TopCoat® Restoration Specifications Structural Concrete - CRT

Information Sheet

GAF MATERIALS CORPORATION

Quality You Can Trust Since 1886…
From North America's Largest Roofing Manufacturer™

TOPCOAT® Restoration Specifications Structural Concrete – CRT

PART 1 – GENERAL

1.01 RELATED SECTIONS/DOCUMENTS

GAFMC Detail Drawings, site specific drawings and General Provisions of the contract, including General, Supplementary and Special Conditions found in the Division 7 Specification Sections, apply to the work addressed in this section.

1.02 SYSTEM DESCRIPTION

Extent of TOPCOAT® CRT 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 re-roofed include existing structural concrete roofs as indicated on drawings. Final determination of the fitness of the TOPCOAT® CRT System, or its components, for any given concrete roof may not be made by any representative of GAFMC other than a member of GAFMC's Contractor Services Department.

1.03 SUBMITTALS

Submit copy of TOPCOAT® CRT's 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® CRT Roofing Membrane, TOPCOAT® Flashing Grade, TOPESTER Fabric, etc., by a single manufacturer (GAFMC), which has produced this type of product successfully for not less than twenty years. Provide secondary products only as approved by GAFMC, for use with the specified TOPCOAT® CRT Roofing System.

B. Installer Qualifications: A single Installer or firm ("Installer") shall perform all work addressed in this section, and shall be certified by GAFMC, for installation of the TOPCOAT® CRT Roofing System.

C. Installer Authorization: Installer shall possess written authorization from GAFMC, which certifies it is approved for installation of the TOPCOAT® CRT Roofing System.

1.05 SUBSTRATE CONDITIONS

A. The TOPCOAT® CRT 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® CRT shall not be used for application on lightweight concrete.

B. The TOPCOAT® CRT Roofing System is not to be used on heavy-traffic bearing substrates. If foot traffic is expected, cover the TOPCOAT® CRT System with indoor-outdoor carpet or heavy rubber mat using TOPCOAT® FlexSeal LV as a bonding adhesive. If it is anticipated that the carpet may stay wet for an extended period of time (greater than 48 hours), a rooftop walkway system shall be used in lieu of the carpet.

C. The bonding surface must be free of ponding water, ice, and snow.

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 GAFMC's Contractor Services Department concerning questionable substrates, required additional information and recommended test patch materials.

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".

See warranty and guarantee for complete coverage and restrictions.

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

TOPCOAT® Flashing Grade is a light gray, water-based synthetic rubber sealant which is applied to seams, fasteners, flashings, and penetrations prior to the application of the TOPCOAT® Elastomeric Roofing Membrane. Like the TOPCOAT® Roofing 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
Weight per Gallon:	12.0 ± 0.5 lbs
Viscosity (75°F):	225,000 ± 22,500 cps
Clean-up:	Water before curing

B. 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

C. TOPCOAT® CRT Roofing Membrane

TOPCOAT® CRT is a water-based, spray-applied liquid, 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 D-1653)
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 and FlexSeal LV

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 42°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):	20° - 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):	500,000 ± 100,000 cps
LV - Viscosity (75°F):	150,000 ± 15,000 cps
Clean-up:	Mineral Spirits, Toluene, Xylene

E. Airless Sprayer and Accessories

As recommended by GAFMC's Contractor 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® CRT Roofing System until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer (GAFMC). 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 which does not properly drain and remains for more than 48 hours after precipitation stops). Ponding water areas which cannot be eliminated shall be treated with FlexSeal LV prior to application of other TOPCOAT® products.

E. Thorough Cleaning/Removal of Existing Paints and Coatings: 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 which 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 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 which 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 the GAFMC's Contractor 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/TOPESTER Fabric, SB900/TOPESTER Fabric, FlexSeal/TOPESTER Fabric, SB900 or FlexSeal. Contact GAFMC's Contractor Services Department for particulars.

2. Neoprene Pipe Boots: GAFMC 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 EverTite™ fasteners. Contact GAFMC's Contractor Services Department for particulars.

3. Condensate Lines: GAFMC 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 TOPESTER Fabric and a final layer of Flashing Grade to completely embed the TOPESTER 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® CRT Roofing Membrane.

C. Inform Project Architect and GAFMC Guarantee Services Department when all substrate preparation and flashing work will be complete and the Installer is ready to proceed with application of TOPCOAT® CRT Roofing Membrane. Allow a minimum of two (2) weeks for the interim inspection to be made by GAFMC's Roof Protection Services Department. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or the GAFMC Contractor Services Department.

3.03 COATING APPLICATIONS

Silver-CRT System (10-year Labor and Material Guarantee):

1. Spray-apply base coat (gray) of TOPCOAT® CRT Roofing Membrane at a rate of 1.25 gallons per 100 square feet. 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 (white) of TOPCOAT® CRT Roofing Membrane at a rate of 1.75 gallons per 100 square feet. 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. After at least 24 hours has elapsed, inspect the final roof surface for flaws, holidays, insufficient thickness, etc. Specified Silver-CRT System dry mil thickness is 28 mils in the field of the roof. All unsatisfactory areas must be repaired.

For application questions, please contact GAFMC Contractor Services at 1-800-766-3411.

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