

APPLICATION GUIDELINES

WHITE REFLECTIVE COATING SYSTEM

Substrates:

BUR with Gravel

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, dry, existing gravel covered built-up roofing with positive drainage.

BENEFITS & ADVANTAGES:

- Fibered asphalt emulsion base coat provides additional asphalt protection over worn areas exhibiting checking and alligating 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. Coating fills voids between remaining gravel to produce a smoother surface for receiving reflective coating.

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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.

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 gravel. Do not apply over brittle roof surfaces.
- C. Remove all loose gravel by power vacuuming or power brooming.
- D. 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. New cold-applied modified bitumen roofs and should weather 90-180 days before installing coating system. New BUR roofs should also age 90-180 days unless special considerations are taken.
- E. 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

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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.

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. Scrape area clean to remove all gravel.
 - b. Apply Karna-Flex in a 1/16" – 1/8" thickness by 8" width directly over the area to repair.
 - c. While still wet, immediately embed 6" wide Resat-Mat into the wet Karna-Flex.
 - d. 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.
 - e. Total coverage of Karna-Flex in this application is approximately 18-26 lineal feet per gallon.
 - f. 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 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.

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- a. If an additional coat of 220 Emulsion Roof Coating is desired in order to continue building up the surface and fill in low areas between gravel, allow first coat to cure 2-3 days before applying second coat.
 - b. Apply a second coat of 220 Emulsion Roof Coating at the rate of 2-4 gallons per 100 sq.ft. in the same manner as the first coat.
- 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 a one-coat 220 Emulsion Roof Coating application to cure for a minimum of 7-10 days before applying subsequent coatings. If two coats are applied, allow to cure for 14 days after application of second coat 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.
- B. Take combined two component primer and apply at an average rate of 75-150 sq.ft. per gallon to the entire roof surface. Note that applying too much primer will reduce the adhesion strength.
 - a. Smooth asphalt surfaces apply at the rate of 100-150 sq.ft. per gallon.
 - b. Irregular asphalt surfaces apply at 75-100 sq.ft. per gallon.
- 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.

2.6 Reflective 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. 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.

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- 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 46 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:** 18-26 lineal feet per gallon
- C. **5540 Resat-Mat:** 6" x 300' per roll
- D. **220 Emulsion Roof Coating:** One coat at 4 gal. per 100 sq.ft.
Or
Two coats at 6-8 gal. per 100 sq.ft.
- E. **180 Karna-Sil Epoxy Primer:** 1 gal. per 75-150 sq.ft.
- F. **607HS 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 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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