

ROOF MATE *Over* TPO ROOFING MASTER GUIDE SPECIFICATION SECTION 07545

Advanced Acrylic Fluid-Applied Elastomeric Coating System

PART 1 – GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Rough Carpentry: Section 06100
- B. Board-Stock Roof Insulation: Section 07220
- C. Flashing & Sheet Metal: Section 07620
- D. Roof Accessories: Section 07800
- E. Prefabricated Expansion Joints: Section 07860
- F. Painting: Section 09900

1.02 QUALITY ASSURANCE

- A. Qualifications of Contractor
 - 1. The Contractor shall be approved by the Coatings Manufacturer, and shall have a minimum of three (3) years experience in the application of acrylic elastomeric roof coatings.
 - 2. The Contractor shall provide a list of project references, including contact names and telephone numbers.
- B. Qualifications of Manufacturer
 - 1. Manufacturer shall have a proven 20-year track record utilizing elastomeric acrylic technology.
 - 2. Approved products shall be manufactured exclusively from Rohm and Haas advanced acrylic resins.
 - 3. Other manufacturer's products shall be considered only after submittal of product data supporting quality and full compliance with specifications herein. The Architect or Owner reserves the right to reject the substitution proposals should it be determined they do not provide all functions required for application.
- C. Testing & Labeling
 - 1. The system must be U.L. 790 classified as Class A for maintenance and repair of existing Class A, B or C roofing construction. All containers must bear the U.L. label and be subject to U.L. follow-up service.
 - 2. The Manufacturer shall also provide recognized, third party independent test results confirming the coating systems conformance to ASTM D6083.
 - 3. Individual container labels must include the Manufacturer's name, product name, type and class of material, U.L. sticker with classification number, F.M. logo, ICC report number, batch number, mixing and application instructions, and precautions.

1.03 SUBMITTALS

- A. Submit Manufacturer's literature, certificates and samples in a single package to the Architect or Owner in accordance with requirements specified in General Conditions and Division 1, General Requirements.
- B. Manufacturer's Literature: Literature on the protective coating, as well as related primers, sealants, reinforcement, etc., shall be submitted for review before work is started. Literature shall show material specifications, physical properties (including ASTM test methods utilized), Manufacturer's estimated application rate for required dry mil thickness per warranty requirements, current application instructions and MSDS.
- C. Applicator's Qualifications: Submit a copy of Approved Applicator letter and/or certificate as issued by the Manufacturer of the elastomeric acrylic coating system.
- D. Warranty: Submit a copy of Coating Manufacturer's warranty to meet project specifications.

1.04 PRODUCT DELIVERY, STORAGE & HANDLING

- A. Delivery of Materials: Materials shall be delivered to the jobsite in original, sealed containers.
- B. Storage of Materials: Materials shall be stored in accordance with Manufacturer's recommendations.
- C. Material Handling: Materials shall be handled and installed per Manufacturer's instructions.
- D. Damaged Materials: Contaminated, damaged or unsealed materials, or materials not conforming to the specified requirements shall be immediately removed from the jobsite and replaced.

1.05 ENVIRONMENTAL CONDITIONS

- A. Install all materials in strict accordance with Manufacturer's published safety and weather precautions.
- B. Do not apply elastomeric acrylic coating system components when the ambient and/or surface temperature is below 50°F (10°C) or above 110°F (43°C), if any surface moisture is present, when the dew point is within 5°F (3°C) of the surface temperature or when there is a possibility of temperatures falling below 32°F (0°C) within a 24 hour period. Do not spray apply if the wind velocity exceeds 10 mph (16 kph) without appropriate precautions.
- C. Take all measures necessary to protect unrelated surfaces from coating overspray or spillage.

1.06 FIELD QUALITY CONTROL

- A. The overall weather conditions, including surface temperature, surface moisture, ambient temperature, relative humidity and wind velocity shall be recorded by the Contractor, at designated time intervals, on the Daily Quality Control Report Form if so requested by the Architect or Owner.
- B. Verification of Protective Coating Thickness: The wet film thickness shall be measured and recorded daily, along with the quantity, batch numbers and total square feet applied, on the Daily Quality Control Form.

PART 2 – PRODUCTS

2.01 DESCRIPTION

A seamless, fluid-applied acrylic membrane system designed for application over **TPO** roof substrates. Approved system shall be UNITED COATINGS' **ROOF MATE TPO Roof Coating System** consisting of **ROOF MATE** advanced Acrylic Single Component Elastomeric Roof Coating, **ROOF MATE BUTTER GRADE**, High-Quality, Single-Package urethane sealant, **ROOF MATE MESH**, **ROOF MATE FABRIC**, **ACRYSHEEN** and **UNITED CLEANING CONCENTRATE (UCC)**.

2.02 MATERIALS

- A. Biodegradable Cleaner: **UNITED CLEANING CONCENTRATE (UCC)**, water-reducible non-phosphate cleaner, as supplied by Coating Manufacturer for use in cleaning **TPO** substrates prior to coating.
- B. Construction Grade Caulk: Single-package polyurethane sealant, as supplied by Coating Manufacturer or roofing contractor for use on termination bars and reglet counterflashings.
- C. Fabric Adhesive and Primer: **ROOF MATE Basecoat**, single package acrylic, as supplied by Coating Manufacturer for use in adhering and embedding reinforcing fabric.
- D. Reinforcement Fabric: **ROOF MATE MESH** and **ROOF MATE Fabric**, stitchbonded polyester, as supplied by Coating Manufacturer for use in reinforcing detail areas, for full reinforcement of coating membrane, or for protection of coating when reapplying ballast.
- E. Fluid-Applied Reinforcement Mastic: **ROOF MATE BUTTER GRADE**, single package acrylic, as supplied by Coating Manufacturer for use as an option to **ROOF MATE Mesh** on detail areas and in reinforcing metal flanges at drip edges.
- F. Fluid-Applied Elastomeric Topcoat: UNITED COATINGS' **ROOF MATE**, advanced acrylic coating, as supplied by Coating Manufacturer to provide a weatherproof membrane over the existing **TPO** substrate.
- G. Self-Cleaning Topcoat (optional): **ACRYSHEEN**, clear, semi-gloss advanced acrylic sealer, as supplied by Coating Manufacturer for increased dirt release characteristics.

2.03 PERFORMANCE REQUIREMENTS – FLUID-APPLIED ELASTOMERIC COATING

Fluid-applied, 100% pure acrylic elastomeric topcoat in the specified finish color, shall be internally plasticized to provide a permanently flexible, weather-resistant topcoat. It shall possess a Class "A" fire rating, as tested and certified by UL 790, Factory Mutual and ICC. Coating shall meet or exceed all properties specified in ASTM D6083, Table 1, "Liquid Property Requirements", and Table 2, "Film Physical Property Requirements for Acrylic Roof Coatings", as follows, and shall be verified by a certified independent testing agency.

Viscosity	85 to 141 KU (ASTM D562) 12,000 - 85,000 cps (ASTM D2196)	Fungi Resistance	Zero Rating (ASTM G21)
Volume Solids	>50% (ASTM D2697)	Permeance	Maximum 50 perms (17.2 x 10 - 10 kg/s·m ² ·Pa) (ASTM D1653)
Weight Solids	>60% (ASTM D1644)	Water Swelling	Maximum 20% (mass) (ASTM D471)
Initial % Elongation (break)	Minimum 100% @ 73°F (23°C) (ASTM D2370)	Accelerated Weathering (1000 hours)	No cracking/checking (ASTM D4798)
Initial Tensile Strength (minimum stress)	Minimum 200 psi (1.38 MPa) @ 73°F (23°C) (ASTM D2370)	Adhesion	Minimum 2.0 pli (350 N/m) (wet) 4.0 pli (700 N/m) (dry) (ASTM C794 or D903)
Final % Elongation (break) after 1000 hours accelerated weathering	Minimum 100% @ 73°F (23°C) (ASTM D2370)	Tear Resistance	>60 lbf/in. (21 kN/m) (ASTM D624)
		Low Temp Flexibility after 1000 hours	Minimum pass ½ inch mandrel @ -15°F (-18°C) (ASTM D522)

2.04 SUBSTITUTIONS

Acrylic coatings extended with styrene, vinyl or other ingredients are not allowed. Materials such as cementitious, ceramic-filled or asphalt modified coatings, moisture-cured urethanes, kraton based rubbers, **TPO** and butyls are not considered acceptable substitutes for materials specified herein.

PART 3 – EXECUTION

3.01 SURFACE INSPECTION

- A. Utilize installation paperwork or a certified roofing professional to confirm that the existing single-ply roofing material is **TPO**. New **TPO** membranes must be allowed to age a minimum of 6 months prior to application of the coating system.
- B. Roof surfaces shall be clean, dry, structurally sound, stable and well secured.
- C. The roof surface shall be free of excessive ponding water. Roof surfaces that pond water 48 hours after a rain shall be considered unacceptable. All water shall be allowed positive drainage from the roof.
- D. Inspect condition of flashing details adjacent to protrusions, penetrations, roof mounted equipment, curbs, walls, parapets, drains and roof edge to ensure that details are acceptable and will maintain a weather-tight installation after being properly reinforced and coated.
- E. Determine moisture content of existing substrate, insulation and deck. A moisture content of 15% or greater indicates a potential problem. Work shall not proceed until the cause is verified and the condition is corrected.

3.02 SURFACE PREPARATION

- A. All surfaces shall be clean and dry, and free of any dirt, dust, gravel, oil, surface chemicals or other contaminants that may interfere with optimum adhesion.
- B. Any unsound areas in the roof deck or insulation, including blisters, delamination, deterioration, excessive moisture content, etc., shall be repaired or replaced. After removing gravel from ballasted **TPO** single-ply systems, spot ballast with sand bags to avoid excessive fluttering of the membrane.
- C. All **TPO** surfaces, whether new or existing, shall be cleaned using **United Cleaning Concentrate (UCC)**. Dilute **UCC** at the rate of 1 part concentrate to 10 parts water. Apply the dilute mixture under low pressure spray at the rate of 200 sq. ft. (.2 l/m²) per gallon. After allowing to sit for 15 to 20 minutes, rinse thoroughly with fresh water under high pressure (minimum 2,000 psi/ 13.790 kPa) to remove the solution from the roof. Adhere-It wash primer may also be used to clean the existing **TPO** membrane. Heavy deposits of dirt or contamination may require agitation with a stiff-bristle broom or similar mechanical scrubber. If existing **TPO** membrane exhibits significant deterioration, utilize a low pressure, 500 psi rinse with extra attention given to “birdbaths” and other low areas. Significant deterioration is defined as large areas of exposed reinforcement scrim and/or severe chalking or alligatoring of the membrane. Allow the roof to dry thoroughly.
- D. Tighten or re-secure all terminations and caulk termination bars and reglet counterflashings with **ROOF MATE Caulk**.
- E. On all mechanically fastened as well as fully adhered **TPO** single-ply systems, remove and reinstall any fasteners that are backed out or “tented”, no more than six (6) inches (15 cm) from its original location. Use FMRC-approved stress plates and fasteners when replacing defective or worn fasteners.
- F. Repair all loose, torn or open seams in the **TPO** membrane using **ROOF MATE Basecoat** and **ROOF MATE Mesh**. Apply the coating liberally to the affected seam and surrounding area with a brush or roller. While the coating is still wet, embed a strip of 6" (15 cm) **ROOF MATE Mesh**, centered over the seam. Work mesh into the wet coating, applying additional material as necessary to totally encapsulate the reinforcing fabric.
- G. Repair any tears, breaks, holes (from fastener relocation or protruding fasteners), or other openings in the **TPO** membrane by applying **ROOF MATE Basecoat** and **ROOF MATE Mesh**, in a similar manner as described above.
- H. Reinforce detail areas with **ROOF MATE Mesh** and **ROOF MATE Basecoat**, or with **ROOF MATE Butter Grade**. If utilizing **ROOF MATE Mesh**, encapsulate the fabric with **ROOF MATE Basecoat** as described above around the base of all vents, stacks, fans and other protrusions, around all drains and scuppers, and around the base of all HVAC units and other roof-mounted equipment. If utilizing **ROOF MATE Butter Grade**, use a brush to apply 60 to 80 dry mils (1,524 to 2,032 microns) of coating liberally around these detail areas; apply the material in a minimum of 2 separate applications, allowing ample dry time between coats.

3.03 ELASTOMERIC COATING APPLICATION

- A. All roof preparation materials shall be allowed to dry thoroughly prior to application of the acrylic coating.
- B. Immediately prior to application of the acrylic coating system, all dust, dirt and other contaminants shall be blown off the roof surfaces to be coated using high pressure compressed air.
- C. At drip edges, refasten all metal flanges and reinforce the area with **ROOF MATE Butter Grade** or **ROOF MATE Mesh** embedded into a strip-coat of **ROOF MATE Basecoat** as previously described.

Include the following paragraph only if a full fabric reinforced system is specified

- D. Apply **ROOF MATE Basecoat** to a small section of roof where the fabric reinforcement will begin. Embed and encapsulate the end of the **ROOF MATE Fabric** roll so that it is anchored at that point. Apply a 4 to 10 foot (1.2 to 2.5 m) coat of **ROOF MATE Basecoat**, at the rate of 1 to 1.5 gallons per 100 sq. ft. (.4 to .6 l/m²), slightly wider than the width of the fabric. Roll the fabric into the wet coating so that it is completely saturated, allowing the fabric to conform to the surface contours of the substrate. Apply an additional coat of **ROOF MATE Basecoat** over the top of the fabric, then use a roller or broom to ensure that it is totally encapsulated, eliminating any air pockets, wrinkles, or gaps. Take extra care to ensure that edges of the fabric are well saturated and adhered. Overlap consecutive passes of **ROOF MATE Fabric** a minimum of 2" (5 cm) on each side. Allow the **ROOF MATE Basecoat** to dry thoroughly prior to applying the acrylic coating to the roof.
- E. The entire roof substrate shall receive **ROOF MATE** 100% acrylic elastomer coating applied as follows:

*Include the following paragraphs only if specifying a 5-Year Standard Warranty without full fabric reinforcement**

1. Apply **ROOF MATE Basecoat** at a minimum rate of 1 gallon per 100 sq. ft. (.4 l/m²).
2. After allowing the basecoat to dry, apply **ROOF MATE White** (or other specified color) at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m²). Use a medium-nap roller or airless spray to apply the elastomeric coating. Application of the topcoat shall be in a perpendicular direction to the basecoat.
3. The total – basecoat/topcoat – minimum dry film thickness required at any location is 20 mils (620 microns).

*Include the following paragraphs only if specifying a 10-Year Standard or 5-Year System Warranty without full fabric reinforcement**

1. Apply **ROOF MATE Basecoat** at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m²).
2. After allowing the basecoat to dry, apply **ROOF MATE White** (or other specified color) at a minimum rate of 1.0 gallons per 100 sq. ft. (.4 l/m²). Use a medium-nap roller or airless spray to apply the elastomeric coating. Apply consecutive coats of **ROOF MATE** in a perpendicular direction to the previous coat.
3. The total – basecoat/topcoat – minimum dry film thickness required at any location is 28 mils (711 microns).

***Include the following paragraphs only if specifying a 15-Year Standard or 10-Year System Warranty
without full fabric reinforcement****

1. Apply **ROOF MATE** Basecoat at a minimum rate of 1.0 gallons per 100 sq. ft. (.4 l/m²).
2. After allowing the basecoat to dry, apply two separate coats of **ROOF MATE** White (or other specified color) at a minimum rate of 1.25 gallons per 100 sq. ft. (.5 l/m²) per coat. Use a medium-nap roller or airless spray to apply the elastomeric coating. Apply consecutive coats of **ROOF MATE** in a perpendicular direction to the previous coat.
3. The total – basecoat/topcoats – minimum dry film thickness required at any location is 36 mils (914 microns).

***Include the following paragraphs only if specifying a 15-Year System Warranty
without full fabric reinforcement****

1. Apply two separate coats of **ROOF MATE** Basecoat at a minimum rate of 1.25 gallons per 100 sq. ft. (.5 l/m²) per coat.
2. After allowing the basecoats to dry, apply two separate coats of **ROOF MATE** White (or other specified color) at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m²). Use a medium-nap roller or airless spray to apply the elastomeric coating. Apply consecutive coats of **ROOF MATE** in a perpendicular direction to the previous coat.
3. The total – basecoats/topcoats – minimum dry film thickness required at any location is 44 mils (1,118 microns).

****Note: On applications incorporating full fabric reinforcement, chose the appropriate procedure above based on the desired warranty, and eliminate application of the 1st coat of ROOF MATE Basecoat***

- F. The **ROOF MATE** topcoat shall extend up and over all roof substrates on vent pipes, parapets and other protrusions to terminate a minimum of 3” (8 cm) above the substrate, creating a self-terminating flashing and to provide an aesthetically pleasing appearance.
- G. On ballasted systems using crushed stone rather than river-washed stone, loose lay **ROOF MATE Fabric** over the entire roof surface prior to redistributing the ballast, overlapping all edges a minimum of 6 inches (15 cm).
- H. As an option on roofs located in industrial areas and/or subjected to high levels of pollutants, dirt, dust or other contaminants, apply a coat of **Acrysheen** at the rate of 200 to 250 sq. ft. per gallon (4.8 to 6.1 m²/l). **Acrysheen** imparts a slick, semi-gloss finish that aids in maintaining a clean surface.
- I. To provide a non-skid walk path on roofs subject to heavy foot traffic, demarcate walkways by applying an additional coat of **ROOF MATE** at the rate of 1 gallon per 100 sq. ft. (.4 l/m²) along the designated traffic area. While the coating is still wet, broadcast 3M #11 ceramic roofing granules to the point of refusal. **UNITED COATINGS’ Rhino Top**, a non-skid colored acrylic topping, can also be used to demarcate walkways, as can **Uni-Crete** or breathable walk pads such as “Yellow Spaghetti”.

3.04 CLEANUP

- A. Maintain work and work areas in a clean, safe condition at all times during coating installation. Remove excess materials, trash and debris from the jobsite daily.
- B. At the completion of the project, clean area of any spills and containers and clean up all roofing debris, leaving jobsite in a clean and orderly condition.

3.05 WARRANTY

- A. Upon completion of the roof coating system, the Coating Manufacturer’s Representative, Owner’s Representative, Architect and Applicator shall make a final inspection to determine the dry film thickness of the fluid-applied acrylic membrane and to verify that the system meets the Manufacturer’s requirements for warranty. The Contractor shall notify all interested parties in advance of said inspection.
- B. As a condition of the project’s completion and acceptance, deliver to the Owner a copy of the fully executed, specified warranty from the Coating Manufacturer, following individual warranty guidelines.



2810 South 18th Place • Phoenix, AZ 85034
Phone: (480) 754-8900 • Fax: (480) 754-8939
(800) 541-4383 • www.questconstructionproducts.com

