



TOPCOAT®

LIQUID APPLIED ROOFING

SECTION 07560

ELASTOMERIC MEMBRANE ROOFING

TOPCOAT® DESIGN LINE

Note: GAF® does not practice architecture or engineering. This Design Line is provided as a guide specification and is based on criteria provided to GAF®. GAF® has not observed the jobsite conditions, contract specifications, or other documents and shall not be construed in any manner to be the designer of record.

PART 1 GENERAL

Prepare existing low slope metal roof to receive a Topcoat Elastomeric roofing system.

Contractor to provide a 10 year manufacturers material and workmanship Diamond Pledge No Dollar Limit guarantee. Please be advised that a copy of GAF's Contractor Certification letter must be provided with the bid proposal. Failure to provide certification letter with the bid documents will disqualify the bid.

This project will not have a white coating, rather, a color selected by the owner from the Topcoat "Standard" Color group. The "STEEP SLOPE" sides of the roofing system must be installed in four applications at ½ gallon per square, per coat, for the 10 year system. Cost of the manufacturers guarantee and all permits must be included in the bid.

1.01 SUMMARY

- A This section includes elastomeric membrane roofing for installation over metal roofing.
- B Topcoat® detail drawings, site-specific drawings and general provisions of the contract, including general, supplementary and special conditions found in the Division 1 specification section apply to the work addressed in this section.

1.02 DEFINITIONS

- A Refer to ASTM D 1079 and the glossary in the *NRCA Roofing and Waterproofing Manual* for definitions and terms related to roofing work in this section.

1.03 SYSTEM DESCRIPTION

- A The extent of Topcoat® roofing 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 re-roofed include existing metal roofs as indicated on drawings. Final determination of the fitness of the Topcoat® system, or its components, for any given metal roof may not be made by any representative of GAF® / Topcoat® other than a member of Topcoat®'s Contractor Services Department.

1.04 SUBMITTALS

- A Submit copies of Topcoat®'s technical product data sheets, detail drawings, and samples for each type of required roofing product.

1.05 QUALITY ASSURANCE

- A Manufacturer Qualifications: Provide all primary Topcoat® restoration products, including Topcoat® Roofing Membrane, by a single manufacturer (GAF® Topcoat®), which has produced this type of product successfully for not less than twenty (20) years. Provide secondary products only as approved by GAF® Topcoat® for use with the specified Topcoat® roofing system.
- B Installer's Qualifications—***contractor must have five or more years of successful experience in liquid applied commercial roofing installations and must be qualified by GAF to install Topcoat Roofing Systems.***

1. Installer shall be classified as a Topcoat® *Master or Master Select* contractor as defined and certified by GAF®.

Certification letter from GAF MUST be submitted with bid or bid proposal will be disqualified.

1.06 REGULATORY REQUIREMENTS

- A UL Listing: Provide Topcoat® Roofing System and component materials which have been evaluated by Underwriters Laboratories for flame-spread, and are listed in the "Underwriters Laboratory Roofing Materials and Systems Directory" for Class A construction over existing metal or other non-combustible roofing (Flame-spread must pass ASTM E-108 with unlimited slope). Provide roof covering materials bearing UL approval marking on the container. This indicates that the material has been subjected to UL's examination, test procedures and follow-up inspection service.

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1.07 PRE-INSTALLATION CONFERENCE

- A Approximately two (2) weeks prior to scheduled commencement of roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, Topcoat® representative and any other persons directly involved 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:
1. Tour representative areas of roofing substrates to inspect and discuss conditions of substrate, penetrations and other preparatory work to be performed.
 2. Review Topcoat® roofing system requirements (Topcoat® specifications, detail drawings and other contract documents).
 3. Review required submittals, both completed and in progress.
 4. Review and finalize the 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.
 5. Review required inspection(s), testing, and certifying, and material usage accounting procedures.
 6. Review forecasted weather conditions. Establish procedures for coping with unfavorable conditions, including the possibility of temporary roofing work.

1.08 DELIVERY, STORAGE AND PROTECTION

- A Store and handle Topcoat® materials in a manner that will ensure there is no possibility of contamination. Store in a dry, well ventilated, weather tight location at temperatures between 50°F and 80°F until the products are ready to be applied (keep from freezing). Do not stack material pallets more than two (2) 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.

1.09 WEATHER CONDITIONS

- A Proceed with roofing work only when existing and forecasted weather conditions will permit work to be performed in accordance with Topcoat® recommendations and guarantee requirements as follows:
1. Do not begin work if precipitation 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: SB-900 Flashing Grade and FlexSeal may be used in temperatures lower than 42°F., and are excluded from this temperature restriction.)
 2. Upper temperature restriction (both air and substrate) for application of Topcoat® products is 120°F. If substrate temperatures exceed 120°F, Topcoat® products must be applied during cooler periods of the day. If this is not practical, the substrate shall be cooled with water, and then Topcoat® products applied just after the water has flashed-off. No moisture may be present when applying Topcoat® products.
 3. Taking into consideration the UV curing properties of Topcoat® Roofing 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 may increase Topcoat® drying times. If various Topcoat® products are exposed to rain before they are completely dry, product may "wash-off" the roof.

1.10 SUBSTRATE CONDITIONS

- A 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 Topcoat®'s Contractor Services Department concerning questionable substrates, required additional information and recommended test patch materials.

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1.11 GUARANTEE

- A **10 year Diamond Pledge™ Guarantee:** Manufacturers standard form, without money limitation, in which Topcoat® agrees to repair leaks through the Topcoat® products on the roof caused by manufacturing defects, natural deterioration of, or workmanship in applying, the Topcoat® roofing system.
1. Warranty Duration: **Base bid is for Ten (10) years. Please provide an alternate bid for the 20 year Topcoat system and the 20 year Diamond Pledge Guarantee.**
 2. Transfers: Effective immediately, a guarantee transfer fee of \$500 (plus travel expenses) will be charged when transferring a Topcoat® System Guarantee to another Building Owner.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A Topcoat®, (a subsidiary of 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. Additional drying time must be allowed when experiencing high relative humidity, low temperatures and/or very thick product application to prevent improper curing and/or product “wash-off”.)

- A Topcoat® MP-300 Rust Inhibitor:--to be used only if rusted areas exist.
Light blue-pigmented, water-based rust inhibitor to be applied over any areas of rust that remain on the substrate after pressure washing. Do not apply in temperatures under 42°F.
Application Rate: 1 gal/ 100 sq.ft.
Application Method: Brush or airless sprayer
Application Temperature :(air, surface): 42° - 120°F
Drying Time (75°F, 50% RH): Approximately 2 hours
Total Solids (by weight): 50% ± 1%
Specific Gravity / Weight per Gallon: 1.19 / 9.9 lbs
Viscosity (75°F): 5,000 ± 1,000 cps
Clean up: Water before curing
- B Topcoat® Flashing Grade (Regular and Spray Formula):
Light-gray, water-based synthetic rubber sealant for application on seams, fasteners, flashings and penetrations. Curing is enhanced by UV exposure. A sprayable version of Flashing Grade (Flashing Grade – Spray Formula) is available for use. Flashing Grade – Spray Formula has the same physical properties as regular Flashing 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
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
- C Topcoat® Liquid Fabric Flashing Grade:
Light gray, water-based, flexible liquid seam sealer. Liquid Fabric may be used to seal horizontal seams on metal roofs without the use of Topcoat® Flashing Fabric when horizontal seams are properly secured per product application requirements.
Application Rate: 5 gal / 125 lf of seam (6" wide)
Application Method: Brush
Application Temperature (air, surface): 42° - 120°F
Drying Time (75°F, 50% RH):
Approximately 24 - 48 hours

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Total Solids (by weight): 71.7%
Specific Gravity / Weight per Gallon: 1.35 / 11.3 lbs
Elongation: 700%
Viscosity (75°F): 220,000 ± 20,000 cps
Clean up: Water

A Topcoat® Flashing Fabric:

Non-woven, spun-bonded polyester fabric that is used in conjunction with Flashing Grade and FlexSeal at all seams, roof penetrations, joints or changes in plane that have high shear or stress. Use of Topcoat® Flashing Fabric is mandatory on all horizontal seams (except corrugated concrete and those with Liquid Fabric application) and penetrations. Topcoat® Flashing Fabric Roll Sizes: 4" x 300', 6" x 300', 12" x 300'

B Topcoat® Fastener Grade:

Light gray, water-based synthetic elastomeric sealant with unique flow properties designed to encapsulate exposed metal roof fasteners. It offers all of the advantages of Topcoat® Flashing Grade including high UV resistance and water clean up. Do not apply in temperatures under 42°F. Available in 1-qt. caulking tubes for easy dispensing and application.

Application Rate: Approx. 275 fasteners / 1-qt. tube
Application Method: Caulking gun
Application Temperature: (air, surface): 42° - 120°F
Drying Time (75°F, 50% RH): Approximately 24 hours
Total Solids (by weight): 69% ± 1%
Specific Gravity / Weight per Gallon: 1.47 / 12.2 lbs
Viscosity (75°F): 60,000 ± 6,000 cps

C Topcoat® Roofing Membrane:

Water-based, 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 sq.ft. per coat
Application Method: Airless sprayer
Application Temperature (air, surface): 42° - 120°F
Drying Time (75°F, 50% RH): Approximately 24 hours per coat
Total Solids (by weight): 71 ± 3%
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: 0.003 perm inch (ASTM E96-80)
Freeze-Thaw Stability: Passes five (5) cycles
Low Temperature Flexibility: 35 mil
dry film will bend 180° @ -30°F without fracturing
Weatherability:

1,000 hours Atlas Weather-o-meter® exposure per ASTM G-26

Tensile Strength: 150% of original

Elongation: 85% of original

2,000 hours Atlas Weather-o-meter® exposure per ASTM G-26

No cracking, embrittlement, loss of adhesion or discoloration

6,000 hours QUV® exposure, type UVB bulb, per ASTM G-53

No cracking, embrittlement, loss of adhesion or discoloration

D Fasteners:

EverTite™ fasteners are self-drilling stitching screws with a hex-head and a corrosion resistant zinc-coating..

E Airless Sprayer and Accessories:

As recommended by Topcoat®'s Contractor Services Department for application of sprayable Topcoat® products.

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PART 3 EXECUTION

3.01 PREPARATION OF SUBSTRATE

- A Preparation of the Roof substrate is the responsibility of the Installer. Installer shall address and correct all of the conditions listed in this section. 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® / Topcoat®).
1. *Treatment of excessive gaps:* All large or excessive gaps existing between roof panels must be closed or made flush with EverTite™ self-drilling fasteners. Closed-cell 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 appropriate method to create a cant strip which facilitates both Topcoat® 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 a void larger than a 1/4 inch. 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 EverTite™ 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 mechanically 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 on the roof surface for more than 48 hours after precipitation stops. Ponding water areas which 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 over the entire broken rib area to be capped prior to attaching the cap with EverTite™ fasteners. Then, Topcoat® Flashing Grade shall be used to seal all the newly created rib cap seams and fasteners. Should roof panels be severely damaged, installer shall remove and replace damaged areas prior to application of Topcoat® products.
 5. *Re-tightening and Replacement of Fasteners:* All fasteners must be re-tightened, secured or replaced, as necessary. All stripped fasteners must be replaced with larger diameter fasteners, and the area re-secured 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 require modification 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. A minimum working pressure of 3,000 psi shall be used to remove all delaminating paint and coatings dirt, dust, and waste products (oil, oil-based roof cements, solvents, grease, animal fats, etc.). A 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 must be used to kill and remove these organisms during the roof cleaning.
 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, electric 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 asphalt shall be coated with MB.

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8. *Treatment of Rust Areas:* All rust areas must be treated with Topcoat® MP-300 to prevent further deterioration of the metal roof panels. Prior to 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 MP-300. A second coat of MP-300 is required for heavily rusted roof panel areas. Since MP-300 Rust Inhibitor is designed to adhere to rust, only rusted areas shall be addressed with the product. Installer must exercise special care when applying MP-300 in high temperature conditions (substrates approaching 120°F). Substrate temperatures must be kept below 120°F when applying MP-300. Areas where rust is very heavy on roof panels shall be treated with two (2) applications of Topcoat® MP-300 Rust Inhibitor. The second application of 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 Topcoat® specifications. Roof panels which are corroded to the point where holes are present must be replaced.
9. *Preparation of Test Patches:* Installer shall prepare no less than three (3) test patches for all questionable roof substrates (Kynar®-500 or other fluoropolymers, coatings which contain silicone, etc.) 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 the Topcoat® Contractor Services Department concerning all results.
10. *Priming of Pre-Finished Metal Panels:* Where roof panel surfaces are known or suspected to contain Kynar®-500, other fluoropolymers or silicone, test patches shall be prepared with and without the use of Topcoat® XR-2000. Based on test patch adhesion results, Installer shall apply XR-2000 on pre-finished metal panels per specifications. Please note that since XR-2000 has rust inhibiting properties, Topcoat® MP-300 is not required where XR-2000 has been used.
11. *Pitch Pans:* For most situations, pitch pans shall be capped with sheet metal so they can be sealed with Topcoat® products. Contact Topcoat®'s Contractor Services Department for more information.
12. *Neoprene Pipe Boots:* Topcoat® recommends the 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 EverTite™ fasteners. Contact Topcoat®'s Contractor Services Department for more information.
13. *Open Ridge Vents:* Open ridge vents (as shown in detail drawings) may begin to corrode on the inside, and over time, may leak. Topcoat® highly recommends either replacement or the installation of 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). 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. When this condition occurs, it may not allow for proper curing of the Flashing Grade material which may cause blisters.
14. *Condensate Lines:* Topcoat® recommends the 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 FLASHING APPLICATION AND INSPECTION INFORMATION

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 Topcoat® Detail Drawings. Flashing Grade must be feathered at the edges (see current Topcoat® Detail Drawings) to ensure that water flows over the various flashing details.

- A **Fasteners:** All fasteners must be fully encapsulated in Topcoat® Fastener Grade, Flashing Grade or SB-900. 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), Topcoat® recommends the use of SB-900 in colder climates, and Fastener Grade in warmer / hot climates.
- B **Gutter Straps:** All gutter straps that are fastened above roof panels must be fully encapsulated with Topcoat® Flashing Grade, including the fasteners.

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C Vertical Seams:

1. *Ribbed:* All ribbed panel vertical seams must be sealed with Topcoat® Flashing Grade. Feather the Flashing Grade until seams are no longer visible while brushing in the direction parallel to the seam.
2. *Standing Seam:* All standing vertical seams must be sealed with a ½” bead of Topcoat® Flashing Grade. Feather Flashing Grade until seams are 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 Topcoat®'s Contractor Services Department for details on specific standing seam panels.
3. *Standing "T" Seam:* Both vertical seams of the standing "T" must be flashed with a ½” bead of Topcoat® Flashing Grade brushed into the seams.
4. *Inverted "J" Seam:* In snowy climates and/or when roof leaks are suspected from this type of vertical seam, Topcoat® requires re-crimping the short leg of the seam all the way under the horizontal portion of the inverted "J" seam. Brush or trowel apply Topcoat® Flashing Grade over the newly created single lock vertical seam. Portable seamers may be used to perform the re-crimping.
5. *Corrugated:* All corrugated panel vertical seams must be sealed with Topcoat® Flashing Grade. Feather the Flashing Grade until the seams are no longer visible while brushing in the direction parallel to the seam.
6. *Batten:* Both vertical seams of the batten must be flashed with a ½” bead of Topcoat® Flashing Grade. Feather Flashing Grade until the seams are no longer visible while brushing in the direction parallel to the seam.

D Horizontal Seams: All horizontal seams must be reinforced with a layer of Topcoat® Flashing Grade, one (1) layer of Topcoat® Flashing Fabric and then a final layer of Topcoat® Flashing Grade to completely encapsulate the Fabric. Flashing Grade 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. Topcoat® Flashing Fabric is not required for horizontal seams on corrugated roofing panels. Horizontal seams must be secured with EverTite™ fasteners on the high side of every other corrugation spaced no more than 6" on center. When using Liquid Fabric, the horizontal seam must be made flush by installing two Evertite™ fasteners per flute.

E Cinch Straps at Panel Endlaps: Re-tighten cinch straps, as necessary. Surround each strap and fastener head with a bead of SB-900 or FlexSeal. Fully inject SB-900 or 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 SB-900 or FlexSeal. Feather the SB-900 or FlexSeal to prevent ponding water at the high side of the lap. The use of Topcoat® Flashing Fabric is not required for cinch straps at panel endlaps.

F 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. All voids and open areas in the ridge cap must be filled with polyurethane foam prior to application of Topcoat® Flashing Fabric and Flashing Grade. (NOTE: In the case of metal "Z" closures which are located within 2" of the ridge cap edge, remove all exposed sealant and apply a liberal bead of Topcoat® Flashing Grade to all sides of the "Z" closure where they intersect with both the roof panel and ridge cap.)

G Rakes: All fixed rake details for the roof must be secured and sealed with a 6" minimum width of Topcoat® Flashing Grade and Topcoat® Flashing Fabric. If fixed rake metal is fastened to the top of roof panel ribs and extends back onto the roof, trim off any 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. For standing seam roof panels, contact Topcoat®'s Contractor Services Department for information.

H Parapet Walls: All parapet wall details within the roof system must be secured and sealed with a 6" minimum width of Topcoat® Flashing Grade and Topcoat® Flashing Fabric. If parapet wall flashing metal is fastened to the top of roof panel ribs and extends back onto the roof, trim off any 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. For standing seam roof panels, contact Topcoat®'s Contractor Services Department for information.

I Curb Flashings: All curb flashings, including cricket details, must be flashed with at least a 6" width of Topcoat® Flashing Fabric and Flashing Grade. Encapsulate all fasteners using Topcoat® Flashing Grade. Do not bridge fasteners. Flashing Fabric must be cut around all fasteners so the fabric lies flat.

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- J Penetrations: Topcoat® Flashing Grade shall be applied around the base of all penetrations, extending at least 4" onto the vertical and 4" onto the base. Embed a 6" width of Topcoat® Flashing Fabric using additional Flashing Grade, 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 and Topcoat® Flashing Fabric as described above.
- K 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 and Topcoat® Flashing Fabric. All exposed skylight fasteners shall be encapsulated with Topcoat® Flashing Grade. Do not bridge fasteners. Flashing Fabric must be cut around all fasteners so Fabric lies flat. After flashing work has been completed and Flashing Grade has cured, treat deteriorated fiberglass skylight panels with Topcoat® SKY-LITE material.
- L Gutters: Trowel or brush apply FlexSeal to the interior or exterior gutters incorporating 6" Topcoat® Flashing Fabric at all gutter seams. Gutter must be completely clean and dry before applying FlexSeal.
- M Ponding Water Areas: Contact the Topcoat® Contractor Services Department for information.
- N Inspect Preliminary Work / Flashing Details for problem areas (e.g., gaps, cracks, fishmouths, air pockets, etc.) to ensure that work is complete and satisfactory.
- O Inform Project Architect and Topcoat® Contractor Services Department when all preliminary work and flashing details will be complete and the Installer is ready to proceed with application of Topcoat® Roofing Membrane. Allow a minimum of two (2) weeks for the interim inspection to be made by the Topcoat® Contractor Services Department.
 - 1. Any final roofing installation prior to this interim inspection is subject to rejection by the Project Architect and/or the Topcoat® Contractor Services Department. Please be advised that Technical On-Site Support for instructing Certified Contractors in the proper application of the Topcoat® Roofing System is available. The first day of instruction is at no-charge to the Certified Contractor. Any additional days or return trips for instruction will be at a cost of \$475.00 per day, plus all incurred travel expenses. The two (2) required inspections (interim and final) for the Topcoat® Bronze Solo, Bronze, Silver, Gold, Platinum, and Titanium Systems are free of charge. Additional inspections will be billed at a rate of \$ 475.00 per day plus all incurred travel costs.

3.03 MEMBRANE APPLICATION

A Silver System:

- 1. Spray-apply base coat (color to be selected by owner from the "Standard" Topcoat color line) of Topcoat® Roofing Membrane at a rate of 1.0 gallon per 100 square feet. 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 areas of insufficient coverage. Correct any unsatisfactory conditions.
- 2. Spray-apply finish coat (color to be selected by owner from the "Standard" Topcoat color line) of Topcoat® Roofing Membrane at a rate of 1.0 gallon per 100 square feet. Finish coat shall be applied parallel to the ribs of the roof panels. It shall not be applied unless the base 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.
- 3. After a minimum of 24 hours has elapsed, inspect the final roof surface for flaws, areas of insufficient coverage, insufficient thickness, etc. The specified Silver System membrane thickness is 18 mils in the field and 78 mils on the seams and flashing details. At completion of all work, seams should not be visible on the roof. All unsatisfactory areas must be repaired.

3.04 OTHER ITEMS

- A Installer shall take photographs of representative roof areas, including detail work, before work commences, after the surface has been properly prepared, after all flashing and detail work has been performed, and after the spray application of the Topcoat® membrane.

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- B Installer shall provide the following support for on-site inspections by a representative from Topcoat®'s Contractor Services Department (list is not comprehensive):
1. Representative from the installer's company who has authority to make binding decisions
 2. Required means to access all areas of the treated roof.
 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 the Topcoat® Contractor Services Department
- C Special care must be taken to avoid shading when spraying dark Topcoat® Roofing Membrane colors. When applying a dark Topcoat® Membrane color, Installer must always spray wet material onto wet material to ensure that spray lines do not appear. Topcoat® strongly recommends the installation of any dark-colored finish coat by spraying two lighter coats (instead of one heavy coat) using a smaller tip size. 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. Also, 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 application of base and finish coats, the use of Topcoat® white for the base coat (versus gray) is recommended. The base coat must be thoroughly cleaned before applying the finish coat.
- F It is strongly recommended that walkways designed for metal roofing systems be installed in all high traffic areas. Contact the Topcoat® Contractor Services Department for recommendations.

3.05 REPAIRS

In the event that the Topcoat® membrane is damaged or punctured, repairs are to be performed using Topcoat® Flashing Grade and Topcoat® Flashing Fabric (where necessary) as follows:

- A Damaged areas are to be cut, cleaned and dried.
- B Apply Flashing Grade, and feather out onto the existing Topcoat® membrane.
- C If a new penetration area has been cut, embed Topcoat® Flashing Fabric into the Flashing Grade according to standard Topcoat® specifications.
- D Once the Flashing Grade has cured, Topcoat® white or appropriate Topcoat® color may be applied for aesthetic uniformity.
- E For required repairs during cold weather conditions (i.e., below 42 °F), Topcoat® SB-900 Flashing Grade or FlexSeal must be used in lieu of water-based Flashing Grade

End of Section