KARNAK CORPORATION
THE SEAL OF QUALITY

APPLICATION GUIDELINES

WHITE REFLECTIVE COATING SYSTEM

Substrates:
Metal

Mastic Type:
Karna-Flex WB

Reflective Prime Coat:
180 Karna-Sil Epoxy Primer

Finish Coat:
670HS Karna-Sil Ultra

The following KARNAK Roof Restoration System is intended to be applied over sound metal roofing systems.

BENEFITS & ADVANTAGES:

- Silicone coating will not degrade, chalk or crack under harsh UV exposure.
- Tough, flexible elastic film that seals and protects.
- 670HS Karna-Sil Ultra is an Energy Star® listed reflective coating that may reduce energy consumption by lowering air conditioning requirements.
- Can provide an energy savings "payback" based on building design, energy consumption needs and insulation levels.
- Application causes no disruption of activities inside building.
- Sustainable - Avoids roof replacement and adds life to the existing roof system.
- Encapsulates surface rust on properly prepared metal surfaces and inhibits the formation of new rust.
- NSF Rated – Designed for potable rainwater catchment systems.
- Coating produces a smooth surface that offers excellent resistance to mold, mildew and staining.

PART 1 – MATERIALS

1.1 **799 Wash-N-Prep:** Concentrated liquid TSP substitute specifically designed to clean roof surfaces prior to applying coatings.

1.2 **Karna-Flex WB:** An acrylic elastomeric mastic for sealing and repairing seams, flashings, curbs, fasteners, penetrations and general repairs to all types of metal roofs prior to applying coatings.

1.3 **5540 Resat-Mat:** Spunlaced polyester fabric for reinforcing mastics and coatings over irregular, rough surfaces as well as smooth surfaces.

1.4 **180 Karna-Sil Epoxy Primer:** Two-part, water-based epoxy primer used to prime and prepare metal roof surfaces prior to applying 670 Karna-Sil Ultra silicone coating.

1.5 **670 Karna-Sil Ultra:** Single-component, high solids, moisture curing silicone coating that produces a durable elastic coating with exceptional weathering and water resistant characteristics.

PART 2 – APPLICATION:

2.1 **General:**

A. Read all applicable product data sheets and SDS for appropriate application and preparation guidelines.

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B. All roof surfaces to be coated should be sound, clean, dry and free of dirt, heavy flaking or pitting rust, grease, oil, foreign contaminants and debris.
C. All fasteners should be re-tightened or replaced as necessary. Stripped fasteners must be replaced with larger fasteners. All fasteners should include a neoprene washer.
D. Rusted through panels or sections must be replaced.
E. Rusted areas should be wired brushed down to clean, stable metal.
F. Ensure all adjacent roofs sections that come in contact with metal roof are properly sealed with a three course of Karna-Flex WB and 5540 Resat-Mat or other appropriate materials.
G. Damaged skylights, if applicable, should be removed and replaced.
H. Remove all non-functioning vents, penetrations, antenna and non-working equipment.
I. Adhesion of the coatings should be tested over all applicable roof surfaces prior to the system application.

2.2 **Preparation:**

A. Cut away low handing branches and vegetation that extend onto the roof.
B. Remove all loose coating and repairs. Silicone caulking must be removed prior to coating system application.
C. Power-wash all surfaces to be coated with 799 Wash-N-Prep Roof Cleaner and water maintaining a minimum of 3,000 psi. Take all necessary precautions to avoid damage to the roof system when power washing.
    a. Dilute 799 Wash-N-Prep with water at a 16:1 ratio for normal cleaning.
    b. Apply diluted cleaning agent directly to the roof surface with a Hudson-type sprayer or using a stiff nylon brush by dipping the brush into a bucket of diluted cleaner. Cleaner may also be added in full strength to the detergent reservoir for injection dilution at a 16:1 ratio.
    c. Rinse all surfaces thoroughly with a heavy duty power washer using clean water to completely remove all residues. Do not allow dirty solution to pool on the roof and dry.
    d. Allow the roof to completely dry before applying KARNAK coating products.

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2.3 **Seam Sealing – Horizontal Seams and Penetrations:**

A. All horizontal seams, penetrations and cracks should be sealed using 6” wide 5540 Resat-Mat and Karna-Flex WB.
   a. Apply Karna-Flex WB over the seam in a 1/16” thickness by 8” width using a 3” or 4” ‘chip type’ brush.
   b. While still wet, immediately embed 6” wide Resat-Mat into the wet Karna-Flex WB. Brush Resat-Mat to smooth out and removed any wrinkles or fishmouths.
   c. Apply a second and final application of Karna-Flex WB over the embedded Resat-Mat. Apply at an average thickness of 1/16” by 8” wide to completely cover the Resat-Mat, feathering out the Karna-Flex WB on to the roof surface. No fabric should be visible.
   d. Total coverage of Karna-Flex WB in this application is approximately 20 lineal feet per gallon.
   e. Allow all repairs to cure 24-48 hours before applying subsequent coating.

2.4 **Seam Sealing - Vertical Seams:**

A. For vertical seams less than 1/16” wide brush apply a 2” wide ‘bead’ by 1/16” thick application of Karna-Flex WB along the seam, back brushing the coating into the seam.
B. Total coverage of Karna-Flex WB in this application is approximately 160 lineal feet per gallon
C. For vertical seams open greater than 1/16” wide treat in the same manner as a Horizontal Seam and three-course with Karna-Flex WB and 5540 Resat-Mat as described above.
D. Allow all repairs to cure 24-48 hours before applying subsequent coating.

2.5 **Fastener Sealing:**

A. All fasteners must receive a dollop (swirl coat) of Karna-Flex using a 1” or 2” chip brush to completely encapsulate the fastener.
B. Applicator should “swirl” apply the Karna-Flex around the faster to ensure there is no trapped air between the Karna-Flex and the fastener.
C. 1 gallon of Karna-Flex covers approximately 250 fasteners in this application.
D. Allow all repairs to cure 24-48 hours before applying subsequent coating.

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2.6 **Reflective Prime Coat Application:**

A. 180 Karna-Sil Epoxy Primer 'Part A' and 180 Karna-Sil Epoxy Primer 'Part B' should be both mixed individually first, then combined and mix thoroughly.
B. Take combined two component primer and apply at an average rate of 200-300 sq.ft. per gallon to the entire metal roof surface. Note that applying too much primer will reduce the adhesion strength.
C. Do not use material that has been mixed for 4 hours or more.
D. Apply with a nylon brush or 1/4" to 3/8" nap roller or airless spray equipment.
E. Allow to thoroughly set, which is normally 2-3 hours (dependent upon temperature and humidity) before applying finish coat. Best adhesion is achieved if coated over within 1-3 days after application. Must be coated over within 7 days after application.

2.7 **Finish Coat Application:**

A. Application of 670HS Karna-Sil Ultra should take place when temperatures are 50°F-100°F. Do not apply if rain is expected within 24 hours after application.
B. Best adhesion is achieved if base coat is coated over within 1-3 days after application. 670HS Karna-Sil Ultra should be applied within 7 days after application of the base coat.
C. Thoroughly mix coating prior to application with a 3" diameter mixer (5-gallon pail) or 6" diameter mixer (55-gallon drum). Once product is mixed, the entire container should be used.
D. Apply 670HS Karna-Sil Ultra with a soft roof brush, medium nap roller or heavy-duty airless spray equipment.
E. Apply in a single coat application at the rate 1.5 gallons per 100 sq.ft. for 23 dry mils or 3 gallons per 100 sq.ft. for 46 dry mils.
F. Do not apply if rain is expected within 24 hours after application.

2.8 **Material List & Coverage Rates:**

Note: The below listed coverage rates are for estimating purposes only. Actual amounts may vary depending upon the irregularity and porosity of the roof surface, measurements taken and applicator installation.

A.	**799 Wash-N-Prep:**	1 quart per 1,600 sq.ft.
B.	**Karna-Flex WB:**	25 lineal feet per gallon
C.	**5540 Resat-Mat:**	6" x 300' per roll
D.	**180 Karna-Sil Epoxy Primer:**	1 gal. per 200-300 sq.ft.

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E.	**670HS Karna-Sil Ultra:**	1.5 gal. per 100 sq.ft. – 23 dry mils Or 3 gal. per 100 sq.ft. – 46 dry mils

This specification is based upon information and/or pictures provided to us by the applicator/contractor. KARNAK has not inspected the roof or independently verified any of the information provided. KARNAK is relying solely on the applicator/contractor to determine that the roof structure and condition of the roof makes the roof an appropriate candidate for coating, and that a moisture test or other procedure has been performed to verify that the substrate is not wet. The recommended use of KARNAK products listed are predicated on tests believed to be reliable. However, since such application and use is beyond our control, we do not guarantee the results to be obtained. The above specification is offered as a service to the specifier. KARNAK Corporation does not practice architecture nor engineering and recommends that you consult a registered architect, engineer and/or roofing consultant. Accordingly KARNAK disclaims all liability in connection with the use of this specification.

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