

APPLICATION GUIDELINES

WHITE REFLECTIVE COATING SYSTEM

Substrates:

Gravel Covered BUR

Mastic Type:

Karna-Flex WB

Primer:

**100 Non-Fibered
Primer**

Base Coat:

**220 Emulsion Roof
Coating**

Reflective Base Coat:

405 Bond-N-Shield

Reflective Finish Coat:

670HS Karna-Sil Ultra

The following KARNAK Roof Restoration System is intended to be applied over sound, dry, existing gravel covered BUR (built-up roofing) systems with positive drainage.

BENEFITS & ADVANTAGES:

- Asphalt emulsion primer and base coats promote positive adhesion and provides additional asphalt protection over worn areas exhibiting checking and alligatoring as well as fills in cracks and crevices to provide a firm base to receive reflective top coatings.
- 670HS Karna-Sil Ultra is an Energy Star® listed reflective coating which can 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.
- Avoids roof replacement and adds life to the existing roof system.
- Reflective coating prevents harmful UV rays from prematurely cracking or drying out the roofing system.

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 flashings, curbs, fasteners, penetrations and general repairs to all types of asphalt 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 **100 Non-Fibered Primer:** General purpose, non-fibered asphalt emulsion primer used to prepare previously gravel covered asphalt surfaces for subsequent emulsion coatings.
- 1.5 **220 Emulsion Roof Coating:** Manufactured with refined asphalt, bentonite clay, emulsifiers and fibers for protecting asphalt weathered and alligatored surfaces.
- 1.6 **405 Bond-N-Shield:** 100% elastomeric acrylic coating specifically designed as a base coating for improved adhesion to asphalt surfaces. The coating contains stains blockers that prevent asphalt bleed thru to produce a brighter and long lasting coating system. Also greatly improves water blister resistance in temporary ponding areas versus traditional acrylic coating.

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- 1.7 **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. 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.
- F. Do not apply any coating if rain is expected within 24 hours after application.

2.2 Preparation:

- A. Repair all cracks, splits, holes and large blisters with Karna-Flex WB 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.

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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 all curb flashings, roof penetrations, drains, cracks, holes, large blisters and splits with Karna-Flex WB and 5540 Resat-Mat prior to applying coatings. It is the applicator's responsibility to identify and seal all other defective areas that may affect the waterproofing integrity of the existing roof system.
 - a. Spud back gravel over area to seal and apply Karna-Flex in a 1/16' - 1/8" thickness by 8" width directly over the area to repair with a 'chip-type' brush.
 - c. While still wet, immediately embed 6" wide Resat-Mat into the wet Karna-Flex WB. Use the brush to remove any wrinkles or fishmouths.
 - d. Immediately brush apply an additional 1/16" - 1/8" thick by 8" wide application of Karna-Flex WB over the embedded Resat-Mat to completely cover the fabric, feathering the Karna-Flex WB out to the roof surface. No fabric should be visible.
 - e. Total coverage of Karna-Flex WB in this application is approximately 20 lineal feet per gallon.
 - f. Allow Karna-Flex WB to cure 48-72 hours before application of the subsequent finish coating.

2.4 Primer Application:

- A. Application of 100 Non-Fibered Primer should take place when temperatures are 40°F-100°F and humidity levels are 85% or less.
- B. Thoroughly mix the 100 Non-Fibered Primer 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 100 Non-Fibered Primer at the rate of 2 gallons per 100 sq.ft. with a wide fiber roof brush.
- D. Make sure to brush the primer in all cracks and crevices from all directions.
- E. Do not attempt "touch-ups" while the coating is still wet.

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F. Allow emulsion primer to cure 24-48 hours or until firm. Primer will be tacky even after curing.

2.5 Base Coat Application:

- A. Application of the 220 Emulsion Roof Coating (base coat) should take place when temperatures are 40°F-100°F and humidity levels are 85% or less.
- B. Mechanically mix 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.
- G. Due to the irregularity of the surface, additional coats may be needed. If additional 220 Emulsion Roof Coating is desired to fill in cracks and crevices, wait 24 hours for first application to dry before applying additional material. It is the applicators decision if more coating is required to obtain the desired results.
- 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. 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.

2.6 Reflective Base Coat Application:

- A. Application of the reflective base coat should take place when temperatures are 40°F-100°F and humidity levels are 85% or less.
- B. Clean any areas of residue off the emulsion just before applying the reflective coating. This may be accomplished by wiping with a wet rag.
- C. Thoroughly mix the 405 Bond-N-Shield to overcome any settling that may occur. Mix the product to a homogenous consistency.
- D. Starting at one end of the roof, apply one coat of 405 Bond-N-Shield at the rate of 1.5 gallons per 100 sq.ft. with a 3/4" nap roller or airless spray equipment.

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- E. If spray applying the base coat, back roll the coating to achieve maximum adhesion and even coverage.
- F. Apply the coating evenly, working in the same direction. Don't overwork the coating or attempt "touch-ups" while the coating is still wet.
- G. Allow 6-12 hours before applying subsequent coating.

2.7 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. 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 2 gallons per 100 sq.ft. for 25-30 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:** 20-25 lineal feet per gallon
- C. **5540 Resat-Mat** 6" x 300' per roll
- D. **100 Non-Fibered Primer:** 2 gal. per 100 sq.ft.
- E. **220 Emulsion Roof Coating:** 4 gal. per 100 sq.ft.
Additional Coating as Needed
- F. **405 Bond-N-Shield Base Coat:** 1.5 gal. per 100 sq.ft.
- G. **670HS Karna-Sil Ultra:** 2 gal. per 100 sq.ft.

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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 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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