

## APPLICATION GUIDELINES

### WHITE REFLECTIVE COATING SYSTEM

**Substrates:**

Smooth BUR  
Smooth Mod. Bit.  
Granular Mod. Bit.

**Mastic Type:**

Karna-Flex

**Base Coat:**

220 Emulsion Roof  
Coating

**Reflective Prime Coat:**

180 Karna-Sil Epoxy  
Primer

**Reflective Finish Coat:**

670HS Karna-Sil Ultra

The following KARNAK Roof Restoration System is intended to be applied over sound and dry, existing smooth built-up asphalt and smooth or granular modified bitumen or granular cap sheet roofing systems with positive drainage.

**BENEFITS & ADVANTAGES:**

- Fibered asphalt emulsion base coat provides additional asphalt protection over worn areas exhibiting checking and alligatoring as well as coats over cracks and crevices to provide a firm base to receive reflective top coatings.
- Silicone coating will not degrade, chalk or crack under harsh UV exposure.
- Tough, flexible elastic film.
- Excellent adhesion to prepared asphalt surfaces.
- 670 Karna-Sil Ultra is an Energy Star® listed reflective coating reduces 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.
- Avoids roof replacement and adds life to the existing roof system.
- Forms a seamless membrane that withstands permanent ponding water without softening.
- 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:** An elastomeric, thermoplastic-rubber sealant formulated for sealing and repairing seams, flashings, curbs, fasteners, penetrations and general repairs to asphalt based roofs.
- 1.3 **5540 Resat-Mat:** Spunlaced polyester fabric for reinforcing mastics and coatings over irregular, rough surfaces as well as smooth surfaces.
- 1.4 **220 Emulsion Roof Coating:** Manufactured with refined asphalt, bentonite clay, emulsifiers and fibers for protecting asphalt weathered and alligatored surfaces.
- 1.5 **180 Karna-Sil Epoxy Primer:** Two-part, water-based epoxy primer used to prime and prepare roof surfaces prior to applying 670 Karna-Sil Ultra silicone coating.

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- 1.6 **670HS 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.
- B. All roof surfaces to be coated should be sound, clean, dry and free of dirt, grease, oil, dust, debris and loose granules. Do not apply over brittle roof surfaces.
- C. It is highly recommended that a moisture survey be conducted. If 20% or more of the roof is considered wet this coating system should not be installed. Other reroofing options should be considered. If wet areas encompass less than 20%, all wet insulation and roofing materials should be removed and replaced with like materials prior to coating application.
- D. Adhesion of the coatings should be tested over all applicable roof surfaces prior to the system application.

#### 2.2 Preparation:

- A. Repair all cracks, splits, holes and large blisters with Karna-Flex and Resat-Mat in a three-course application. Seal all other defective areas that may affect the waterproofing integrity of the existing roof system.
- B. Cut away low hanging branches and vegetation that extend onto the roof.
- C. Power-wash all surfaces to be coated with 799 Wash-N-Prep Roof Cleaner and water maintaining a minimum of 2000 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 Repairs:

- A. Seal and repair all base flashings, roof penetrations, drains, cracks, holes, large blisters and splits with Karna-Flex and 5540 Resat-Mat prior to applying coatings.
  - a. Apply Karna-Flex in a 1/16" – 1/8" thickness by 8" width directly over the area to repair.
  - b. While still wet, immediately embed 6" wide Resat-Mat into the wet Karna-Flex.
  - c. Immediately apply an additional 1/16" – 1/8" thick by 8" wide application of Karna-Flex over the embedded Resat-Mat to completely cover the fabric, feathering the Karna-Flex out to the roof surface. No fabric should be visible.
  - d. Total coverage of Karna-Flex in this application is approximately 26 lineal feet per gallon.
  - e. Allow Karna-Flex to completely dry 6-24 hours before application of the subsequent coating.

### 2.4 Base Coat Application:

- A. Application of 220 Emulsion Roof Coating should take place when temperatures are 40°F-100°F and humidity levels are 85% or less.
- B. Mechanically mix the 220 Emulsion Roof Coating to overcome any settling that may occur. Mix the product to a homogenous consistency.
- C. Starting at one end of the roof, apply one coat of 220 Emulsion Roof Coating at the rate of 2 to 4 gallons per 100 sq.ft. with a wide fiber roof brush or heavy-duty airless spray equipment.
- D. If applying by brush, pour an amount onto the roof then spread coating with a wide fiber roof brush.
- E. If spray applying, back brush the coating to achieve maximum adhesion and even coverage.
- F. Apply the coating evenly and brush in all directions to force the coating in cracks and crevices. Do not overwork the coating or attempt "touch-ups" while the coating is still wet.
- G. Apply 220 Emulsion Roof Coating up adjacent parapet walls and flashings at the rate of 2-3 gallons per 100 sq.ft.
- H. Allow 220 Emulsion Roof Coating to cure for a minimum of 7-10 days before applying subsequent coatings. Cooler weather will require additional curing time.

### 2.5 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.

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- B. Take combined two component primer and apply at an average rate of 75-150 sq.ft. per gallon to the entire roof surface. Over smooth BUR and smooth modified apply at the rate of 100-150 sq.ft. per gallon. Over granulate modified and cap sheet apply at 75-100 sq.ft. per gallon. Do not use material that has been mixed for 4 hours or more.
- C. Apply with a nylon brush or 1/4" to 3/8" nap roller or airless spray equipment.
- D. 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.

### 2.6 Reflective Finish Coat Application:

- A. Application of 670HS Karna-Sil Ultra should take place when temperatures are 40°F-100°F. Do not apply if rain is expected within 24 hours after application.
- B. Apply 670HS Karna-Sil Ultra over 180 Karna-Sil Epoxy Primer as soon as primer has thoroughly set.
- C. Best adhesion is achieved if primer is coated over within 1-3 days after application. 670HS Karna-Sil Ultra must be applied within 7 days after application of the primer.
- D. 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.
- E. Apply 670HS Karna-Sil Ultra with a soft roof brush, medium nap roller or heavy-duty airless spray equipment.
- F. Apply in a single coat application at the rate of 1.5 gallons per 100 sq.ft. for 23 dry mils or at the rate of 3 gallons per 100 sq.ft. for 48 dry mils.
- G. Do not apply if rain is expected within 24 hours after application.

### 2.7 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:** 20-26 lineal feet per gallon
- C. **5540 Resat-Mat:** 6" x 300' per roll
- D. **220 Emulsion Roof Coating:** 2-4 gal. per 100 sq.ft.
- E. **180 Karna-Sil Epoxy Primer:** 1 gal. per 75-150 sq.ft.

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**F. 607HS Karna-Sil Ultra:**

1.5 gal. per 100 sq.ft. - 23 dry mils  
OR  
3 gal. per 100 sq.ft. - 48 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 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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