

# ROOF MATE Over BOARD-STOCK INSULATION 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. Flashing & Sheet Metal: Section 07620
- C. Roof Accessories: Section 07800
- D. Prefabricated Expansion Joints: Section 07860
- E. 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 of the fluid-applied elastomeric acrylic coating system shall have a proven 20-year track record of successful installations using advanced elastomeric acrylic technology in the roofing industry.
  - 2. Approved products shall be manufactured exclusively from Rohm and Haas advanced acrylic resins.
  - 3. Other Manufacturer's products shall be accepted for use on this project only after submittal of product data files to the Architect or Owner supporting quality, equality and full compliance with specifications herein. The Architect or Owner reserves the right to reject the substitution proposals should it be determined the submittals do not provide all functions required for application.
- C. Testing & Labeling
  - 1. The elastomeric acrylic coating system must be Factory Mutual and U.L. tested and classified as a Class A fluid-applied system for maintenance and repair of existing Class A, B or C roofing construction, and be subject to U.L. follow-up service. The acrylic coating shall also be approved and listed by Factory Mutual as an acceptable recoating system over existing roof substrates, and approved by Miami-Dade County.
  - 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 following information or they will be rejected at the jobsite: Manufacturer's name, product name, type and class of material, FM and U.L. stickers with classification issue number, batch or lot 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, sealant, 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 film 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 Manufacturer's original, sealed containers with labels legible and intact.
- B. Storage of Materials: Materials shall be stored in an area specifically designated for that purpose, in accordance with Manufacturer's recommendations, where temperatures will not be less than 50°F (10°C) or more than 100°F (38°C).
- C. Material Handling: Materials shall be handled, stored and installed per Manufacturer's instructions and all applicable safety regulatory requirements.
- D. Damaged Materials: Contaminated, damaged or unsealed materials, or materials not conforming to the specified requirements shall not be used in the installation. Rejected containers shall be immediately removed from the jobsite and replaced at no additional cost to the Owner.

**1.05 ENVIRONMENTAL CONDITIONS**

- A. Install all materials in strict accordance with Manufacturer’s published safety, weather and temperature precautions.
- B. Do not apply elastomeric acrylic coating system components when the ambient and/or surface temperature(s) is below 50°F (10°C) or above 110°F (43°C), 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 apply if any surface moisture is present, or if the wind velocity exceeds 10 mph (16 kph) without taking appropriate precautions.
- C. Take all measures necessary to protect unrelated work and other adjacent 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: During application of the elastomeric coating, the wet film thickness shall be measured and recorded daily, along with the quantity and batch numbers of the material applied, on the Daily Quality Control form.

**PART 2 – PRODUCTS**

**2.01 DESCRIPTION**

A seamless, fluid-applied acrylic membrane system designed for application over board-stock insulation board. Approved system shall be UNITED COATINGS’ **ROOF MATE Board-Stock Roof Coating System** consisting of **UNIBASE Fabric Adhesive and Basecoat, ROOF MATE Advanced Acrylic Elastomer Basecoat and Topcoat, Board-Stock Insulation, Insta-Stik or WALL-BOND 70/90, ROOF MATE BUTTER GRADE, ROOF MATE Mesh, ROOF MATE Fabric and ACRYSHEEN.**

**2.02 MATERIALS**

- A. Reinforcement Tape: **ROOF MATE Mesh**, stitchbonded polyester fabric, as supplied by Coating Manufacturer for use in reinforcing individual seams in the insulation board, vertical/horizontal interfaces and other detail areas.
- B. Reinforcement Mesh: **ROOF MATE FABRIC**, stitchbonded polyester fabric, as supplied by Coating Manufacturer for use in full fabric reinforcement of the insulation board surface.
- C. Fluid-Applied Reinforcement Mastic: **ROOF MATE Butter Grade**, single package acrylic, as supplied by Coating Manufacturer for use in reinforcing detail areas.
- D. Board-Stock Insulation: Isocyanurate or polystyrene board-stock insulation panels, as supplied or approved by Coating Manufacturer to provide additional thermal insulation.
- E. Insulation Fasteners or Adhesive: Fastener screws with washers or Insta-Stik, **WALL-BOND 70** or **WALL-BOND 90** (depending on substrate), as supplied by Coating Manufacturer to securely attach insulation panels to the roof.
- F. Fabric Adhesive and Basecoat: **UNIBASE**, penetrating acrylic elastomer, as supplied by Coating Manufacturer for use in embedding fabric and for basecoating of board-stock insulation.
- G. Fluid-Applied Elastomeric Finish: UNITED COATINGS’ **ROOF MATE** coating, as supplied by Coating Manufacturer to provide a seamless, weather-resistant membrane over the **UNIBASE** basecoat. Can also be used as its own basecoat for embedding fabric.
- H. Self-Cleaning Topcoat (optional): **ACRYSHEEN**, clear, semi-gloss advanced acrylic sealer, as supplied by Coatings Manufacturer for increased dirt release characteristics.

**2.03 PERFORMANCE REQUIREMENTS – FLUID-APPLIED ELASTOMERIC COATING**

Fluid-applied, advanced 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 and Factory Mutual. 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.

<b>Viscosity</b>	85 to 141 KU (ASTM D562) 12,000 - 85,000 cps (ASTM D2196)	<b>Fungi Resistance</b>	Zero Rating (ASTM G21)
<b>Volume Solids</b>	>50% (ASTM D2697)	<b>Permeance</b>	Maximum 50 perms (17.2 x 10 <sup>-10</sup> kg/s·m <sup>2</sup> ·Pa) (ASTM D1653)
<b>Weight Solids</b>	>60% (ASTM D1644)	<b>Water Swelling</b>	Maximum 20% (mass) (ASTM D471)
<b>Initial % Elongation (break)</b>	Minimum 100% @ 73°F (23°C) (ASTM D2370)	<b>Accelerated Weathering (1000 hours)</b>	No cracking/checking (ASTM D4798)
<b>Initial Tensile Strength (minimum stress)</b>	Minimum 200 psi (1.38 MPa) @ 73°F (23°C) (ASTM D2370)	<b>Adhesion</b>	Minimum 2.0 pli (350 N/m) (wet) 4.0 pli (700 N/m) (dry) (ASTM C794 or D903)
<b>Final % Elongation (break) after 1000 hours accelerated weathering</b>	Minimum 100% @ 73°F (23°C) (ASTM D2370)	<b>Tear Resistance</b>	>60 lbf/in. (21 kN/m) (ASTM D624)
		<b>Low Temp Flexibility after 1000 hours</b>	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 coatings, ceramic-filled coatings, asphalt modified materials, urethanes, silicones, Kraton-based rubbers, Hypalons and butyls are not considered acceptable substitutes for materials specified herein.

## **PART 3 – EXECUTION**

### 3.01 SURFACE INSPECTION

Inspect all roof surfaces to receive work specified under this section to ensure that the following conditions exist:

- A. Roof surfaces shall be clean, dry, structurally sound, stable and well secured. The roof surface shall be free of excessive ponding water. A roof surface that has water standing 48 hours after a rain shall be considered unacceptable. All water shall be allowed positive drainage from the roof.
- B. 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 detailed and coated.
- C. Determine moisture content of existing substrate, insulation and deck. A moisture content of 15% or greater indicates a potential problem and work shall not proceed until the cause is verified and the condition is corrected.

### 3.02 SURFACE PREPARATION

- A. All loose gravel, dirt and debris shall be removed by vacuuming and/or power sweeping. On heavily graveled areas, removal by spudding, scraping or scarifying may be necessary to smooth the surface prior to application of the board-stock insulation. Care shall be taken to preserve the integrity of the existing asphalt membrane whenever possible.
- B. Any unsound areas in the roof deck or insulation, including blisters, delamination, deterioration, excessive moisture content, etc., shall be repaired or replaced. All blisters, delaminations, wrinkles and loose areas shall either be cut away and removed or cut open and nailed flat to the deck.
- C. Either mechanically fasten or adhere the board-stock insulation to the roof deck, depending on the substrate. If mechanically fastening the insulation board, utilize fastener screws (with washer flanges) of an appropriate length so as to extend into the roof substructure. Space fasteners as recommended by insulation board manufacturer according to the size of the panel so that it is securely fastened to the deck. If using adhesive to secure the insulation to the substrate, utilize **Wall-Bond 70**, **Wall-Bond 90**, Insta-Stik adhesive or equivalent, depending on the substrate, to bond the panels.
- D. Roof deck areas shall have positive slope to drain. Taper the insulation panels around drains and scuppers, and add crickets or additional insulation as necessary to facilitate proper drainage of water from the roof.
- E. Reinforce areas around drains, scuppers, flashings and protrusions by liberally applying a minimum of 2 coats of **ROOF MATE Butter Grade**, using a brush or roller, to a total thickness of 60 to 80 mils (1,524 to 2,032 microns).
- F. All seams between sheets of insulation board must be reinforced using 4" (10 cm) **ROOF MATE Mesh** embedded into a strip-coat of **ROOF MATE Basecoat**, centered over the seam. While the material is still wet, embed a strip of 4" (10 cm) **ROOF MATE Mesh**, working it in with a brush or roller to eliminate air pockets, wrinkles and gaps. Apply additional material as necessary to totally encapsulate the reinforcing fabric.
- G. Severely deteriorated flashings shall be removed and either replaced or repaired.

### 3.03 ELASTOMERIC COATING APPLICATION

- A. All roof preparation materials shall be allowed to fully dry prior to full roof surface application of the advanced acrylic elastomeric coating system.
- 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** as previously described.
- D. Reinforce entire surface of the board-stock insulation panels by embedding 40" (102 cm) wide rolls of **Roof Mate Fabric** into **Unibase**. This is accomplished by applying **Unibase** 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. Roll out a 4' to 10' (1.2 to 2.5 m) section of fabric and either spray apply or pour **Unibase** evenly over the top side at the rate of approximately 2 gallons per 100 sq. ft. (.8 l/m<sup>2</sup>), allowing the fabric to conform to the surface contours. Work the **Unibase** evenly throughout the fabric using a roller or broom so that it is totally encapsulated, eliminating any air pockets, wrinkles or gaps. Coverage rate will depend on profile and texture of the substrate. 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. **ROOF MATE Basecoat** can also be use for encapsulating the reinforcement fabric, following the procedure described under Section 3.02 F above. Allow the **Unibase** or **ROOF MATE Basecoat** to dry thoroughly prior to applying the acrylic topcoat to the roof.
- E. The entire roof substrate shall receive the **ROOF MATE** advanced acrylic elastomer coating system applied as follows:

*Include the following paragraphs only if specifying a 5-Year Standard Warranty*

1. Apply **ROOF MATE** White (or other specified color) at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m<sup>2</sup>). Use multiple pass or cross-hatch application technique to ensure a uniform coverage rate, free from voids or pinholes.
2. The total – **Unibase**/top coat – minimum dry film thickness required at any location is 25 mils (635 microns).

***Include the following paragraphs only if specifying a 10-Year Standard or 5-Year System Warranty***

1. Apply **ROOF MATE Basecoat** Gray at a minimum rate of 1 gallon per 100 sq. ft. (.4 l/m<sup>2</sup>).
2. After allowing the base coat to dry, apply **ROOF MATE** White (or other specified color) at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m<sup>2</sup>). 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 – **Unibase**/base coat/top coat – minimum dry film thickness required at any location is 33 mils (838 microns).

***Include the following paragraphs if specifying a 15-Year Standard or 10-Year System Warranty***

1. Apply **ROOF MATE Basecoat** Gray at a minimum rate of 1.5 gallons per 100 sq. ft. (.6 l/m<sup>2</sup>).
2. After allowing the base coat to dry, apply two separate coats of **ROOF MATE** White (or other specified color) at a minimum rate of 1 gallon per 100 sq. ft. (.4 l/m<sup>2</sup>) each, allowing adequate dry time between coats. 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 – **Unibase**/base coat/top coats – minimum dry film thickness required at any location is 40 mils (1,016 microns).

***Include the following paragraphs only if specifying a 15-Year System Warranty***

1. Apply two separate coats of **ROOF MATE Basecoat** Gray at a minimum rate of 1 gallon per 100 sq. ft. (.4 l/m<sup>2</sup>) each, allowing adequate dry time between coats.
  2. After allowing the base coats 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/m<sup>2</sup>) each, allowing adequate dry time between coats. 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 – **Unibase**/base coats/top coats – minimum dry film thickness required at any location is 48 mils (1,219 microns).
- 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. As an option on roofs located in industrial areas and/or subjected to high levels of pollutants, dirt, dust or other contamination, apply a coat of UNITED COATINGS' **Acrysheen** at the rate of 200 to 250 sq. ft. per gallon (4.8 to 6.1 m<sup>2</sup>/l). **Acrysheen** imparts a slick, semi-gloss finish that aids in maintaining a clean surface.
- H. To provide a non-skid walk path on roofs subject to heavy foot traffic, demarcate walkways by applying an additional coat of **ROOF MATE**, using a medium-nap roller or airless spray, at the rate of 1 gallon per 100 sq. ft. (.4 l/m<sup>2</sup>) along the designated traffic area. While the coating is still wet, broadcast 3M #11 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 **Wall-Bond** or walk pads such as "Yellow Spaghetti".

**3.04 CLEANUP**

- A. Maintain work and work areas in a clean, safe working order at all times during reroofing 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.



\*Subject to the conditions of Approval as a protective roof coating for use in Class 1 roof construction as described in the current edition of the FMRC Approval Guide\*

