# TOPCOAT® Liquid-Applied Roofing Systems

## TOPCOAT® System Specifications – EPDM

**(TOPGN160)**

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GAF®

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

# TOPCOAT® System Specifications – EPDM

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## 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

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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® 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

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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 Council℠ 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 Council℠ 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.