

FireShield® Restoration Specifications - EPDM

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FIRESHIELD® Restoration Specifications – EPDM

PART 1 – GENERAL

1.01 SYSTEM DESCRIPTION

The FireShield® Roofing System can be applied on both fully adhered and mechanically fastened EPDM. This section addresses unique aspects for this type of installation. Unless otherwise specified in this section, GAF Materials Corporation (GAFMC) standard specifications shall be used for installations on EPDM.

1.02 SUBSTRATE CONDITIONS

- A. The FireShield® 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. GAFMC/ TOPCOAT® requires that a moisture scan be done by an independent source and requires it for a 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 shall be used which is approved by GAFMC.

1.03 WARRANTY

Provide GAFMC/ TOPCOAT® Weather Stopper® Integrated Roofing System 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 FireShield® Roof Coating System for any given EPDM roof, please contact GAFMC's Contractor Service Department.

See limited warranty and guarantee for complete coverage and restrictions.

1.04 REQUIREMENTS

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

1.05 REGULATORY REQUIREMENTS

UL Listing: Provide FireShield® Roofing System and component materials which 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 EPDM 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 Materials Corporation

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. A necessary step in the application process to insure good adhesion to EPDM. Do not apply at temperatures below 32°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 ± 0.5lbs
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. TOPESTER Reinforcing Fabric

TOPESTER Fabric is a non-woven, spun bonded 100% polyester web that must be used in conjunction with TOPCOAT® Flashing Grade, SB-900 and FlexSeal at all penetrations, joints or changes in plane that are subjected to high shear or stress.

Average Weight (Ounces per square yard) per ASTM D1117:	1.5
Average Tensile Strength per ASTM D1628:	44 psi
Average Elongation at break per ASTM 1628:	53%
Trapezoidal Tear Strength per ASTM D2263:	18.5 lbs

D. TOPCOAT® Flashing Grade

TOPCOAT® Flashing Grade is a light gray, water-based 100% acrylic synthetic rubber sealant which is applied to seams, fasteners, flashings and penetrations prior to the application of the TOPCOAT® Roofing Membrane. Like the TOPCOAT® Elastomeric Roofing 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. FireShield® SB

FireShield® SB Elastomeric Roofing Membrane is a solvent-based, sprayable liquid thermoplastic rubber that cures to form a seamless rubber membrane. Its patent-pending technology can turn virtually any EPDM roof system into a UL Class A rated roof.* FireShield® SB 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® SB 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 32°F. Substrate temperatures must be below 120°F when applying product.

* Providing the assembly is UL listed.

Application Rate:	0.5 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):	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:	305 psi ± 10%
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

F. FireShield® EPDM

FireShield® EPDM Elastomeric Roofing Membrane is a water-based acrylic sprayable thermoplastic rubber liquid that cures to form a seamless rubber membrane. Its patent-pending technology can turn virtually any EPDM roof system into a UL Class A rated roof.* FireShield® EPDM 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® EPDM 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.

* Providing the assembly is UL listed.

Application Rate:	1 gallon/100 sq. ft. per coat
Application Method:	Airless sprayer or roller
Application Temp: (surface):	42°F - 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
Storage:	Store in well-ventilated area at 50°F to 80°F; protect from freezing
Shelf Life:	1 Year
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 and other preparatory work has been completed and unsatisfactory conditions have been corrected in a manner acceptable to GAFMC.
- 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 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.

EPDM System Cleaner is essential for maximum adhesion, and is required prior to the application of FireShield® SB and FireShield® EPDM.

- 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-MECHANICALLY FASTENED EPDM ROOF SYSTEM

- A. All roof penetration areas, drains, and scuppers must be treated with a 6" TOPESTER Fabric embedded into TOPCOAT® FlexSeal. At flashings where there is changing of plane, the TOPESTER 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 TOPESTER Fabric, as required.
- D. Coating Applications:

1. Coating Application Solvent Base:

Note: Recommended method for application of FireShield® SB and FireShield® EPDM 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 FireShield® 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 holidays. Correct any unsatisfactory conditions prior to proceeding.

b. Spray-apply finish coat (same color as base coat) of FireShield® 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 the 24 hours has elapsed, inspect the final roof surface for flaws, holidays, 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 FireShield® EPDM 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 holidays. Correct any unsatisfactory conditions prior to proceeding.

b. Spray-apply finish coat of FireShield® EPDM at a rate of 1.0 gallon 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 the 24 hours has elapsed, inspect the final roof surface for flaws, holidays, 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-FULLY ADHERED EPDM

- A. All roof penetration areas, splits, drains, and scuppers must be treated with a 6" TOPESTER Fabric embedded into Flashing Grade. At flashings where there is changing of plane, the TOPESTER Fabric should be applied 3" up the vertical and 3" onto the horizontal. Feather the TOPCOAT® Flashing Grade 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 TOPESTER 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 TOPESTER Fabric, as required.

D. Coating Applications:

Note: Recommended method for application of FireShield® SB and FireShield® EPDM 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® 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 coat for defects, flaws or holidays. Correct any unsatisfactory conditions prior to proceeding.
2. Spray-apply finish coat (same color as base coat) of FireShield® 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 has elapsed, inspect the final roof surface for flaws, holidays, 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 GAFMC Contractor Services at 1-800-766-3411.

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