TOPCOAT® Liquid-Applied Roofing Systems

FireShield® System Specifications – Torch Smooth APP

(TOPGN160)

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GAF®

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

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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

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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 Council℠ 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 42ºF. Substrate temperatures must be below 120ºF 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 Council℠ 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.