers.

1.08 ENVIRONMENTAL CONDITIONS

Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with GAF recommendations and guarantee requirements as follows:

- A. Do not begin work if rain is expected within twenty-four hours of application, or if temperatures are expected to fall below 42°F during the duration of the job. (NOTE: TOPCOAT® FlexSeal™ can be used in temperatures lower than 42°F. Therefore, it is excluded from this temperature restriction.)
- B. Upper temperature restriction (both air and substrate) for application of GAF products is 120°F. If substrate temperatures exceed 120°F, TOPCOAT® products should be applied during cooler periods of the day. If this is not practical, the substrate can be cooled with water, and then TOPCOAT® products applied just after the water has flashed off. Do not apply if any moisture is present.
- C. Taking into consideration the UV curing properties of TOPCOAT® Membrane and Flashing Grade, allow for sufficient daylight hours necessary for curing of materials.

CAUTION: Other weather and environmental conditions to consider are mist, dew, condensation, and relative humidity. These factors can lengthen TOPCOAT® curing times. If TOPCOAT® products are exposed to rain before they are completely cured, product may “wash-off” the roof.

1.09 SUBSTRATE CONDITIONS

If any questions arise regarding the compatibility of TOPCOAT® products with an existing substrate, Installer shall prepare test patches to check adhesion (addressed in Part 3 of this specification). Always contact GAF’s Technical Services Department concerning questionable substrates, required additional information, and recommended test patch materials.

1.10 GUARANTEE

Provide GAF 20-year TOPCOAT® Diamond Pledge™ NDL Roof Guarantee* per the requirement of the Building Owner and/or Project Architect for the TOPCOAT® products installed in accordance with these specifications. Should a question arise as to the appropriateness of the TOPCOAT® Roofing System for any given metal roofs, please contact GAF's Technical Services Department.

**See guarantee for complete coverage and restrictions.*

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

GAF

2.02 MATERIALS - GENERAL

Note Drying Times: Listed drying times for various TOPCOAT® products are directly affected by environmental conditions and thickness of application. Allow additional drying time when experiencing high relative humidity, low temperatures, and/or very thick product application to prevent improper curing and/or product “wash-off.”

A. TOPCOAT® MB Plus

TOPCOAT® MB Plus is a water-based, acrylic, low VOC sprayable polymeric liquid that cures to form a seamless rubber membrane. Covers and protects most roof surfaces including modified bitumen (smooth and granulated), smooth BUR, PVC, and metal. For metal roofs, MB Plus is used to prime residual asphalt. MB Plus (white only) is an ENERGY STAR® qualified reflective product which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It is highly reflective, flexible, and due to unique emulsion chemistry, resists unsightly bleed-through over asphalt substrates better than solvent-based systems. Available in white (for maximum reflectivity) and custom colors. It is non-flammable, presents minimal hazard to the applicator or the environment, and cleans up with water. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.



Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer or roller
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 dry mils
Total Solids (by weight):	65% ± 2%
Total Solids (by volume):	54% ± 2%
Specific Gravity:	1.32 ± 0.1
Weight per Gallon:	11.0 ± 0.5 lbs
Viscosity (75°F):	15,000 ± 2,000 cps
Tensile Strength:	150 psi
Elongation:	275%
Clean-Up:	Water before curing

B. TOPCOAT® MP-300

TOPCOAT® MP-300 is a light blue, water-based, acrylic industrial primer/rust inhibitor that must be applied to any areas of rust before TOPCOAT® Flashing Grade or TOPCOAT® Membrane can be applied. Heavy, flaking rust and scale must be removed by scraping, wire brushing, or grit blasting, followed by power-washing with water. MP-300 can be used to brush-treat small-scattered areas of rust, or it can be sprayed over areas of widespread rust. It is non-flammable, VOC compliant, and cleans up with water. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft.
Application Method:	Brush or airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 2 hours
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 6 dry mils
Total Solids (by weight):	50% ± 1%
Total Solids (by volume):	40% ± 2%
Specific Gravity:	1.19 ± 0.1
Weight per Gallon:	9.9 ± 0.5 lbs
Viscosity (75°F):	5,000 ± 1,000 cps
Clean-Up:	Water before curing

C. TOPCOAT® Flashing Grade (Regular and Spray Formula)

TOPCOAT® Flashing Grade is a light gray, water-based, 100% acrylic synthetic rubber sealant that is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Membrane. Like the TOPCOAT® Membrane, it has superior adhesion, flexibility, and resistance to ultraviolet degradation. A sprayable version – TOPCOAT® Flashing - Spray Grade – is available for use. Spray Grade has all the same properties as regular Flashing Grade, but is lower in viscosity. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate (seams):	5 gallons/125 ft. (6" width)
Application Method:	Brush or caulking gun
Application Method - Spray Formula:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	105 wet mils
Recommended Dry Mil Thickness:	60 dry mils
Total Solids (by weight):	68% ± 1%
Total Solids (by volume):	56% ± 2%
Specific Gravity:	1.44 ± 0.1
Tensile:	225 psi ± 10%
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-Up:	Water before curing

D. TOPCOAT® Flashing Fabric

TOPCOAT® Flashing Fabric is a stitchbond polyester that must be used in conjunction with TOPCOAT® Flashing Grade or FlexSeal™ at all penetrations, joints, or changes in plane that are subjected to high shear or stress.

Average Weight (ounces per square yard) :	3.4
Average Tensile Strength per ASTM D5034:	74 lbs
Average Elongation at Break per ASTM D5034:	21.3%
Trapezoidal Tear Strength per ASTM D117:	13.5 lbs
Thickness per ASTM D1777:	.018

E. TOPCOAT® Membrane

TOPCOAT® Membrane is a water-based, 100% acrylic spray-applied liquid that cures to form a seamless elastomeric membrane specially designed to seal the entire roof. TOPCOAT® Membrane (white only) is an ENERGY STAR® qualified reflective product, which will help in reducing building temperatures. Meets the stringent standards set by the Cool Roof Rating CouncilSM for solar reflectance and thermal emittance (white only). It offers high tensile strength and elongation, and is virtually undamaged by extended exposure to solar ultraviolet energy. Ultraviolet rays enhance curing. It is low in VOC, non-flammable, and presents minimal hazard to the applicator and the environment. It is available in white (for maximum reflectivity) and 15 standard colors. Custom tinting is available upon request. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1.0 to 3.0 gallons/100 sq. ft. total
Application Method:	Airless sprayer
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours per coat
Wet Mil Thickness:	(1.0 Gallon/100SF) - 16 wet mils
Dry Mil Thickness:	(1.0 Gallon/100SF) - 9 - 10 dry mils
Total Solids (by weight):	71% ± 3%
Total Solids (by volume):	58% ± 2%
Specific Gravity:	1.48 ± 0.06
Weight per Gallon:	12.3 ± 0.5 lbs
Viscosity (75°F):	19,000 ± 3,000 cps
PH:	10.0 ± 1.0
Elongation:	375% ± 25%
Tensile Strength:	275 ± 25 psi
Water Permeability:	5.28 perm inch (ASTM D-1653)
Freeze-Thaw Stability:	Passes five (5) cycles
Low Temp Flexibility:	35 mil dry film will bend 180° @ -30°F without fracturing
Weatherability :	<ul style="list-style-type: none">• 1,000 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26.• 1,500 hours Atlas Weather-o-meter® exposure per ASTM D412, ASTM G26. No cracking, embrittlement, loss of adhesion, or discoloration.• 2,000 hours UV exposure, type UV bulb, per ASTM G53. No cracking, embrittlement, loss of adhesion, or discoloration.
Tensile Strength:	150% of original
Elongation:	85% of original
Clean-Up:	Water and mild soap

F. TOPCOAT® SKY-LITE

TOPCOAT® Sky-Lite is a clear, solvent-based, synthetic rubber sealant designed to protect porous, deteriorated fiberglass skylight panels. It is offered in a water-based version when flammability and VOC content are a concern. Do not apply at temperatures below 42°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	1 gallon/100 sq. ft. per coat
Application Method:	Roller or brush
Application Temp (air, surface):	42° - 120°F
Drying Time (75°F, 50% RH):	Approximately 1 hour per coat
Total Solids (by weight):	40.2% ± 2%
Total Solids (by volume):	35% ± 2%
Specific Gravity:	0.91 ± 0.1
Weight per Gallon:	7.6 ± 0.5 lbs
Viscosity (75°F):	3,000 ± 400 cps
Clean-Up:	Mineral Spirits, Toluene, Xylene

G. TOPCOAT® FlexSeal™

TOPCOAT® FlexSeal™ is a white solvent-based synthetic elastomeric sealant designed to line and waterproof interior and exterior gutters on many buildings. FlexSeal™ is extremely flexible and durable. Like all solvent-based products, the surface must be completely free of moisture before application. A low-viscosity version of FlexSeal™ (FlexSeal™ LV) is available for use in confined areas. FlexSeal™ LV can also be used on relatively flat metal surfaces because it is self-leveling. This product is easiest to apply at temperatures above 32°F. Substrate temperatures must be below 120°F when applying product.

Application Rate:	5 gallons/100 sq. ft.
Application Method:	Trowel or stiff bristle brush
Application Temp (air, surface):	32° - 120°F
Drying Time (75°F, 50% RH):	Approximately 24 hours
Recommended Wet Mil Thickness:	85 wet mils
Recommended Dry Mil Thickness:	50 dry mils
Total Solids (by weight):	77% + 2%
Total Solids (by volume):	66% + 2%
Specific Gravity:	1.24 + 0.1
Tensile:	485 psi ± 10%
Weight per Gallon:	10.3 + 0.5 lbs
Viscosity (75°F):	600,000 ± 100,000 cps
LV - Viscosity (75°F):	150,000 ± 15,000 cps
Clean-Up:	Mineral Spirits, Toluene, Xylene

H. Fasteners

Self-drilling stitching screws; hex-head, zinc-coated.

I. Airless Sprayer and Accessories

As recommended by GAF's Technical Services Department for application of sprayable TOPCOAT® products.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A. Examine substrates to receive new roofing. Do not proceed with installation of the TOPCOAT® Roofing System until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer (GAF).
- B. Preparation of the roof substrate is the responsibility of the Installer. Installer shall be responsible for the following:
 - 1. Treatment of excessive gaps
 - 2. Installation of sheet metal crickets (required as per specifications)
 - 3. Treatment of ponding water areas
 - 4. Repair of dented/damaged panels
 - 5. Retightening and replacement of fasteners
 - 6. Thorough cleaning/removal of existing paints and coatings*
 - 7. Treatment of residual asphalt
 - 8. Treatment of rust areas
 - 9. Priming of prefinished metal panels
 - 10. Miscellaneous items

*** In the event that pre-existing coatings will not or cannot be removed, please contact GAF's Technical Services Department.**

- 1. Treatment of Excessive Gaps: All large or excessive gaps existing between roof panels must be closed or made flush with self-drilling fasteners. Closed-celled foam strips or polyurethane foam may be used to pre-fill voids larger than 1/4" before applying TOPCOAT® Flashing Grade or FlexSeal™. Foam shall be shaped with a utility knife or other method to create a cant strip that facilitates both adhesion and water drainage, as well as prevents shearing of TOPCOAT® Flashing Fabric on metal edges.
- 2. Installation of Sheet Metal Crickets: Sheet metal crickets must be installed according to manufacturer's specifications (minimum 26-gauge metal; heavier gauge required for larger crickets) on the high side of all curb units. Vertical ribs shall be cut a minimum of 2" from the cricket to allow both the cricket flanges to mount flush to the metal panel and facilitate water drainage. Cut vertical ribs shall then be treated in the same fashion as an excessive gap. New crickets shall be "sealed" by placing a continuous bead of TOPCOAT® FlexSeal™ under the flanges before they are mechanically attached to the curb unit and metal roof panel. Then, the cricket flanges must be stitch-screwed to the curb unit and metal roof panel while the FlexSeal™ is still wet, using fasteners. This procedure shall apply to installation of all new crickets and curbs.
- 3. Treatment of Ponding Water Areas: Installer shall make every effort to eliminate all ponding water areas on the roof prior to application of TOPCOAT® products ("ponding water" is defined as water that does not properly drain and remains for more than 48 hours after precipitation stops). Ponding water areas that cannot be eliminated shall be treated with FlexSeal™ prior to application of other TOPCOAT® products.
- 4. Repair of Dented/Damaged Panels: Installer shall repair dented and/or damaged metal roof panels. Dents shall be mechanically removed to the maximum extent possible. If ribs are broken, installer shall cover the broken rib area with a sheet metal cap. Sheet metal rib caps must be "sealed" to the roof by applying TOPCOAT® Flashing Grade or FlexSeal™ over the entire broken rib area to be capped prior to attaching the cap with fasteners. Then, TOPCOAT® Flashing Grade or FlexSeal™ shall be used to seal all the newly created rib cap seams and fasteners. Installer shall remove and replace severely damaged roof panels prior to application of TOPCOAT® products.

5. Retightening and Replacement of Fasteners: All fasteners must be retightened, secured, or replaced, as necessary. All stripped fasteners must be replaced with larger diameter fasteners, and the area resecured by adding a new fastener next to the one that was stripped. All missing fasteners must be replaced. In evaluating a roofing substrate for the application of the TOPCOAT® System, it is important to note the manner in which the roof is fastened. The fastening pattern may have to be modified/alterd to facilitate the proper installation of the system.
6. Thorough Cleaning/Removal of Existing Paints and Coatings: Metal substrate must be pressure-washed with water. Use minimum working pressure of 3,000 psi to remove all dirt, dust, previous paints/coatings that are delaminating, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.). Roto-spray tip is required to expedite metal panel cleaning. All existing silicone-based sealants must be completely removed from roof substrate prior to application of TOPCOAT® products. In some cases, a sand injection system may be required during the pressure-washing to obtain proper adhesion for TOPCOAT® products. When encountering roof substrates that have living organisms such as algae, mold or fungus, a bleach solution shall be used to kill/remove these organisms during the roof cleaning, before pressure-washing the substrate.
7. Treatment of Residual Asphalt: Installer shall make every effort to remove asphaltic roofing elements. Removal efforts must include use of methods such as pressure washing, scrapers, wire brushes, electrical drill wire-wheels, or other similar tools. Residual asphalt is defined as asphaltic material remaining after the exercise of all required removal efforts, and exists when there is asphaltic material greater in thickness than 3 mils over an area greater than 1 square foot. Residual asphaltic areas are to be addressed with TOPCOAT® MB Plus. Apply TOPCOAT® MB Plus as a primer to the entire asphaltic area to be treated.
8. Treatment of Rust Areas: All rust areas must be treated with TOPCOAT® MP-300 to prevent further deterioration of the metal roof panels. **Roof panels that are corroded to the point where they have holes must be replaced.** Prior to TOPCOAT® MP-300 application, remove all loose, flaking, or powdery rust by wire brushing if it has not been removed during the pressure-washing. All rust shall be completely covered by the TOPCOAT® MP-300. Roof surface shall have no more than 20% rust.
9. Miscellaneous Items:
 - a. Neoprene Pipe Boots: GAF recommends installation of neoprene boots prior to flashing work being performed for certain types of pipe penetrations. Neoprene boots must first be sealed to the roof using a bead of FlexSeal™ prior to mechanical attachment with fasteners. Contact GAF's Technical Services Department for specific requirements.
 - b. Open Ridge Vents: Open ridge vents (as shown in detail drawings) start to corrode on the inside and, over time, begin to leak. GAF strongly recommends either replacement or installing sheet metal caps over the open ridge vents when they are rusted on the inside and/or located in a harsh environment (e.g., salt water areas). Also, sheet metal caps shall be installed when leaks are suspected from the vents. Installation of a cap on the ridge vent will prevent water entry while allowing air to continue to flow through the vent. Do not seal weep holes on the vents. Inadequate roof ventilation may cause blistering in the TOPCOAT® System due to inside air "blowing-out" through roof panel seams.
 - c. Condensate Lines: GAF recommends installation of condensate lines from HVAC units to gutters as part of the overall roofing contract. Type of piping used for condensate lines may vary depending on local building codes. Lines must be securely fastened to panel ribs.

3.02 APPLICATION AND INSPECTION INFORMATION

A. Preliminary Work/Flashing Details: Preliminary work consists of substrate preparation (addressed earlier in specifications) and all flashing details. After completion of substrate preparation, all flashing details, horizontal seams, penetrations, and curbs must be flashed with either 6" or 12" TOPCOAT® Flashing Fabric and TOPCOAT® Flashing Grade in accordance with GAF Detail Drawings. TOPCOAT® Flashing Grade must be feathered at the edges so that water can easily flow over the various flashing details. Additional flashing requirements are as follows (see also current GAF Detail Drawings):

1. Fasteners: All fasteners must be totally encapsulated in TOPCOAT® Flashing Grade or FlexSeal™. In some cases, brushing may be required to obtain the proper feathering around fasteners. For fasteners found in the field of the roof (i.e., not at seams or roof penetrations), GAF recommends use of FlexSeal™ for colder climates.
2. Gutter Straps: All gutter straps that are fastened above roof panels must be totally encapsulated with TOPCOAT® Flashing Grade or FlexSeal™, including the fasteners.
3. Vertical Seams:
 - a. Ribbed: All ribbed panel vertical seams must be sealed with TOPCOAT® Flashing Grade or FlexSeal™. Feather Flashing Grade until seam is no longer visible while brushing in the direction parallel to the seam.
 - b. Standing Seam: All standing vertical seams must be sealed with a 1/2" bead of TOPCOAT® Flashing Grade or FlexSeal™. Feather Flashing Grade until seam is no longer visible while brushing in the direction parallel to the seam. (NOTE: This does not apply to inverted "J" standing seams – see below for details on this type of seam.) Contact GAF's Technical Services Department for details on specific standing seam panels.
 - c. Standing "T" Seam: Both vertical seams of the standing "T" must be flashed with a 1/2" bead of TOPCOAT® Flashing Grade or FlexSeal™ brushed into the seams.
 - d. Inverted "J" Seam: In snowy climates and/or when roof leaks are suspected from this type of vertical seam, GAF requires recrimping the short leg of the seam all the way under the horizontal portion of the inverted "J" seam. Then brush or trowel-apply TOPCOAT® Flashing Grade or FlexSeal™ over the newly created single lock vertical seam. Portable seamers can be purchased or leased to do the recrimping.
 - e. Corrugated: All corrugated panel vertical seams must be sealed with TOPCOAT® Flashing Grade or FlexSeal™. Feather Flashing Grade until seam is no longer visible while brushing in the direction parallel to the seam.
 - f. Batten: Both vertical seams of the batten must be flashed with a 1/2" bead of TOPCOAT® Flashing Grade or FlexSeal™. Feather Flashing Grade or FlexSeal™ until seam is no longer visible while brushing in the direction parallel to the seam.
4. Horizontal Seams: All horizontal seams must be reinforced with at least a 6" wide layer of TOPCOAT® Flashing Grade or FlexSeal™, one layer of TOPCOAT® Flashing Fabric, and then a final layer of TOPCOAT® Flashing Grade or FlexSeal™ to completely encapsulate the Fabric. TOPCOAT® Flashing Grade or FlexSeal™ must be feathered at least 1" beyond each side of the 6" width to allow water to flow over the seam. TOPCOAT® Flashing Fabric must be cut around all fasteners so it lies flat. For ribbed roof panels, the TOPCOAT® Flashing Fabric must be applied over panel ribs in continuous lengths. A minimum 2" overlap is required for all splices in TOPCOAT® Flashing Fabric. (NOTE: TOPCOAT® Flashing Fabric is not required for horizontal seams on corrugated roofing panels. Horizontal seams must be secured with fasteners on the high side of every other corrugation spaced no more than 6" on center.) Note: When using TOPCOAT® Liquid Fabric Flashing Grade, horizontal seam must be made flush by installing two fasteners per flute.

5. Cinch Straps at Panel End laps: Retighten cinch straps, as necessary. Surround each strap and fastener head with a bead of TOPCOAT® FlexSeal™. Fully inject FlexSeal™ into the cinch strap water channel to displace all air and moisture within the channel. Then seal the entire lap, strap, and fastener heads with a minimum 6" width of FlexSeal™. Feather the FlexSeal™ to prevent ponding water at the high side of the lap. Use of TOPCOAT® Flashing Fabric is not required for cinch straps at panel end laps.
6. Ridge Caps: Except as noted, all ridge caps must be flashed with a 6" or 12" width of TOPCOAT® Flashing Fabric and TOPCOAT® Flashing Grade or FlexSeal™. All voids and open areas in ridge cap must be filled with polyurethane foam prior to application of TOPCOAT® Flashing Fabric and TOPCOAT® Flashing Grade or FlexSeal™. (NOTE: In the case of metal "Z" closures which are located within 2" of the ridge cap edge, remove all exposed existing sealant and apply a liberal bead of TOPCOAT® Flashing Grade or FlexSeal™ to all sides of the "Z" closure where they intersect with both the roof panel and ridge cap.)
7. Rakes: All fixed rake details for the roof must be secured and sealed with a 6" minimum width of TOPCOAT® Flashing Grade or FlexSeal™ and TOPCOAT® Flashing Fabric. If fixed rake metal is fastened to top of roof panel rib and extends back onto roof, trim off excess metal and follow horizontal seam flashing procedures. All voids and open areas must be filled with polyurethane foam prior to application of TOPCOAT® Flashing Fabric and Flashing Grade or FlexSeal™. For standing seam roof panels, contact GAF's Technical Services Department for specific information.
8. Parapet Walls: All parapet wall details for the roof must be secured and sealed with a 6" minimum width of TOPCOAT® Flashing Grade or FlexSeal™ and TOPCOAT® Flashing Fabric. If parapet wall flashing metal is fastened to top of roof panel rib and extends back onto roof, trim off excess metal and follow horizontal seam flashing procedures. All voids and open areas must be filled with polyurethane foam prior to application of TOPCOAT® Flashing Fabric and Flashing Grade or FlexSeal™. For standing seam roof panels, contact GAF's Technical Services Department for spraying information.
9. Curb Flashings: All curb flashings, including cricket details, must be flashed with at least a 6" width of TOPCOAT® Flashing Fabric and TOPCOAT® Flashing Grade or FlexSeal™. Encapsulate all fasteners using TOPCOAT® Flashing Grade or FlexSeal™. Do not bridge fasteners. TOPCOAT® Flashing Fabric must be cut around all fasteners so fabric lies flat.
10. Penetrations: TOPCOAT® Flashing Grade or FlexSeal™ shall be applied around base of unit extending at least 4" on vertical and 4" on base. Embed 6" width of TOPCOAT® Flashing Fabric using additional TOPCOAT® Flashing Grade or FlexSeal™, as necessary. Cut TOPCOAT® Flashing Fabric to accommodate the shape of the penetration. Both the top and bottom of neoprene pipe boots shall be flashed using TOPCOAT® Flashing Grade or FlexSeal™ and TOPCOAT® Flashing Fabric as described above.
11. Skylights: Curb skylights shall be treated in the same fashion as curb flashings. The entire perimeter of flush-mounted skylights must be flashed with a minimum 6" width of TOPCOAT® Flashing Grade or FlexSeal™ and TOPCOAT® Flashing Fabric. All exposed skylight fasteners shall be encapsulated with TOPCOAT® Flashing Grade or FlexSeal™. Do not bridge fasteners. TOPCOAT® Flashing must be cut around all fasteners so fabric lies flat. After flashing work has been completed and TOPCOAT® Flashing Grade or FlexSeal™ has cured, treat deteriorated fiberglass skylight panels with TOPCOAT® Sky-Lite material.
12. Gutters: Trowel/brush-apply FlexSeal™ to the interior or exterior gutter incorporating 6" TOPCOAT® Flashing Fabric at all gutter seams. Ensure gutter is completely clean and dry before applying TOPCOAT® FlexSeal™.
13. Ponding Water Areas: Contact GAF's Technical Services Department.

NOTE: All areas that pond water are excluded from coverage under the TOPCOAT® Diamond Pledge™ NDL Roof Guarantee.*

* See guarantee for complete coverage and restrictions.

- B. Inspect Preliminary Work/Flashing Details for problem areas (e.g., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory.
1. Inform Project Architect and GAF Guarantee Services Department when all preliminary work and flashing details will be complete and the Installer is ready to proceed with application of TOPCOAT® Membrane. Allow a minimum of two weeks for the interim inspection. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or GAF. Please be advised that technical on-site support for instructing certified contractors in the proper application of the TOPCOAT® Roofing System is available.
- C. Membrane Application:
1. Spray-apply base coat (gray) of TOPCOAT® Membrane at the rate of 1.50 gallons per 100 sq. ft. Base coat shall be applied parallel to the ribs of roof panels. Allow at least 24 hours drying time, then inspect the base coat for defects, flaws, or gaps. Correct any unsatisfactory conditions.
 2. Spray-apply intermediate coat (white) of TOPCOAT® Membrane at the rate of 1.50 gallons per 100 sq. ft. Intermediate coat shall be applied parallel to the ribs of the roof panels. It should not be applied unless the base coat is clean and dry and will provide proper adhesion. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of roof surface.
 3. Spray-apply final coat (white) of TOPCOAT® Membrane at the rate of 1.50 gallons per 100 sq. ft. Finish coat shall be applied parallel to the ribs of the roof panels. It should not be applied unless the intermediate coat is clean and will provide proper adhesion. Allow a minimum of 24 hours drying time prior to allowing foot traffic or inspection of roof surface.
 4. After at least 24 hours have elapsed, inspect the final roof surface for flaws, gaps, insufficient thickness, etc. Specified TOPCOAT® 20-Year Labor and Material Diamond Pledge™ NDL Roof Guarantee dry membrane thicknesses are 42–45 mils field and 90 mils on seams and flashing details. At completion of all work, seams should not be visible on the roof. All unsatisfactory areas must be repaired.

3.03 OTHER ITEMS

- A. Installer shall take photographs of representative roof areas, including detail work, at the following intervals (minimum):
1. Before work commences.
 2. After roof has been thoroughly cleaned and prepared for application of TOPCOAT® Roofing System products.
 3. After all flashing and detail work has been performed.
 4. After spray application of TOPCOAT® Membrane.
- B. Installer shall provide the following support for on-site inspections by a representative from GAF's Technical Services Department:
1. Representative from Installer's company who has authority to make binding decisions.
 2. Required means to access all areas of the treated roof (e.g., various ladders).
 3. Previous photographs of the roof including test patch results, as applicable.
 4. TOPCOAT® products and application equipment required to repair roof areas where destructive tests are to be performed by GAF's Technical Services Department.
- C. Special care must be taken to avoid shading when spraying dark TOPCOAT® Membrane colors. When applying a dark TOPCOAT® Membrane color, installer must be careful to always spray wet material onto wet material so that spray lines do not appear. Install any dark-colored finish coat by spraying two lighter coats (instead of one heavy coat) using a smaller orifice spray tip. Installer should also use the roof ribs or standing seams to terminate each spray pass.

- D. Installer shall take special care when moving spray hoses and other equipment on the roof so that flashing work and encapsulated fastener heads are not damaged. All spray equipment shall remain on the ground for the duration of the job.
- E. If there will be an extended period of time (6 months or greater) between applications of base and finish coats, GAF recommends use of TOPCOAT® white for the base coat (versus gray). Also, base coat must be thoroughly cleaned before application of the finish coat.
- F. It is strongly recommended that walkways designed for metal roofing systems be installed in all high-traffic areas. Contact GAF's Technical Services Department for recommendations.

For application questions, please contact GAF Technical Services at 1-800-766-3411.

Note: Repair leaks promptly to avoid adverse effects, including mold growth.

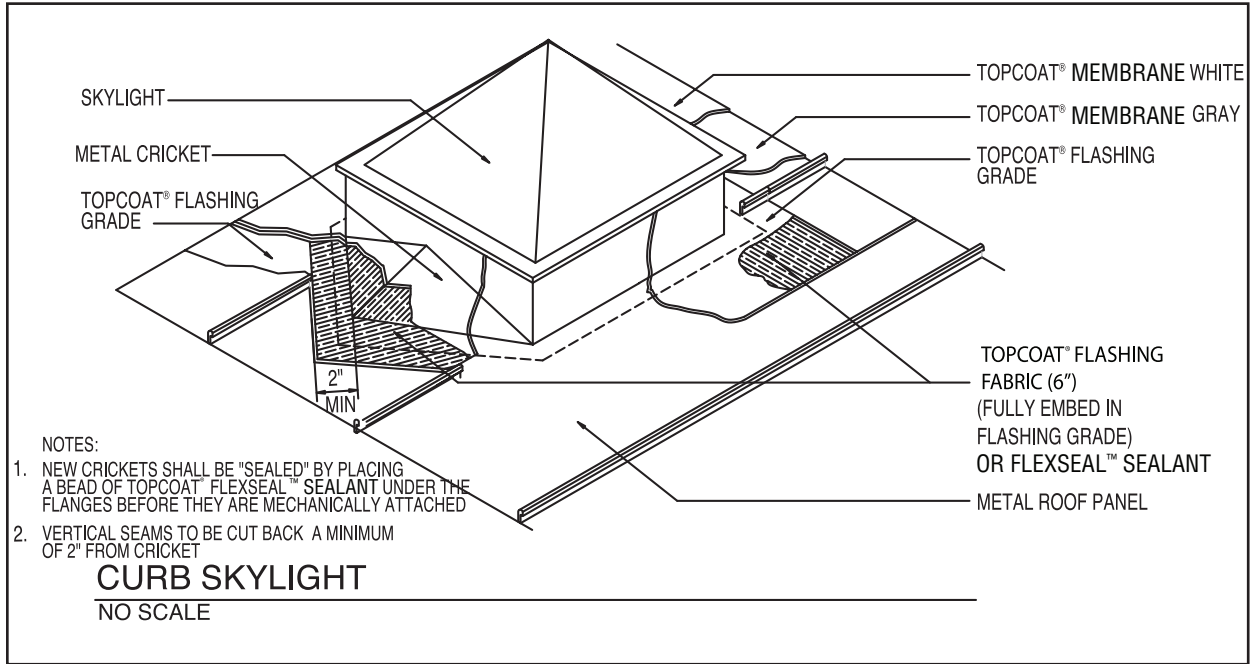
For specific TOPCOAT® specification documents and construction details, please contact the GAF Architectural Information Services department at 1-800-522-9224.

Notes

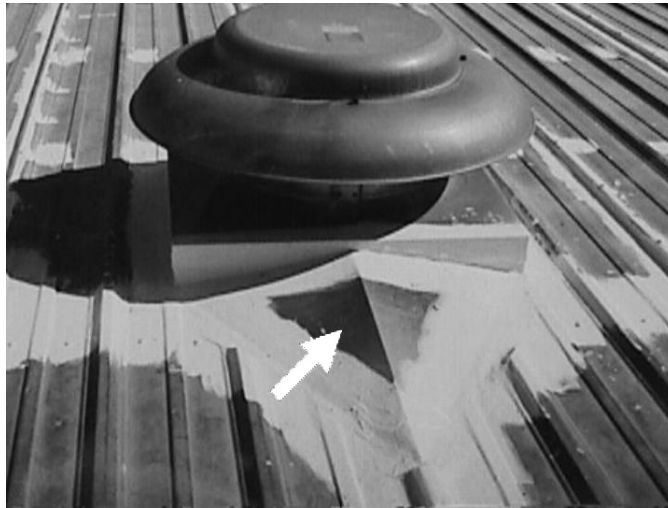
SECTION 5A:

Metal Roof Detail Drawings

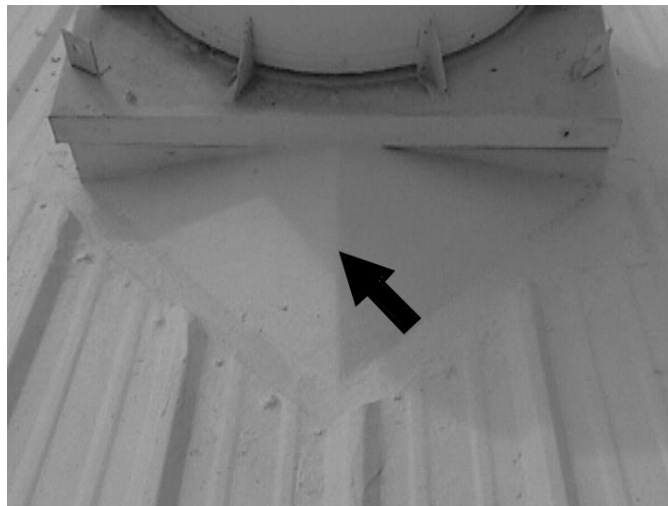
Sheet Metal Cricket



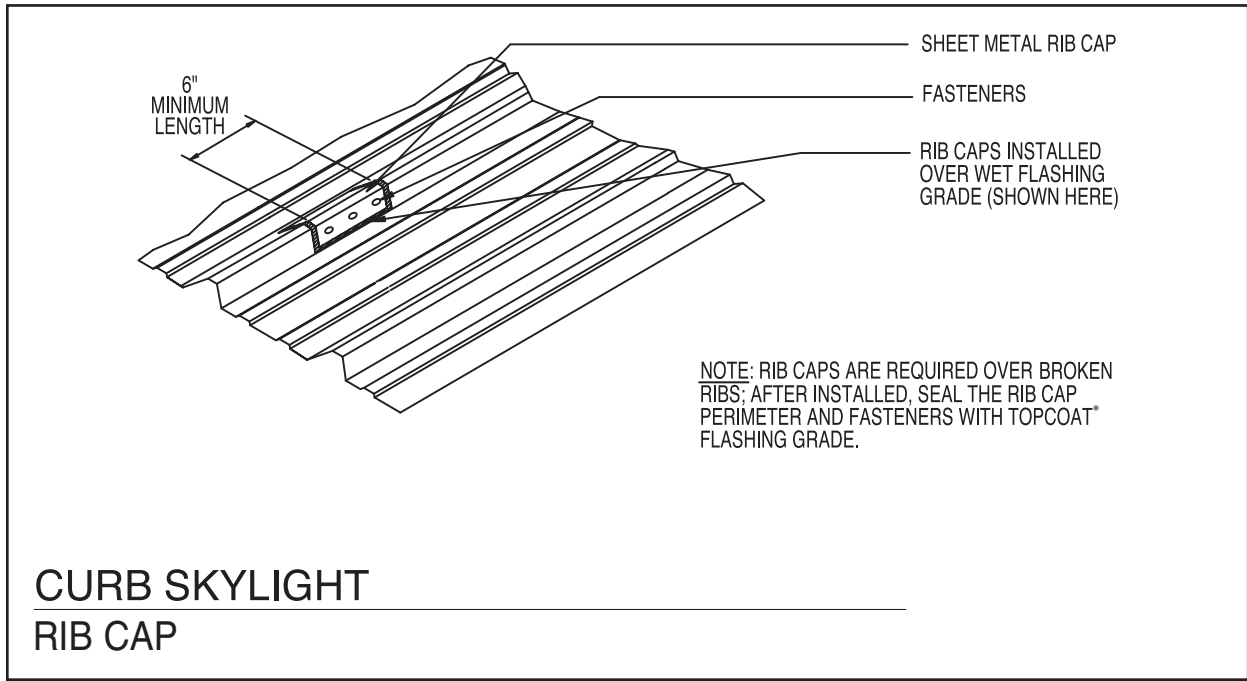
Sheet Metal Cricket Installed And Flashed



Sheet Metal Cricket Completed



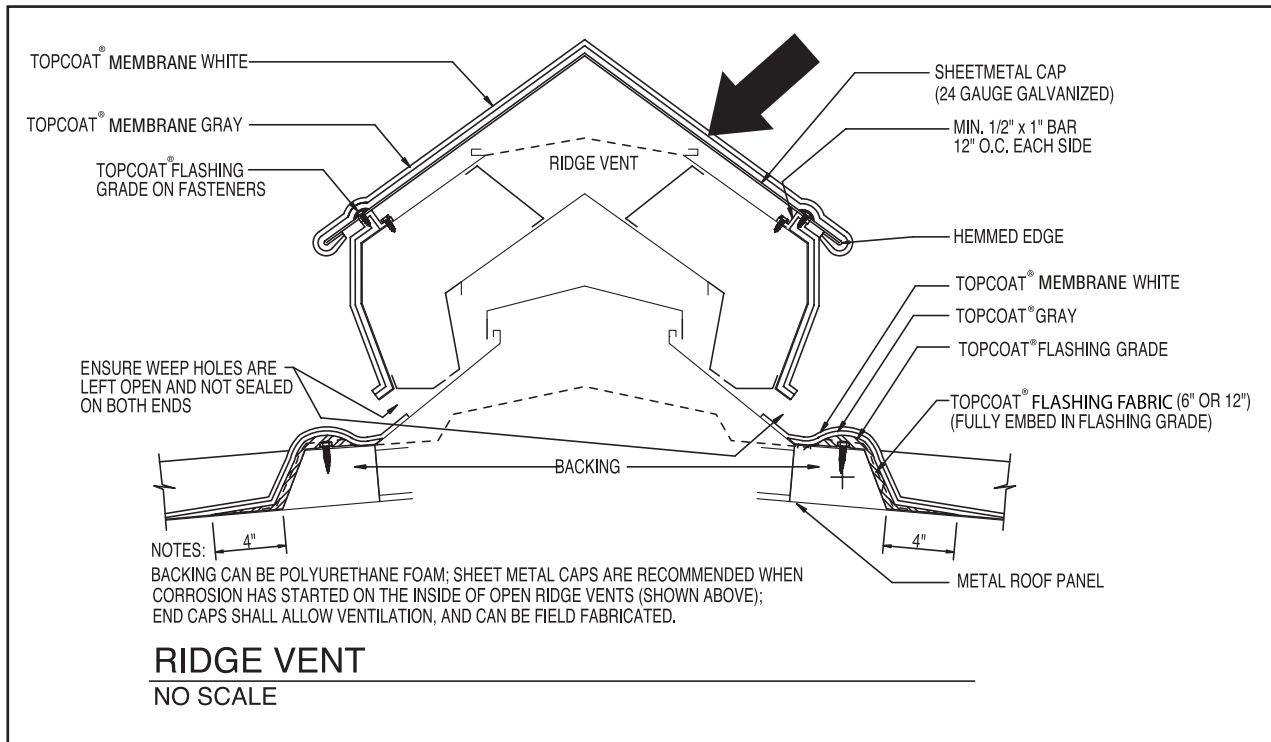
Sheet Metal Cap



Seal Cap Seams And Fasteners With Flashing Grade



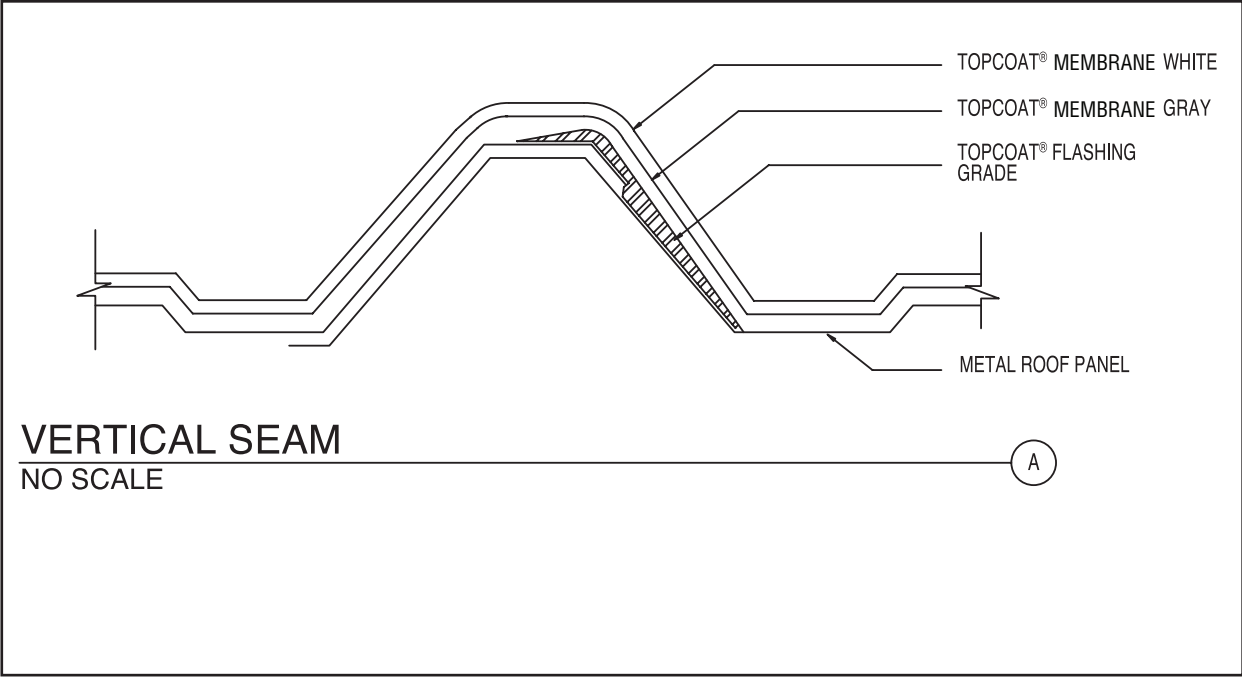
Ridge Vent



Ridge Vent Cap Installed



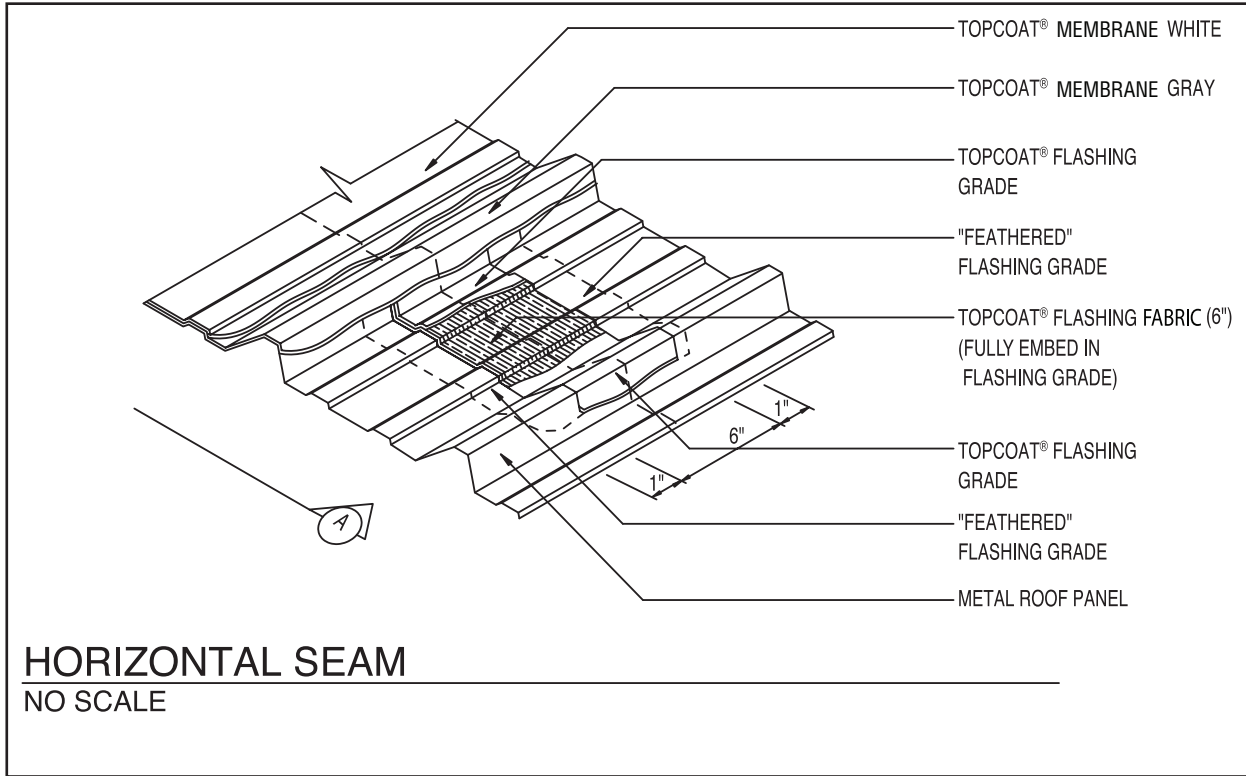
Ribbed Panel



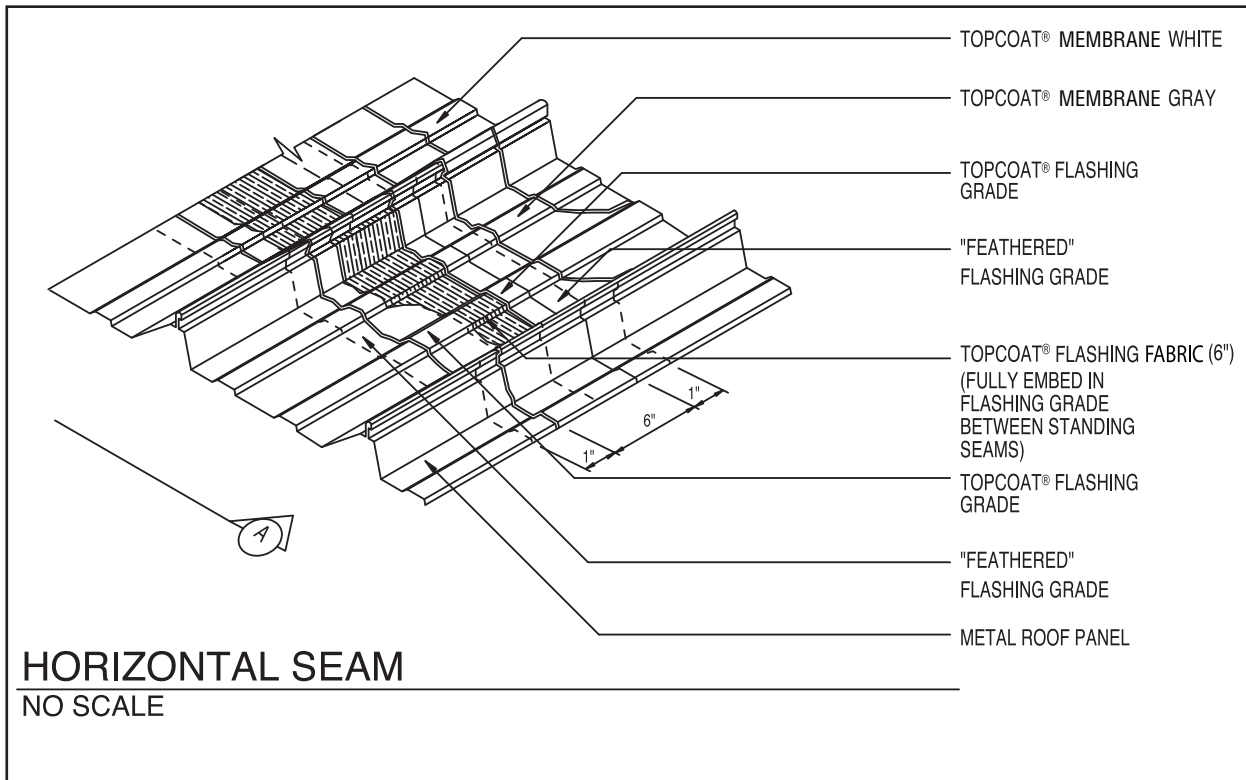
Flashed Vertical Seam



Ribbed Panel



Standing Seam On Ribbed Panel



Initial Application Of Flashing Grade



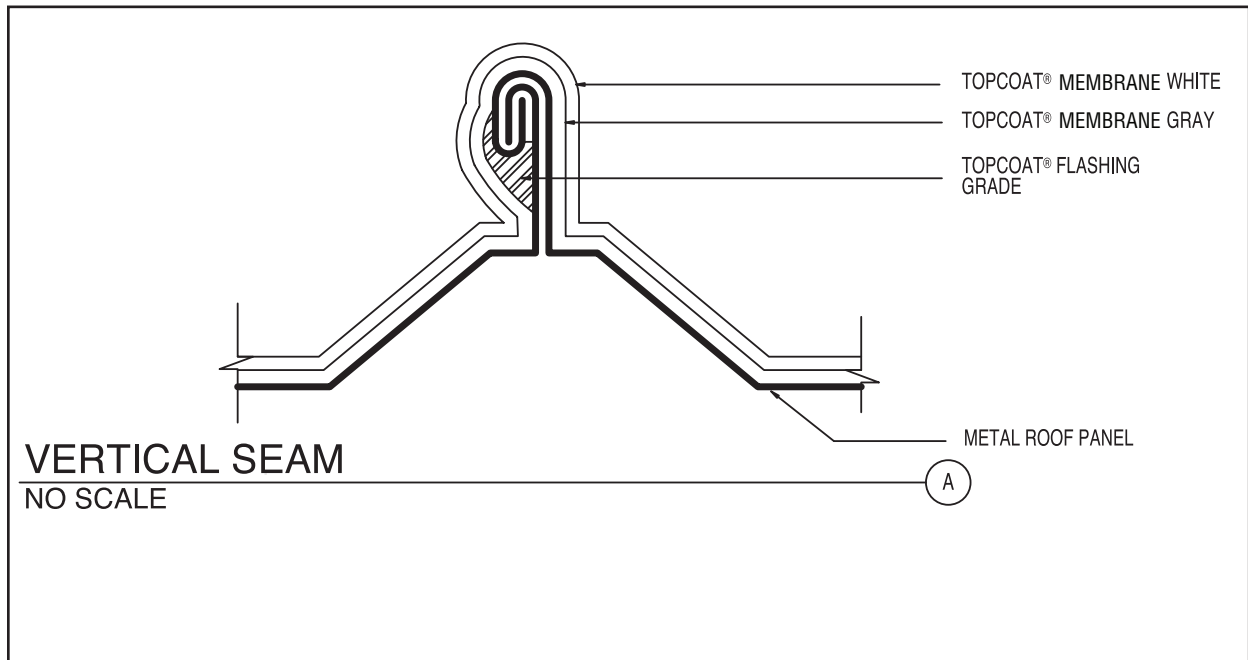
Embed TOPCOAT® Flashing Fabric (Transition Slits)



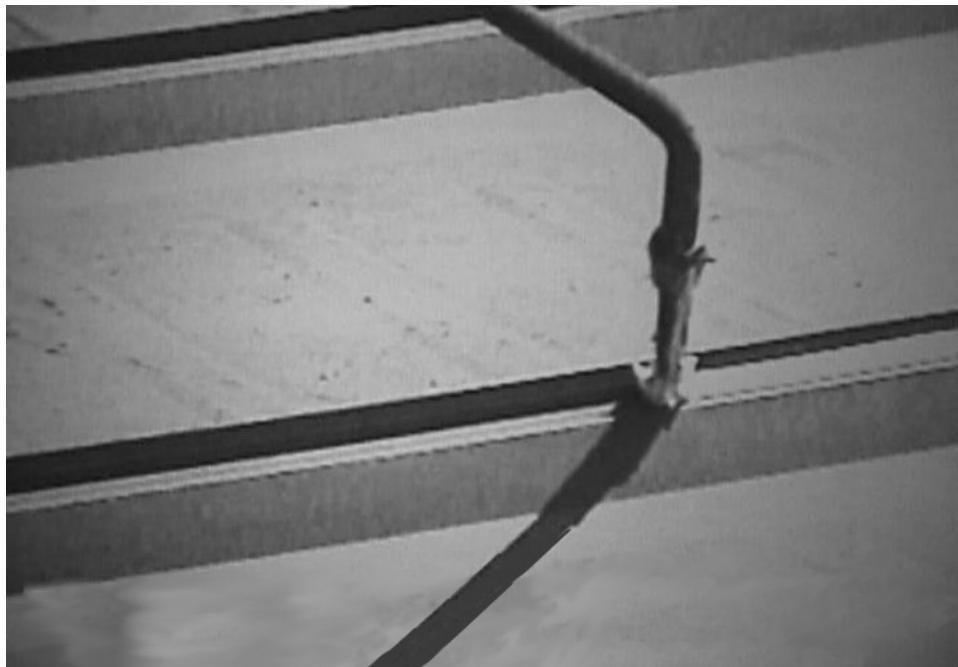
Cut TOPCOAT® Flashing Fabric (Around Fasteners)



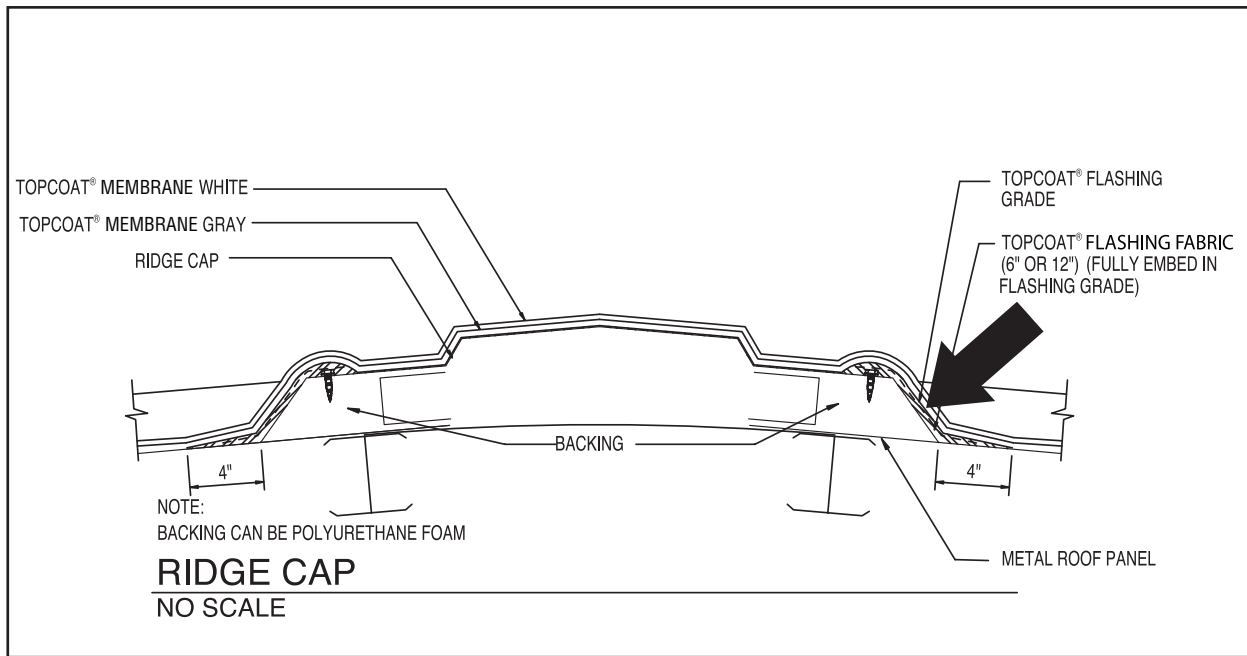
Standing Seam On Ribbed Panel (Trapezoidal Standing Seam)



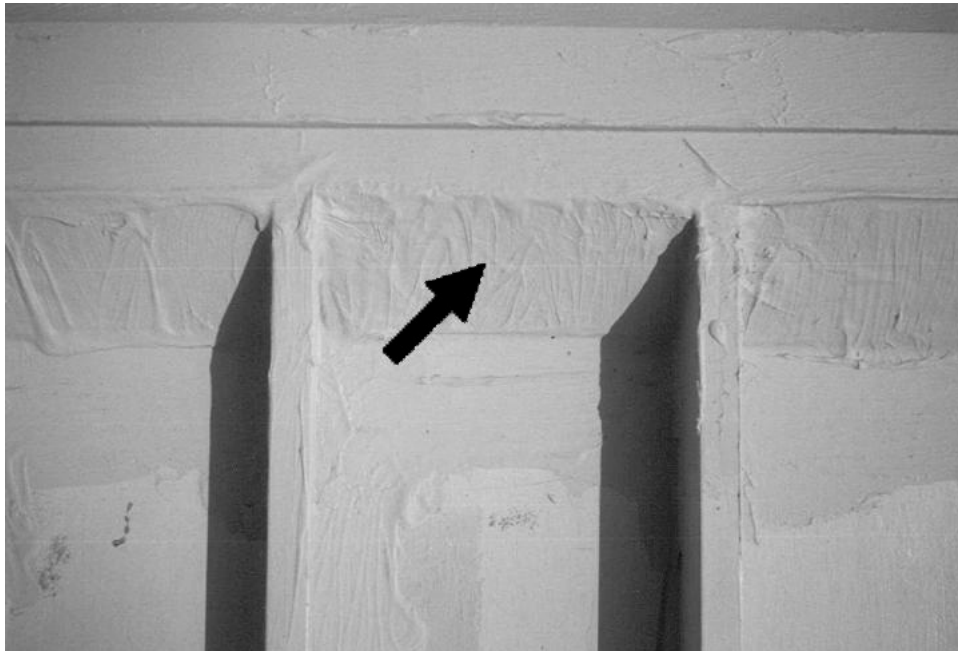
Flashing Grade Extruded Onto Vertical Seams Of A Standing Seam Panel



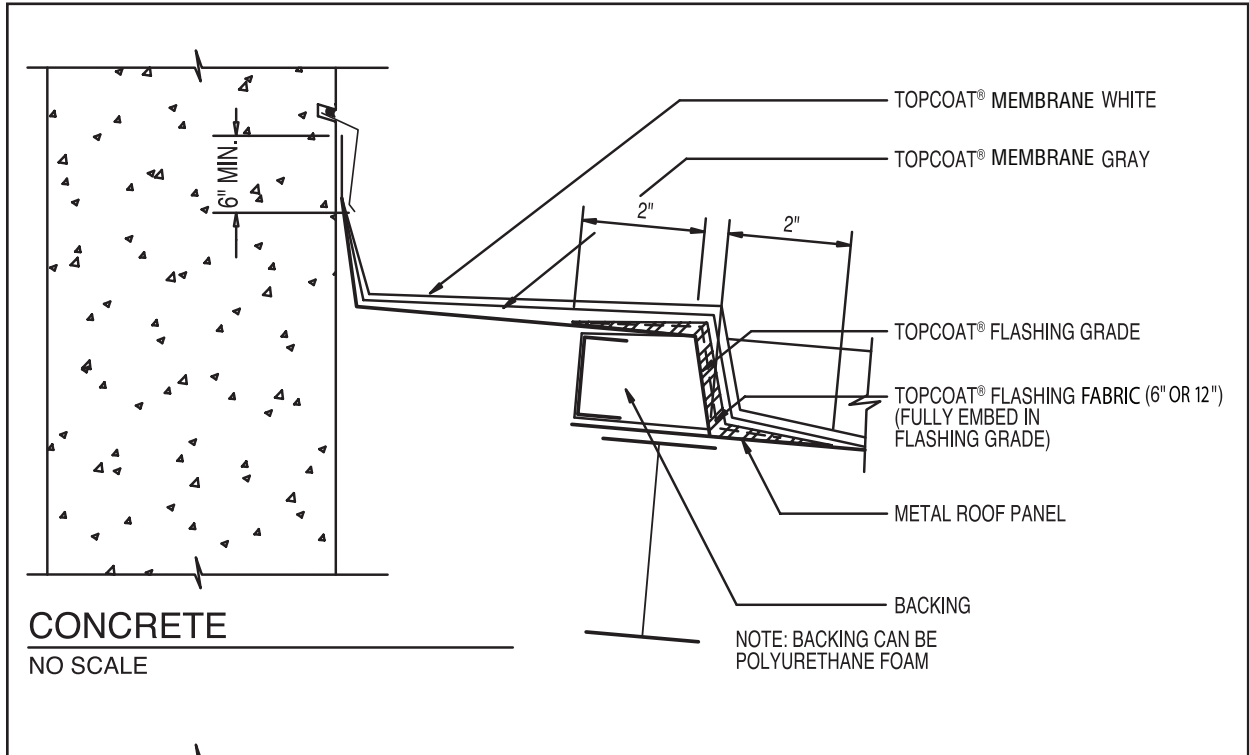
Ridge Cap



Flutes On Ridge Filled And Flashed



Concrete Wall Transition

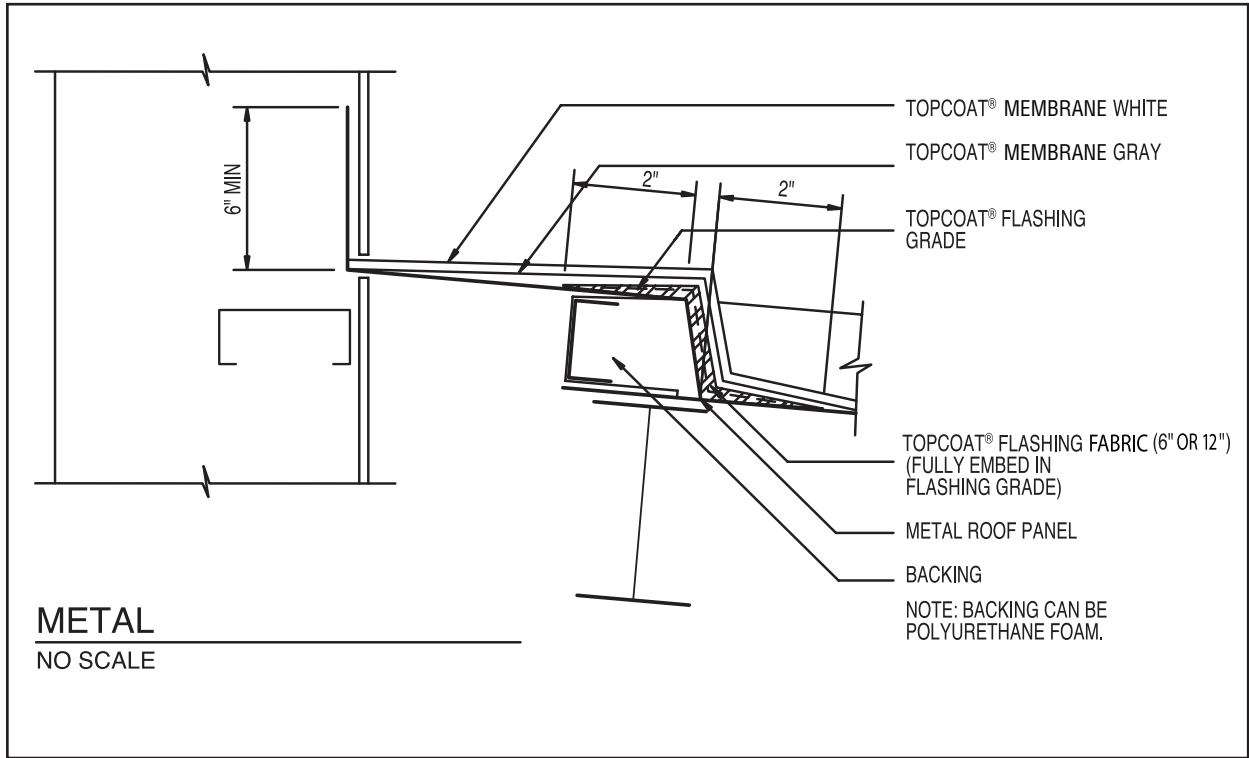


When Applying TOPCOAT® Products To A Metal Panel That Has An Adjacent Concrete Wall – Neatness Is Imperative

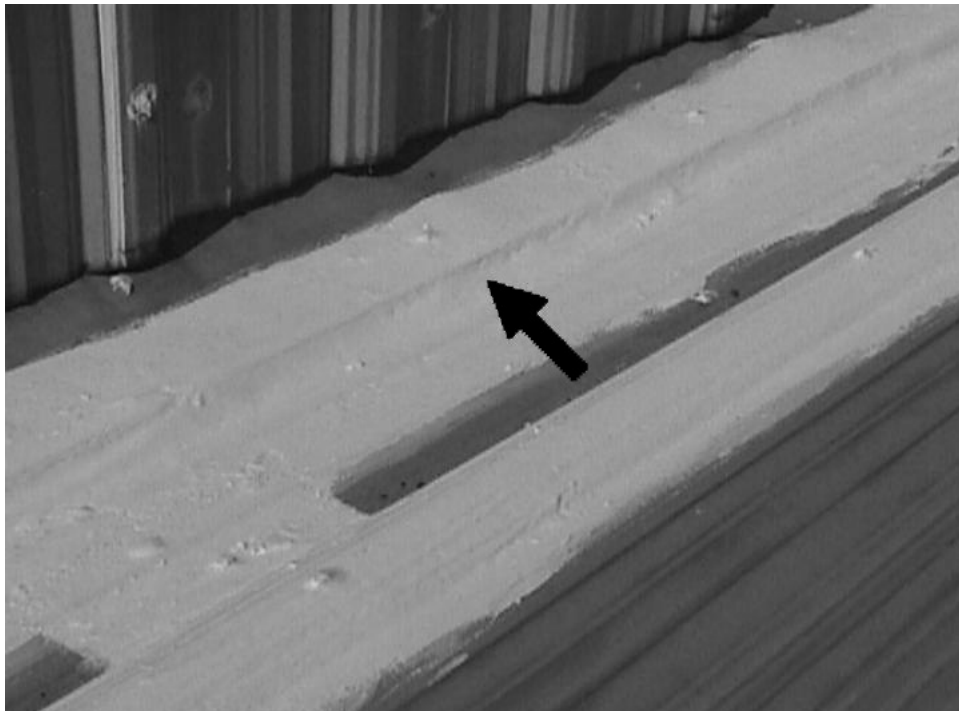


**Metal Roof
Detail Drawings**

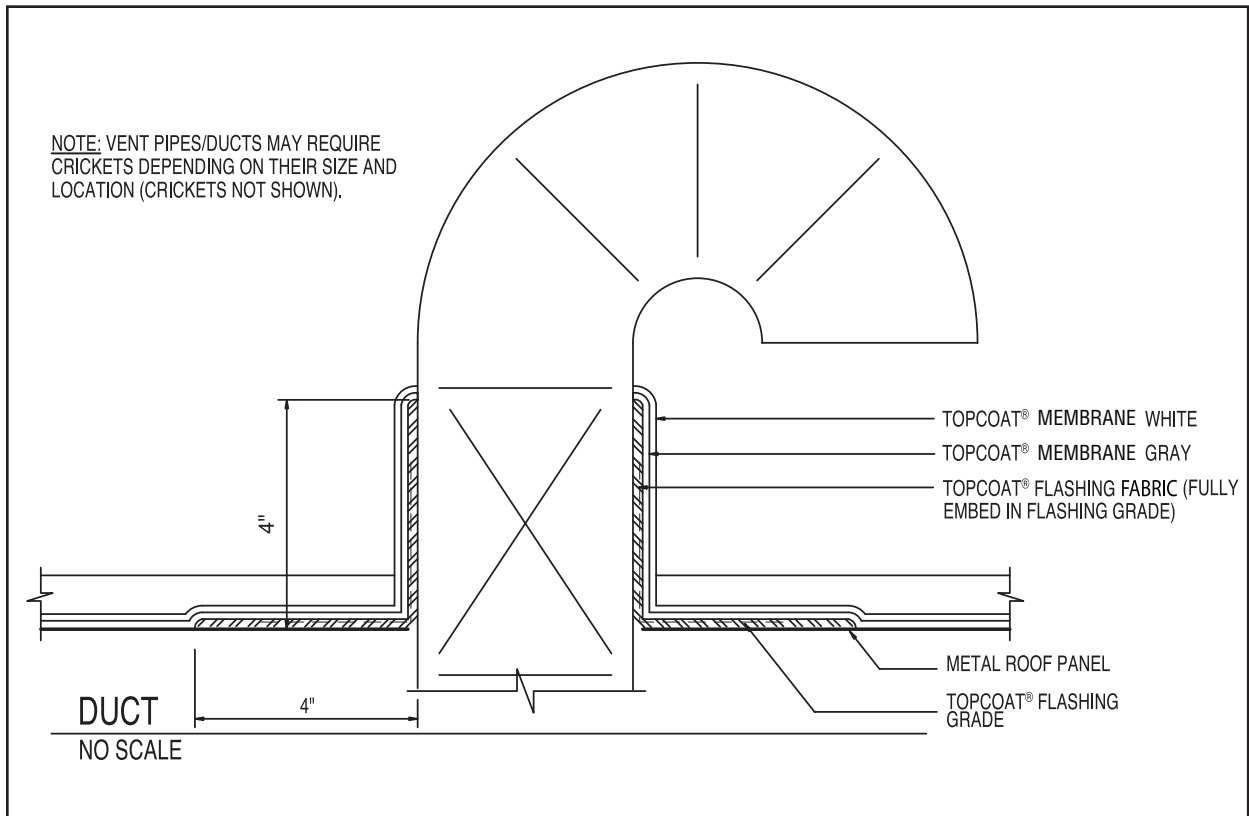
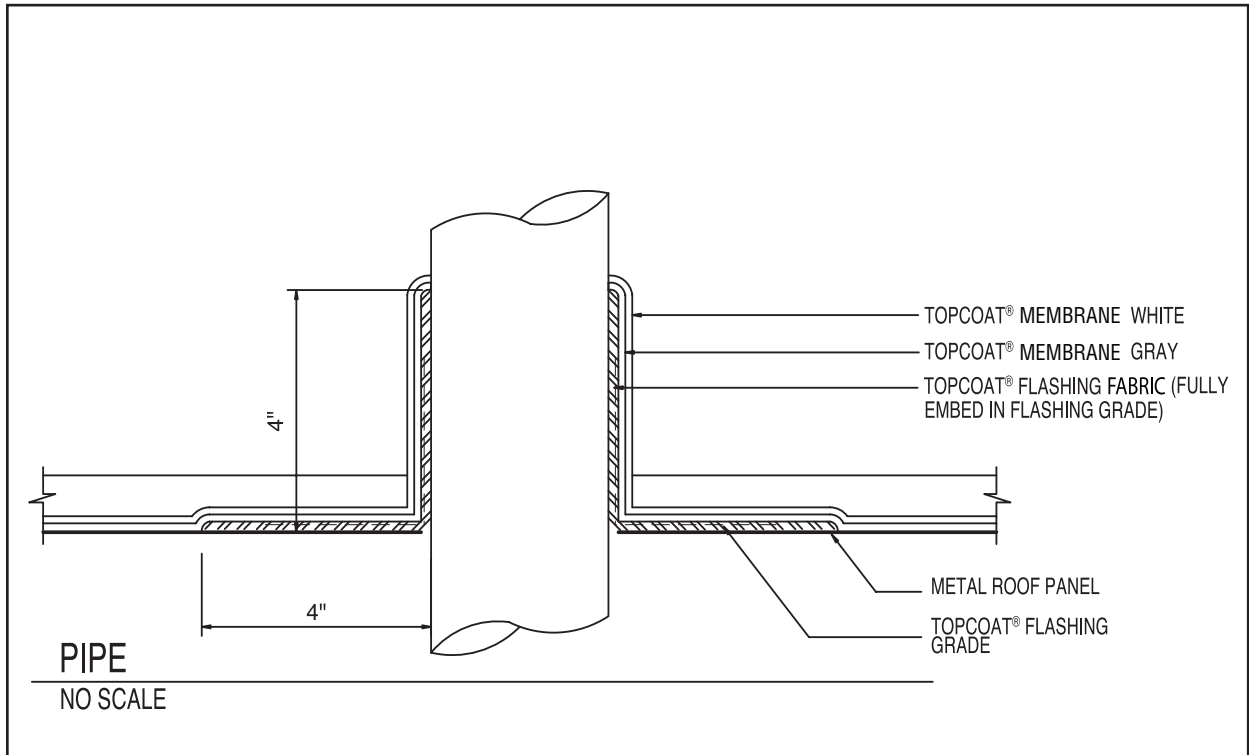
Metal Wall Transition



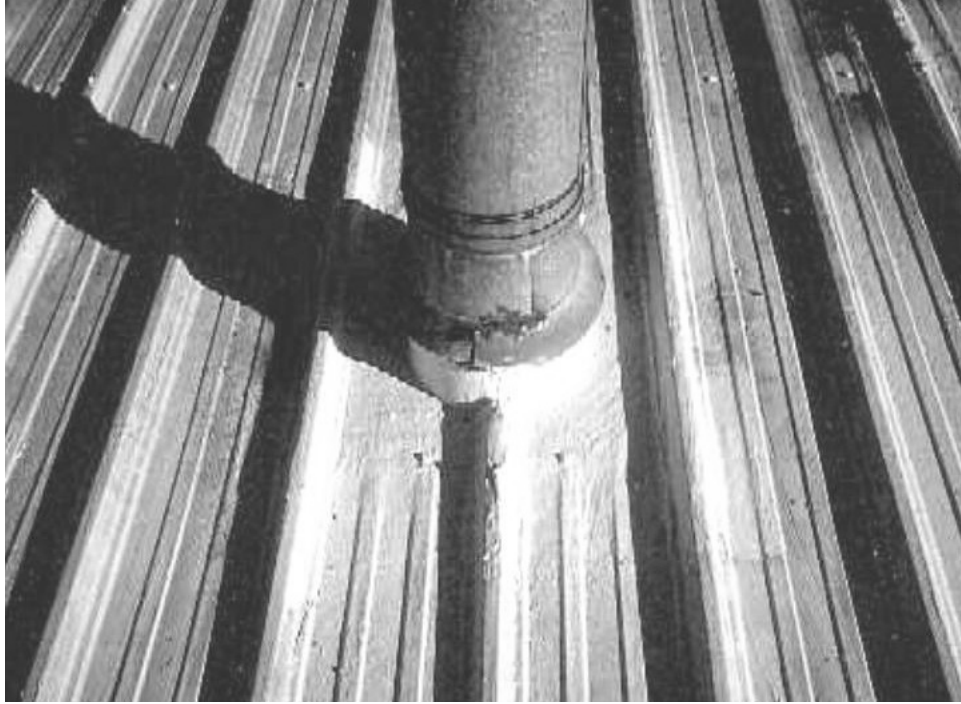
Do Not Flash Base Of Wall To Roof Panel



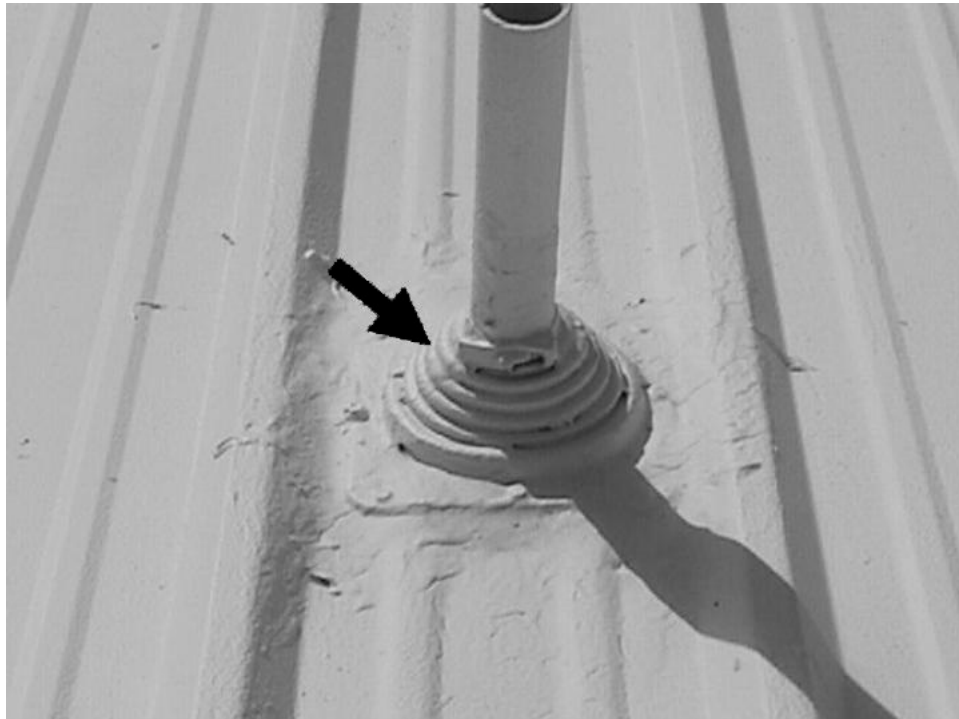
NOTE: Neoprene Pipe Boots May Be Used In Lieu of Flashing



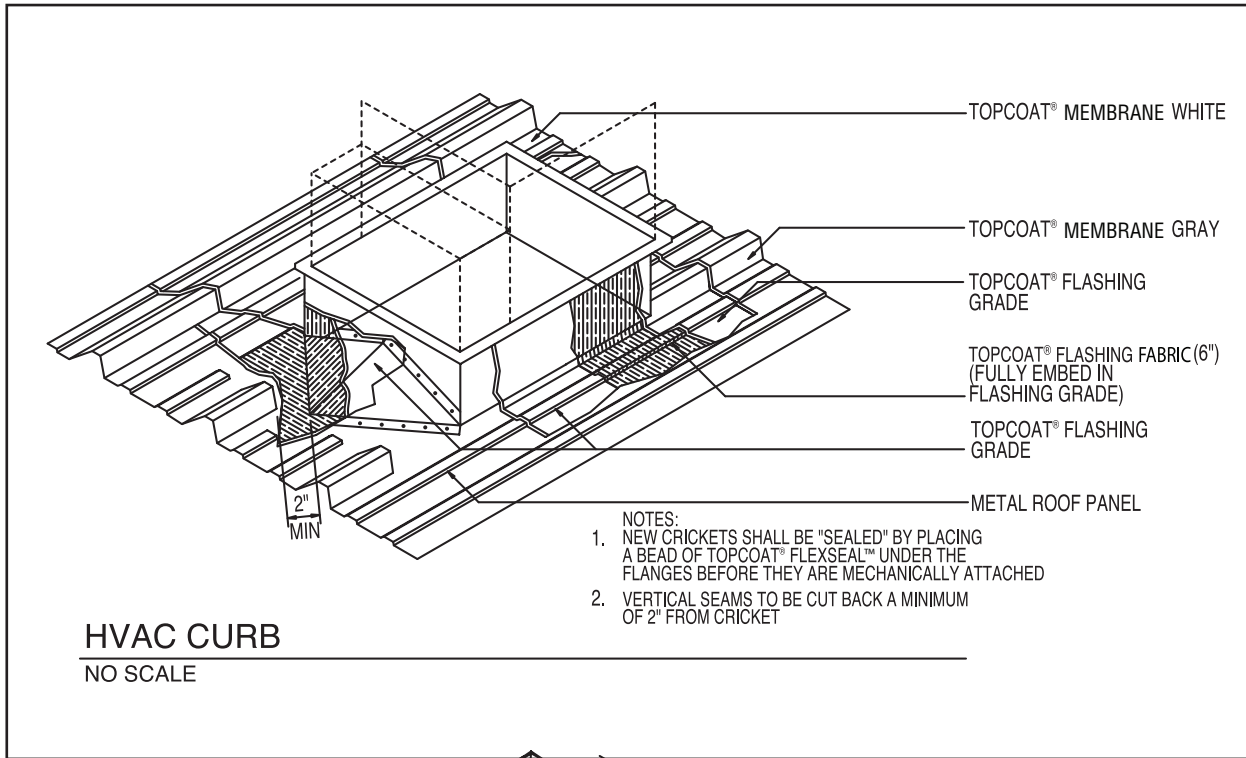
Flash Pipe Using Flashing Grade And TOPCOAT® Flashing Fabric



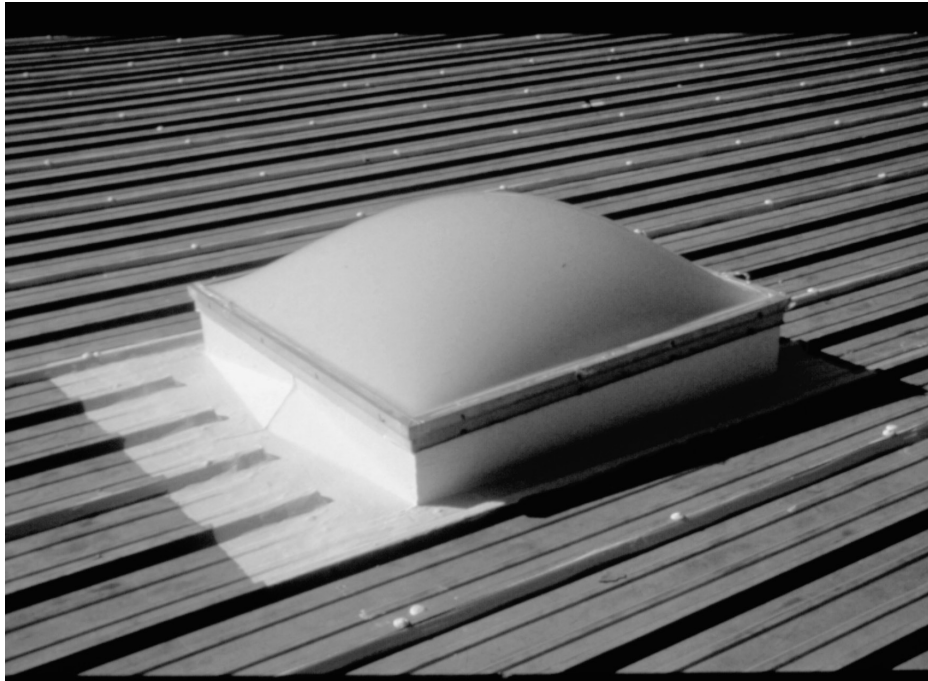
Flash Pipe Using Neoprene Pipe Boot



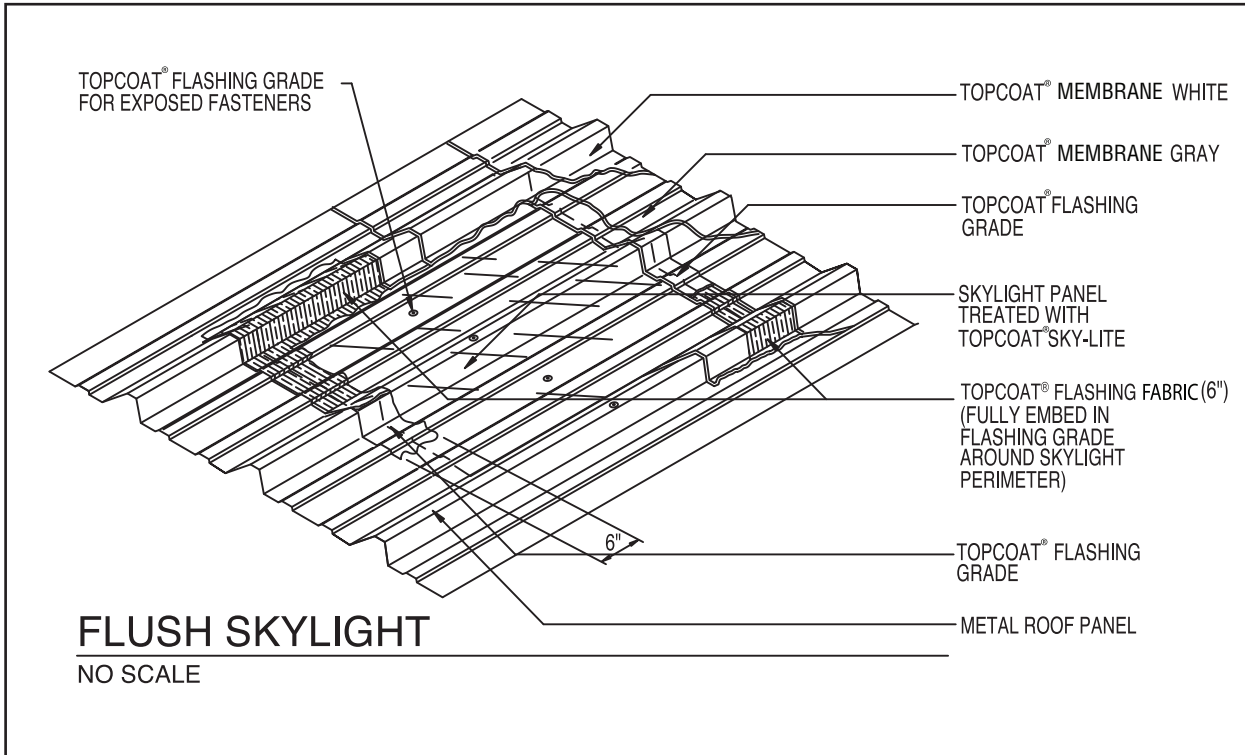
Curb Unit



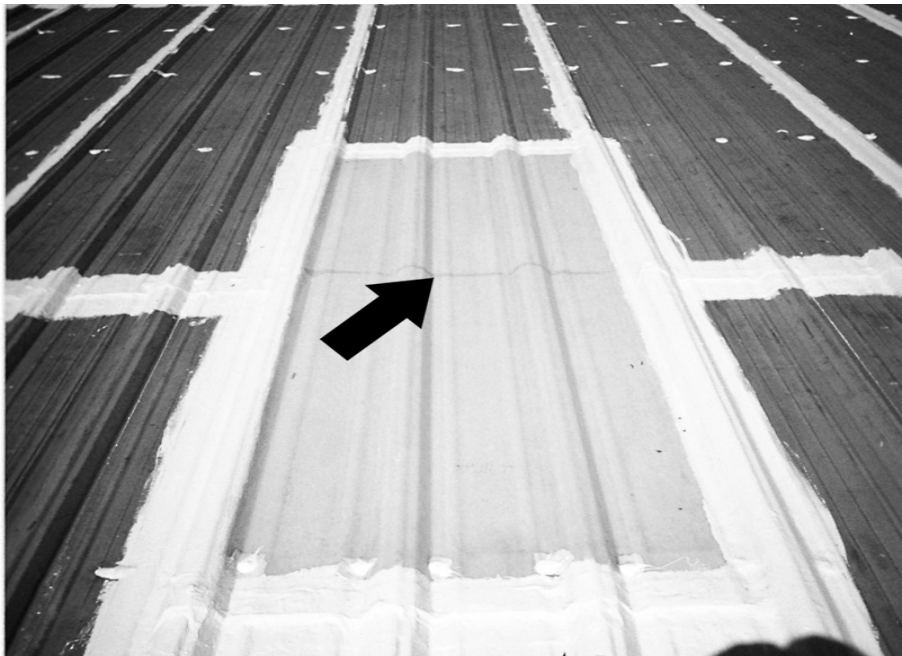
Properly Flashed Curb Unit



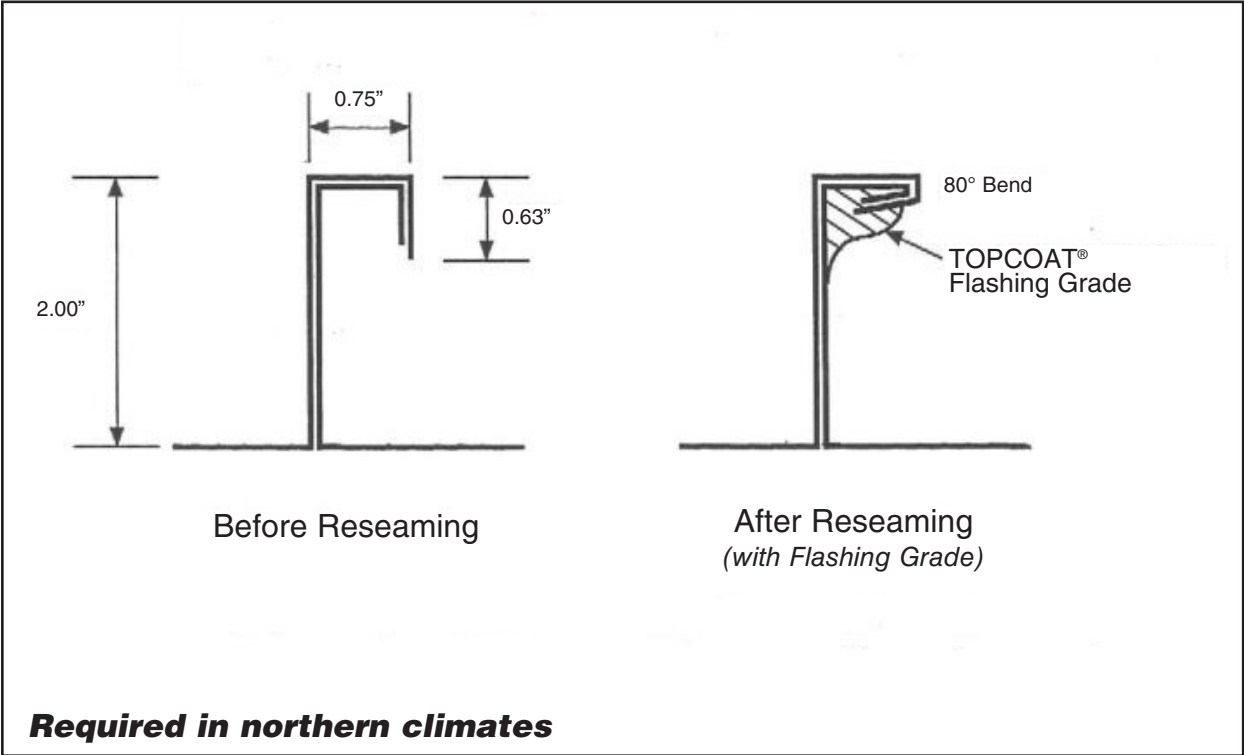
Flush Skylight



Encapsulate Exposed Fasteners With Flashing Grade



Reseaming Of Inverted "J" Panel



Metal Roof
Detail Drawings