

*This document is intended to provide guidelines for the proper specification and application of Acrymax Coating Systems and Acrymax materials as furnished by Acrymax Technologies Inc. These guidelines are not project specific and should be modified as required to meet the needs of particular projects. It is the responsibility of the owner, specifier, and/or applicator to ensure that these guidelines, if used, are consistent with the requirements of the project.*

## **Guideline Specification ACRYMAX ARS-1-FR**

### **FM Approved Reinforced Composite Elastomeric Membrane System for Asphalt Roofs 075600 Fluid-Applied Roofing**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. Provide labor and materials necessary to install a fluid applied fully reinforced elastomeric composite roof membrane system.
- B. Section(s) related to this section may include:
  - 1. Built-up Roofing Division 07 – Section 075100
  - 2. Modified Bituminous Membrane Roofing Division 07 – Section 075200
  - 3. Roll Roofing Division 07 – Section 075800
  - 4. Flashing and Sheet Metal Division 07 - Section 076000
  - 5. Joint Protection Division 07 - Section 079000
  - 6. Painting and Coating Division 09 - Section 099000

##### **1.02 REFERENCES**

- A. Factory Mutual Approval Guide – Current edition
- B. American Society for Testing and Materials (ASTM) Annual Book of ASTM Standards.
  - 1. D 6083 Standard Specification for Liquid Applied Acrylic Coating Used in Roofing.
  - 2. Volume 04.04 Roofing and Waterproofing
  - 3. Volume 06.01 Paint- Tests for Chemical, Physical, and Optical Properties; Appearance.
- C. National Roofing Contractors Association (NRCA)
  - 1. Roofing and Waterproofing Manual (Current Edition)

##### **1.03 SYSTEM DESCRIPTION**

- A. The ARS-1-FR System is an FM Approved fully reinforced composite membrane system designed for weatherproofing and recovery of asphalt roof surfaces including smooth BUR, modified bitumen, granulated roll roofing and other acceptable substrates. Coatings to be used in the membrane system shall meet or exceed all minimum testing requirements listed in ASTM D-6083 Standard Specification for Liquid Applied Acrylic Coatings Used in Roofing.

##### **1.04 SUBMITTALS**

- A. Submit Acrymax product data sheets and installation instructions.
- B. Verify field measurements and submit materials list, including quantities to be used to achieve specified membrane thickness.
- C. Submit 2 year applicator warranty against leaks caused by defects in workmanship. Warranty shall be signed by an authorized representative of the applicator.
- D. Submit sample copy of Acrymax warranty.
- E. Submit *Acrymax Application for Warranty Form* indicating acceptance of project for warranty by authorized representative of Acrymax.
- F. Submit Material Safety Data Sheets (MSDS) for all coating products to be used.
- G. Submit manufacturers standard color chart, or if special colors, prepare and submit representative samples of each color specified.
- H. Submit copy of Approved Applicator Certificate and/or letter indicating applicator approval

- issued by manufacturer of coating system.
- I. Submit applicator's completed project reference list.

#### **1.05 QUALITY ASSURANCE**

- A. Applicator Qualifications: Applicator shall have proven experience in the installation of work similar to that required for this project.
  1. Manufacturer's certification of applicator approval is required.
- B. Manufacturer Qualifications: The manufacturer shall have manufactured elastomeric coatings for a minimum of 20 years and shall provide reference list of successful applications.
- C. All details must be installed in conformance with Acrymax Technologies specifications and detail drawings. For conditions not addressed by Acrymax Technologies or these specifications, the reference guides for application and detailing shall be the National Roof Contractors Association - Roofing & Waterproofing Manual - Current Edition.
- D. Inspections by an authorized representative of Acrymax may be required for warranty. Inspection shall not replace the normal responsibilities of the contracting parties. Request for inspections, must be forwarded, along with a roof plan, to Acrymax Technologies prior to start of the project.
- E. Provide all primers, coatings, fabric and accessories as manufactured and/or approved in writing by Acrymax Technologies.
- F. *Acrymax Applicators Daily Log* providing project information and describing weather conditions at times of application of system must be kept by project foreman. This log shall be forwarded to Acrymax upon completion of application.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Furnish Acrymax Coating system materials and component accessories in manufacturer's original containers clearly indicating the Acrymax label and other identifying information including batch number and manufacturing date.
- B. Store materials in a dry location, protected until installation in accordance with Acrymax instructions.
- C. Protect materials against freezing. Store materials between 40°F and 100°F. Protect from extreme heat. Do not store in direct sunlight.

#### **1.07 PROJECT CONDITIONS**

- A. Substrate: Prior to starting coating system installation work, complete all work necessary to provide suitable surface for application of the Acrymax system. Substrate shall be smooth, dry, and free of debris. Wet insulation must be removed and replaced or addressed with other measures as required. Consult with an Acrymax technical service representative regarding the need for moisture surveys or other assessments.
- B. The material requirements specified herein are for typical conditions. The number of gallons required may need to be increased to account for uneven application, applicator inefficiencies, surface texture, or other conditions. In all events minimum dry film thickness must be achieved.
- C. Install drains or take other corrective action to correct or prevent excess ponding water.

#### **1.08 ENVIRONMENTAL CONDITIONS**

- A. It is the responsibility of the applicator to determine if present and forecast weather conditions are acceptable for application of Acrymax coatings.
- B. Do not apply Acrymax coatings when rain, fog, snow, or freezing temperatures are possible within 24 hours or before coating can dry.
- C. Do not apply coatings when the temperature of surfaces to be coated and/or surrounding air temperatures are less than 50°F.
- D. During extremely hot conditions do not apply coatings, or apply coatings in thinner applications to prevent blistering. Additional coats will be required to achieve specified dry film thickness.
- E. Do not apply Acrymax coatings when temperatures are within 5°F of the dew point or when dew point can be reached before the coatings have sufficiently dried or cured. Special consideration must be given during spring and autumn when rapid temperature changes near sunset can occur. Shortened workdays may be required.
- F. Allow wet surfaces to dry thoroughly and to attain temperature and conditions specified before proceeding with or continuing coating operation.

- G. Wind conditions and the potential for overspray must be considered during application of coatings to avoid damage to adjacent surfaces or completed work.

**1.09 SAFETY REQUIREMENTS**

- A. Users must familiarize themselves with appropriate Material Safety Data Sheets (MSDS). MSDS must be kept and made available at all worksites where materials are being used.
- B. Materials shall be applied in accordance with all applicable local, state, and federal regulations.
- C. A respirator should be used when spraying Acrymax coatings to protect applicators from overspray particles.
- D. When applying reflective white or light color coatings to a roof, sunglasses should be used to protect eyes from glare.
- E. Handle on pails should not be used to hoist pail from ground to roof.
- F. Translucent light panels should be clearly marked and safely protected from foot traffic.
- G. All work shall be performed in conformance with the safety procedures outlined in the current FALL PROTECTION GUIDE as published by the Occupational Safety and Health Administration (OSHA).
- H. If hazardous materials such as lead paint or asbestos are encountered notify appropriate personnel and comply with all applicable local, state, and federal regulations.

**1.10 WORK SEQUENCE**

- A. Sequence of installation is at the Applicator's discretion providing it does not disrupt operations or activities of the occupants of the building.
- B. Schedule and execute work to prevent leaking.

**1.11 WARRANTY**

- A. Warranty shall be material warranty only unless specified otherwise.  
*(Consult with Acrymax about specific Acrymax warranty requirements and conditions. System warranties require pre-approval from Acrymax.)*
- B. Furnish contractor warranty with minimum 2 year coverage. The occurrence of leaks caused by defects in workmanship during the covered period will be remedied at no cost to the building owner according to provisions of the contractor warranty.

**PART 2 - PRODUCTS**

**2.01 FLUID APPLIED FULLY REINFORCED MEMBRANE SYSTEM**

- A. Manufacturer: Acrymax Technologies Inc. 221 Brooke Street
  - 1. 221 Brooke Street; Media, PA 19063; Telephone (610) 566-7470, FAX (610) 891-0834; email info@acrymax.com; website http://www.acrymax.com
- B. Substitutions: Substitutions if allowed must be approved by specifier before submission of bids.

**2.02 MATERIALS**

- A. Acrymax ARS-1-FR System shall include but not be limited to:
  - 1. AF-130FR Elastomeric Coating
  - 2. Poly-1 Reinforcement Fabric
- B. Acrymax Minimum Material Properties
  - 1. Elastomeric Coatings - Elastomeric coatings shall be water-dispersed 100% acrylic elastomeric coatings. Materials shall exhibit the following properties:
    - a. Liquid Coating Property Requirements

	<b>AF-130FR</b>	<b>ASTM</b>
Weight Per Gallon	12.1 +/- .3 lbs	D1475
Solids by Weight	66.9 +/- 2.0	D1644
Solids by Volume	51.9 +/- .5	D2697
Viscosity	95 – 115 kU	D562

b. Cured Film Typical Physical Properties

	<b>AF-130FR</b>	<b>ASTM</b>
Low Temp. Flexibility	Pass @ -15° F	D522
Elongation at break	220% @ 74° F	D2370
	80% @ 0° F	D2370
Tensile strength at break	300 psi @ 74° F	D2370
	1065 psi @ 0° F	D2370
Permeance	<20 perms	D1653
Accelerated weathering	No effect	D4798
Fungi Resistance	Zero rating	G21

2. Reinforcement Fabric – Stitchbonded polyester for use in cold fluid applied roof membranes that shall provide high strength and good elongation.

a. Poly-1 Fabric (Average typical properties)

	Average	ASTM Standard
Tensile strength	57.1	D-1682
Elongation	61.65%	D-1682

### 2.03 APPLICATION EQUIPMENT

- A. Acrymax coatings shall be applied by brush, roller, or spray. When applied by spray it is recommended that airless spray be used. Application by roller or brush may require additional coats, but material requirements will generally remain the same. In all cases, the specified minimum membrane thickness must be achieved.

### 2.04 RELATED MATERIALS

- A. Primer  
 1. Acrymax AF-127 Primer-Sealer  
 2. Acrymax AF-9000 Acrylic Modified Asphalt Emulsion
- B. Sealant  
 1. Polyurethane  
 2. Acrylic
- C. Polyurethane Foam  
 1. Expanding polyurethane foam of a type suitable for roofing applications.

## PART 3 - EXECUTION

### 3.01 MANUFACTURERS INSTRUCTIONS

- A. Compliance: Comply with manufacturer’s product data, technical bulletins, recommendations, MSDS, and installation instructions.

### 3.02 EXAMINATION

- A. Examine the substrate, flashing conditions, penetrations, equipment supports, curbs, adjoining construction and the conditions under which the work is to be installed. Do not proceed until all unsatisfactory conditions have been corrected and substrate is acceptable. Applicator shall be responsible for providing a proper substrate to receive the Acrymax coating system.
- B. Verify that all roof drains are clear and in working condition.
- C. Verify that all air intake equipment and air conditioning units are closed or protected during application of coatings.

### 3.03 PREPARATION

- A. Surfaces to be coated must be sound and free of any contaminants that would interfere with

- proper adhesion of coatings. Powerwashing at minimum 2500 psi is required. Powerbrooming or other suitable methods should also be used as necessary.
- B. Substrate: Prior to starting coating system installation work, complete all substrate corrective actions required, including, but not limited to; removal of obsolete roof top equipment or roof penetrations, replacement or repair of damaged roof decking, replacement of loose fasteners, removal and replacement of wet insulation, or completion of any other repairs necessary to provide a sound substrate. Substrate shall be smooth, dry, and free of debris.
  - C. Large blisters in existing membrane must be cut and made level with the roof surface. After making level, reinforce repaired area with Poly-1 Reinforcing Fabric embedded in and saturated with Acrymax AF-130FR.
  - D. Patch cracks, voids, etc with suitable filler. Polyurethane foam may be used if made flush with surface.
  - E. Heavily alligatored asphalt surfaces should be precoated with AF-9000 Acrylic Modified Asphalt Emulsion prior to application of the ARS-1-FR Membrane System.
  - F. Elongated or fatigue cracks in the existing membrane surface must be reinforced with 6" width Poly-1 Reinforcing Fabric embedded in and saturated with Acrymax AF-130FR.

### 3.04 INSTALLATION

- A. Following inspection and acceptance of substrate condition, install the Acrymax ARS-1-FR Reinforced Roof Membrane System using minimum coverage's indicated in the manufacturer's guidelines. Adherence to guidelines will yield an average membrane thickness of 45 mils dry film thickness (dft) and a minimum of 42 mils.
- B. **Primer** – If necessary, AF-127 primer shall be used over asphaltic surfaces including modified bitumen. AF-127 Primer shall be used on all granulated surfaces. Primer shall act to promote adhesion to oxidized asphalt surfaces and to provide a barrier to asphalt fractions. Use of primer is not a substitute for proper cleaning of surfaces to receive coatings.
- C. **Basecoat & Reinforcement** - Apply reinforcement fabric and basecoat to field of roof:
  - 1. Apply tack coat of AF-130FR at minimum rate of 1.5 gallons per 100 square feet to surface. Immediately embed POLY-1 Polyester Reinforcement into wet coating allowing fabric to contour to roof surface. Care must be taken to avoid air pockets, wrinkles, "fishmouths", or gaps. Extra care must be taken to ensure that fabric edges are completely saturated and fully adhered. Roller, brush, or soft broom shall be used to insure that Poly-1 is fully embedded into wet coating.
  - 2. Roller, brush, or soft broom shall be used to insure that Poly-1 is fully embedded into wet coating.
  - 3. After embedding POLY-1 into wet coating apply a saturating coat of AF-130FR, at a minimum rate of 1.5 gallons per 100 sq. ft. making sure fabric is completely saturated and flush to the surface to which it has been applied.
  - 4. Total AF-130FR to embed and saturate reinforcing fabric shall be not less than 3 gallons per 100 square feet of reinforcement.
  - 5. Each successive run of fabric reinforcement shall be overlapped a minimum of 3".
  - 6. Achieve a 25 mil base membrane thickness.
- D. Apply flashings at roof penetrations, transitions, perimeters and detail work:
  - 1. All flashings must be completed before application of AF-130FR Finish Coatings.
  - 2. Apply heavy coat of AF-130FR to the area to be flashed, and embed Poly-1 Reinforcement Fabric into wet coating.
  - 3. Brush shall be used to insure that Poly-1 is fully embedded.
  - 4. Apply additional coating to the top of fabric taking care to completely saturate fabric and provide a weatherproof seal.
  - 5. Total AF-130FR to embed and saturate reinforcing fabric shall be not less than 3 gallons per 100 square feet of reinforcement.
- E. **Intermediate Coat** - Apply intermediate coat of AF-130FR to entire area previously covered with reinforcement including field of roof, penetrations, and perimeter locations. A minimum of 1.0 gallon of AF-130FR per 100 sq. ft. is required. Apply in color that will provide contrast to basecoat and finish coat.
- F. **Finish Coat** - Apply finish coat of AF-130FR in specified color to entire area previously coated. A minimum of 1.0 gallon of AF-130FR per 100 sq. ft. is required. Application of finish coating should be done at right angles to the previous coat in a "cross-hatch" pattern.

- G. Total average membrane thickness shall be 45 mils. Minimum thickness shall be 42 mils.
- H. If necessary apply additional AF-130FR, where required, to insure that specified membrane thickness is achieved. Applicator shall achieve proper membrane thickness according to specification.
- I. Edges of coating application shall be done in an aesthetically acceptable manner.

### **3.05 FIELD QUALITY REQUIREMENTS**

- A. At the start of the installation, periodically as work progresses, and upon final completion provide the services of an Acrymax technical representative at the job site as necessary.
- B. Verify final minimum film thickness as specified. If specified dry film thickness has not been achieved, application of additional coating will be required.
- C. Visually inspect critical areas of the roof including roof transitions, seams and penetrations and touch up with additional Acrymax coatings to insure complete and adequate coverage.
- D. Manufacturer reserves the right to perform post installation testing for conformance to specification. Any areas that do not meet the minimum standards for application of the ARS-1-FR System as specified herein shall be corrected at the applicator's expense. Manufacturer's inspection shall not constitute acceptance of responsibility for any improper application of materials.

### **3.06 PROTECTION & CLEANING**

- A. Surfaces not intended to receive the Acrymax system should be protected with temporary protection measures during application of the system. At end of project remove this temporary protection and if it has not been effective then all damaged or soiled surfaces must be cleaned, repaired, or replaced to the satisfaction of architect or building owner.
- B. Remove waste, surplus materials and debris resulting from application of the coating system.
- C. Protect completed membrane from damage. Schedule sequence of work so that traffic over new membrane is minimized. Institute required procedures for protection of completed membrane during installation of work by other trades throughout construction period. If damage occurs touch-up and restore damaged or defaced coated surfaces to make acceptable to the specifier, building owner, or manufacturer.

END OF SECTION