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BUILT-UP ROOF COATING SMOOTH and GRANULE SURFACE SPECIFICATION

PART 1: GENERAL

- 1.01 SCOPE:** To extend the useful service life of the aged or new asphalt built-up roof system and to reduce cooling costs through the application of a high performance reflective roof coating system.
- 1.02 SYSTEM DESCRIPTION:** This specification includes surface preparation and application of the **MEGAFLEX™ High Performance Cool Roof Coating System**. The reflective Cool Roof finish coat shall be an **ENERGY STAR® Qualified Roof Product** exceeding **ENERGY STAR®** minimum Solar Reflectance standards and a **Cool Roof Rating Council (CRRC) Rated Product** with the following minimum properties: Initial Solar Reflectance of 80%; Initial Thermal Emittance of .80.
- THIS SPECIFICATION IS NOT FOR USE OVER GRAVEL OR PREVIOUSLY GRAVELED SURFACES.**
- 1.03 REFERENCES:** **ASTM D 6083** Standard Specification for Liquid Applied Acrylic Coating Used in Roofing; Annual Book of ASTM Standards Section 4, Volume 04.04, Roofing, Waterproofing and Bituminous Materials.
- 1.04 SUBMITTALS:**
- A. Product Information:** Submit product technical data and application instruction for each type of material listed in "PART 2: PRODUCT".
 - B. Samples:** Submit sample of each product as required.
- 1.05 QUALITY ASSURANCE:**
- A. Underwriters Laboratories:** The finish coat shall be a UL Classified Class A Fire Rated material with Underwriters Laboratories Inc.
 - B. Codes and Regulations:** Apply material in accordance with all applicable building codes, environmental regulations, safety regulations and industry safety standards.
 - C. Installer Qualifications:** Installer shall have a minimum of two years roofing experience, necessary equipment for application and be a **MEGA Approved Contractor**.
- 1.06 DELIVERY AND STORAGE:** Deliver clearly labeled materials to the job in the manufacturer's original unopened container. All containers shall be labeled with the ENERGY STAR® certification logo and the Cool Roof Rating Council label clearly showing the Initial Solar Reflectance and Thermal Emittance per Section 1.02, above. Store the material in a dry location between the temperatures of 50° F and 80° F.
- 1.07 PROJECT/SITE CONDITIONS:**
- A. General:** Do not commence installation if rain is expected within twenty-four (24) hours of application.
 - B. Curing Properties:** **MEGAFLEX™** is a rapidly polymerized UV (ultra-violet) radiant curing material. Ensure a minimum of four (4) hours of daylight exist after completion of daily application to allow for proper curing. Coating work should best commence in the morning hours to allow for proper curing but only after dew and condensation have evaporated or been removed.
 - C. Ambient Temperatures:** Do not apply if ambient temperature is below, or will fall below, 50° F before curing is complete. Do not apply if ambient or surface temperature exceeds 120° F as premature drying or skinning over may occur.

PART 2: PRODUCTS

- 2.00** All materials used in the system shall be furnished by MEGA Industries Corporation, Phoenix, AZ.
- 2.01 MATERIALS:**
- A. MEGAFLEX™ M-100 Cool Roof White Reflective Roof Coating** is a High Performance proprietary water-based, 100% acrylic co-polymer resin formulations to ensure the highest degree of adhesion and water resistance.

A. MEGAFLEX™ M-200 Base Coat

Gray Base Coat is equal to M-100 but tinted a light gray. Used as a base coat on “aged” asphaltic roof systems. Its tinting provides contrast to ensure the proper application of M-100 finish coat. For physical properties refer to the Mega product data.

B. MEGAFLASH™ M-500 Flashing Cement/ Seam Sealer

A White trowel/brush grade cement for repairs, flashings and other detail work. For physical properties refer to the Mega product data.

D. MEGAFLEX™ M-700 Base Coat

A thin viscosity, 100% acrylic polymer resin material for use over “new” asphaltic based roofs systems and existing acrylic coated systems prior to the finish coat application.

Promotes adhesion and fits small surface irregularities. Resists bleed-thru by integrating fresh oil leaching blocker. Provides contrast to ensure proper application of the M-100 finish coat. For physical properties refer to the Mega product data

E. MEGAFLEX M-600 Series Reinforcing Fabric

A polyester fabric with high elongation and tensile strength, which conforms to surface irregularities. For use with M-500 Flashing Cement. For physical properties refer to the Mega product data

PART 3: EXECUTION

3.01 EQUIPMENT:

- A. Spray Grade Products: (NOTE: protect all non-related areas from over spray)**
 1. MEGAFLEX M-100 Cool Roof White Reflective and M-200 Gray Base Coatings
 2. MEGAFLEX M-700 Gray Base

	<u>M-100/M-200</u>	<u>M-700</u>
Airless Spray Pump (psi):	2,000 - 3,000	2,000 - 3,000
Gallons per Minute:	1 to 2 GPM	1 GPM
Filter:	30 to 60 mesh	30 to 60 mesh
Tip Size (Reversible/Self Cleaning):	.027" - .039"	.015" - .025"
Tip Fan Angle:	Wide angle	Wide angle
Hose:	3/8" – ½" I.D.	3/8" – ½" I.D.

NOTE: A ¾" nap roller or soft bristle brush may also be used for the above products. Avoid brush marks and streaking, which promote dirt pick-up.

B. Other Products/Materials:

1. M-500 Flashing Cement/Seam Sealer - Trowel, putty knife or stiff brush
2. M-600 Reinforcing Fabric – By hand. Scissors and utility knife.
3. 3,000 psi power pressure washer with oscillating tip and a water source.

3.02: PRE-APPLICATION INSPECTION

Prior to the application, inspect the membrane surface, flashings and detail areas to be coated with MEGAFLEX for the following:

- A. Problem Areas:** Locate and mark all leaks, wet roof insulation, trapped inter-ply moisture, blisters, loose laps, damaged surfaces, deteriorated flashings and wall flashings and edge details, etc., including, but not limited to; splits, cracks, holes, fish mouths, open seams, etc. Trapped moisture will create blisters in the coating and lead to delamination and premature coating failure.
- B. Slope:** Ensure the roof has a positive slope to drain..
- C. Standing Water:** Locate and mark all areas which pond water in excess of 48 hours.
- D. Foreign Materials:** MEGAFLEX products will not adhere to certain materials, such as; silicone and ceramic coatings. For questionable surfaces, including aluminum coated surfaces, clean an area and install a test patch of primer and coating to determine acceptable adhesion. Contact the manufacturer for recommendations and instructions.

3.03: SURFACE PREPARATION

- A. **System Moisture:** Remove and replace all wet roof insulation and membranes with trapped interply moisture. Remove and replace all deteriorated or damaged wall flashing and edge details. Replace these areas with dry materials of the same type. Ensure these areas are level with the existing roof surface to avoid a ponding water situation.
- B. **Damaged Surfaces:** Repair dry areas with **M-500** Flashing Cement in an even thickness of 1/8" centered over the damaged area and extending 2" beyond each edge of the fabric. Feather at edges. Immediately embed and brush-in **M-600** Reinforcing Fabric ensuring the fabric is not stretched and is wrinkle free. Apply a second coat of **M-500** Flashing Cement using the above application rate and method. Allow to dry for 24 hours and inspect for voids, wrinkles and fish-mouths. All fish-mouths and wrinkles shall be cut to lay flat in fresh M-500. Apply a final coat of M-500 over these areas. Avoid the use of solvent-based roof cements in these areas as they are a source of asphalt bleed thru and staining of the finished coating.
- C. **Standing Water:** Take corrective action in all area where ponding water exists in excess of 48 hours. "Corrective action" includes the elimination of standing water with the use of crickets, additional drains and/or other corrective procedures.
- D. **Pressure Wash:** All surfaces to be coated and flashed must be power washed. A minimum working pressure of 3,000 psi is required. Use care not to penetrate the existing membrane or laps. Use a mild detergent and water mixture to remove all membrane exudate (i.e. "tobacco juice"), dust, dirt, debris, talc, sand, loose granules, oils, mildew, loose existing coatings, etc. The use of a stiff brush may be required in stubborn dirt areas. Chlorine bleach should be added to the mixture to eliminate mildew and algae, if present. An oscillating spray tip is most effective. Rinse surface thoroughly with the pressure washer using clean water. Allow to dry before proceeding. Work up slope to pressure wash and down slope toward drainage to rinse. No more than fourteen (14) days shall elapse between pressure washing/cleaning and the application of the *MEGAFLEX* Cool Roof Coating System or all surfaces to be coated shall be pressure washed/cleaned again.
- E. **Base Application:**
 - 1. **Aged Smooth Surfaces** (membrane installed a minimum of 12 months prior): Apply **M-200** Base Coat evenly at a rate of .75 gallons per 100 SF.
 - 2. **New Smooth Surfaces** (membrane installed within 0-12 months): Apply **M-700** Base Coat evenly at a rate of .75 gallons per 100 SF.
 - 3. **Aged Granulated Surfaces** (membrane installed a minimum of 12 months prior): Apply **M-200** Base Coat evenly at a rate of 1.0 gallons per 100 SF.
 - 4. **New Granulated Surfaces** (membrane installed within 0-12 months): Apply **M-700** Base Coat evenly at a rate of 1.0 gallons per 100 SF.
 - 5. **Aluminum Coated Surfaces:** After pressure washing, all aluminum coated surfaces shall be primed with an ASTM D-41 Asphalt Primer evenly at a rate of .25 to .5 gallons per 100 SF. Allow to dry then apply M-700 Base Coat per paragraph 1 or 2 above.
 - 6. **Dry Time:**
 - a. **M-200 Base:** Allow Base to dry a minimum of 4 hours prior to application of the finish coating.
 - b. **M-700 Base:** Allow Base to dry a minimum of 4 hours prior to application of the finish coating.
 - c. **ASTM D-41 Asphalt Primer:** Allow to dry a minimum of 16 to 24 hours prior to application of the base coat and finish coat

3.04: APPLICATION

- A. **Penetrations/Details:** Using **M-600** Reinforcing Fabric, reinforce all penetrations and details. Apply **M-500** Flashing Cement in an even thickness of 1/8" extending 2" beyond each edge of the fabric on both horizontal and vertical surfaces. The edge of the fabric should extend a minimum of 3" up the vertical surface. Cut fabric as needed to conform to the shape of the penetration. Immediately embed and brush-in **M-600** Reinforcing Fabric ensuring the fabric is not stretched and is wrinkle free. Cut out all fish-mouths and wrinkles. Apply a second coat of **M-500**, again extending 2" beyond each edge of the fabric. Allow M-500 to dry and inspect for voids, wrinkles and fish-mouths. Cut these areas to lay flat and re-seal with M-500. Allow to dry for 24 hours before coating.
- B. **Inspection:** Inspect the entire roof surface prior to application of the coating. Remove any debris, which will inhibit adhesion of the coating.
- C. **Finish Coat:** Apply **M-100 Cool Roof White Coating** evenly at a rate of 1.25 gallons per 100 SF and at a 90° angle to the Primer/Base Coat application direction ensuring all lap edges are completely coated.

Ensure all lap edges are completely coated. Allow the Finish Coat to dry for 24 hours and inspect roof for flaws and insufficient coating thickness, etc. No bare or uncoated lap edges should be visible. Take corrective action by re-coating these areas.

- D. Warranty:** Qualifies for the MEGA Five Year Material Performance Warranty.
- E. Clean Up:** Clean all brushes and equipment with soap and water solution at the end of each day and when changing products.
- F. Maintenance:** The reflective coating should be cleaned every two years with a low pressure power washer to maintain maximum reflectivity and cooling cost savings.

Energy savings from installation of an ENERGY STAR® Roof Product are climate specific and vary by building. The greatest savings will occur in buildings located in hot and sunny climates that have a high roof surface to building volume ratio, and lower levels of attic and/or roof insulation.

MEGA Industries Corporation is an ENERGY STAR® Roof Products Partner and a Charter Member of the Cool Roof Rating Council.



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