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# **ARS-1FR**

## **REINFORCED ELASTOMERIC MEMBRANE SYSTEM**

### **for ASPHALT ROOFS**

## **APPLICATION GUIDE**

### **1. DESCRIPTION**

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The Acrymax ARS-1FR Elastomeric Roof System is a fluid applied reinforced elastomeric membrane system for weatherproofing smooth and granulated surface asphalt substrates including existing BUR and Modified Bitumen roofs. Combining multiple coats of Acrymax AF-130FR Coatings with high strength polyester reinforcement the ARS-1FR system cures to a durable, weatherproof, fully reinforced, and fully adhered elastomeric membrane. The ARS-1FR System once applied provides the basis for a sustainable roof system that is easily maintained. The long-term cost benefits offered by this state-of-the-art technology include lower life cycle costs and energy savings. Acrymax coatings are waterborne materials that are VOC compliant and exceed all regulatory requirements. They offer an environmentally responsible method for roofing and weatherproofing applications. The ARS-1FR system when applied properly will yield a *minimum* final membrane thickness of 40 mils and an average membrane thickness of 45 mils as described herein. FM approved for use on existing asphalt roofs when applied according to specification.

### **2. MATERIALS**

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The materials used in the ARS-1FR System may include AF-130FR Fire-retardant roof coating, Poly-1 Polyester Reinforcement Fabric, AF-127 Sealer-Primer, and AF-9000 Acrylic Modified Asphalt Emulsion.

### **3. APPLICATION EQUIPMENT**

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Acrymax AF-130FR Coatings can be applied by brush, roller, or spray. Airless spray is the most efficient method of application where proper conditions and expertise exist. Suggested spray equipment should be capable of 2500 – 3000 psi with output of 2 - 2.5 gallons per minute. Tip size .027 to .041. Application by roller or brush may require additional coats to achieve uniform membrane thickness, but material requirements will remain the same. Rollers should be medium or long nap.

### **4. INSTALLATION**

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Installation of the ARS-1FR System is accomplished in five (5) basic steps: (a) Preparation, (b) Repair, (c) Application of Poly-1 Reinforcement with AF-130FR, (d) Application of AF-130FR Finish Coats, and (e) Inspection

#### **(a) Preparation**

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Acrymax AF-130FR coatings must have a clean surface to adhere to. Proper surface preparation is the key to successful applications. All dirt, debris, oils etc. must be removed by the most effective method possible. High-pressure water (2000 psi minimum) is the preferred method. Vacuuming, stiff brooming, and low-pressure water washing can also be used. When high-pressure water washing is used it should be done at a pressure suitable to remove embedded dirt and contaminants without damaging the substrate that is being cleaned and care must also be taken to make sure that water

does not intrude into the building or the existing roofing system. When pressure washing is not done and on oxidized asphalt roofs use of AF-127 or an appropriate primer should be considered (*consult Acrymax*). Priming is not a substitute for proper cleaning. Roofs that have been previously coated with aluminized asphalt coatings must be prepared vigorously to insure a stable surface for coatings to adhere to. Priming with AF-127 or an asphalt primer may be necessary. On alligatored asphalt roof surfaces a coat of AF-9000 Acrylic Modified Asphalt Emulsion should be used as necessary as a filler coat prior to application of the ARS-1FR System. Application rates for AF-9000 can range from 1-6 gallons per 100 square feet depending on severity of alligatoring. Granulated surfaces should be primed with AF-127 Primer at the rate of 1 gallon per 250 square feet.

A tape test should be used to determine acceptability of cleaned surface for coating application. This is done by applying masking tape to the surface to be coated, and then peeling off the tape. If the adhesive side of the tape shows contaminants that will interfere with the adhesion of the coatings, then further cleaning or use of a primer may be necessary.

### ***(b) Repair***

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Acrymax coatings should not be applied over roofing, insulation, or related materials that are saturated with moisture. All necessary repairs must be done according to good construction practices. For applications over existing roof systems a complete inspection must be made, including core cuts and moisture detection scans where necessary, to determine where excess moisture exists. Any wet insulation must be replaced with new materials of equal thickness. Acrymax AF-130FR should be used with Poly-1 polyester reinforcement fabric in appropriate widths to repair and reinforce all defects, cracks, or other areas requiring reinforcement. Acrymax AF-136 Patching Compound or Asphalt roof cement should be used to fill all cracks as necessary.

### ***(c) Application of Poly-1 Reinforcement with AF-130FR***

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Before application of coatings verify that the surface to be coated is cleaned and prepared properly. At any time during application of the Acrymax system if roof surface becomes contaminated with dirt, dust or other materials that will interfere with adhesion of the coatings then cleaning measures must be taken to restore the surface to a suitable condition. Dust should be blown off of surfaces to be coated with compressed air or blowers before application of coatings. All required materials must be applied and minimum dry film thickness achieved.

#### **Applying Poly-1 to field of surface to be covered**

1. Determine where 1<sup>st</sup> run of POLY-1 fabric will be started. On sloped roof surfaces the 1<sup>st</sup> run of fabric should be run parallel to the low edge of the roof with subsequent runs applied using shingling method, overlapping the previous run a minimum of 3". A chalk line can be used to guide the 1<sup>st</sup> run while subsequent runs will be lined up with previous runs using the 3" overlap line that is imprinted on 40" Poly-1 fabric roll.
2. After positioning fabric to roll out, apply tack coat of Acrymax AF-130FR to surface where POLY-1 is going to be applied. Do not apply AF-130FR too far ahead of fabric or coating may dry before fabric can be embedded. The minimum application rate should be 1 to 1.5 gallons per 100 square feet. Immediately roll 40" width POLY-1 Polyester Reinforcement into wet coating. Care should be taken to lay the fabric tight to the roof surface without air pockets, wrinkles, fishmouths, etc. A soft bristle push broom or brush can be used to smooth out the fabric.
3. After embedding Poly-1 Reinforcement into tack coat of AF-130FR, apply additional Acrymax AF-130FR to completely saturate the fabric at minimum application rate of 1.5 - 2 gallons per 100 square feet. This saturation coat should be applied as soon as possible after embedding Poly-1 into the tack coat. Allow to dry for a minimum of 24 hours before applying finish coats.
4. Total AF-130FR used to embed and saturate the Poly-1 should be a minimum of 3 gallons per 100 square feet.
5. Apply each successive run of fabric as per above and overlapping each run of the Poly-1 fabric a minimum of 3". The Poly-1 Fabric is lined for this purpose.

**Flashings, penetrations, transitions, and other detail areas requiring reinforcement**

All flashings, penetrations, transitions, and other detail areas requiring reinforcement should be completed with Poly-1 and Acrymax AF-130FR in the following manner:

1. Apply heavy coat of AF-130FR to area to be covered.
2. Embed appropriate width Poly-1 polyester fabric into this wet coat of AF-130FR. Apply without wrinkles, air pockets, or fishmouths. Poly-1 Fabric is available in 4", 6", 12", 18", and 40" widths.
3. Apply additional Acrymax AF-130FR to completely saturate fabric. Total AF-130FR used to embed and saturate Poly-1 should be 3 gallons per 100 square feet.

Estimated Acrymax AF-130FR per 100 linear feet required to apply Poly-1 Fabric Reinforcement on flashings, transitions, seams or penetrations:

4" width 1.0 gallons	6" width 1.5 gallons	12" width 3.0 gallons	18" width 4.5 gallons
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**Note:** The estimated material requirements are for materials that are required to apply tack coat used to embed Poly-1 and to provide first saturating coat of Acrymax. During application of liquid applied elastomeric membrane the seams and detail areas that have been reinforced with Poly-1 must be thoroughly coated with Acrymax coatings to provide a completely watertight seal. Special attention should be given to insure complete and adequate coverage at these critical areas.

**(d) Application of AF-130FR Finish Coats**

Apply Acrymax AF-130FR Finish Coats (two coats minimum) in the color desired. Contrasting colors should be used for each coat. White is the suggested finish color for energy efficiency and reduced thermal stress on the roof.

1. Apply 1<sup>st</sup> coat of Acrymax AF-130FR in a uniform manner at minimum application rate of 1 gallon per 100 square feet. Allow to dry a minimum of 2 to 4 hours.
2. Apply 2<sup>nd</sup> coat of Acrymax AF-130FR in a uniform manner at minimum application rate of 1 gallon per 100 square feet. The 2<sup>nd</sup> coat of Acrymax AF-130FR should be applied in perpendicular direction to the 1<sup>st</sup> coat (*crosshatch method*).

**Notes:** During final application of the Acrymax finish coats special attention should be given to coating flashings and other critical areas to build adequate membrane thickness. When applied by roller it may be difficult to get a uniform finish coating thickness. Sometimes it can be best when applying by roller to apply three (3) coats of the Acrymax AF-130FR Finish Coat at the rate of approximately .75 gallons per 100 square feet. In any event all specified material must be applied and minimum membrane thickness achieved.

**(e) Inspection**

Inspect entire roof area and touch-up deficient areas with additional Acrymax AF-130FR as necessary to insure complete and uniform coverage. Special attention should be given to critical areas of roof, including roof penetrations, transitions, flashings, etc.

**5. LIMITATIONS**

These are general guidelines for application of the Acrymax ARS-1FR System. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact Acrymax Technical Service at 610-566-7470. Acrymax Fluid Applied Elastomeric roofing systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. The suitability of Acrymax coatings or systems for an intended use shall be solely up to the user. Drying time and coverage are not guaranteed. Acrymax roofing systems must not be applied over wet insulation or related materials. Failure of the substrate does not

constitute failure of the Acrymax coating or system. Acrymax systems are designed for use on well drained roofs, however, it is acceptable for use where poor drainage causes temporary ponding. Acrymax Coatings should not be applied when rain or freezing temperatures are expected before coating is dry.

## **6. WARRANTY**

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Acrymax offers limited material warranties for the ARS-1FR System when all materials are used in strict accordance with all of Acrymax's written requirements and recommendations and required dry film thicknesses are achieved. Acrymax's sole responsibility under this limited material warranty is for defective material and Acrymax's obligation shall not exceed the purchase price of the Acrymax materials used or part thereof proven to be defective. Submittal of required documentation is required for warranty. Consult Acrymax for details. This warranty gives specific legal rights and you may have other legal rights that vary from state to state. No statement by anyone may supersede this limited material warranty, except when done in writing by Acrymax's Technical Service Office in Media, PA. Specific jobs that meet certain requirements, are pre-approved by Acrymax, and are applied by an Acrymax approved applicator may qualify for system warranties covering labor and material. (Consult Acrymax)

### **NOTES:**

1. Acrymax coatings are waterborne. Consequently application of these materials must not be done when rain or other conditions such as fog or heavy dew are possible before coating can dry sufficiently to be resistant to these occurrences. Drying time is affected by numerous factors including temperature, direct sunlight, relative humidity, air movement, thickness and color of applied coating, etc... Under proper conditions dry times for coatings will be from 2 to 4 hours, but under adverse conditions dry times can range to 12 hours or more. Application should not be done when temperatures are below 45°F or expected to drop below freezing before coating is dry. Special attention should be given to the dew point temperature because when this temperature is reached and dew forms the drying process of the coatings will cease.
2. Surfaces must always be clean before application of AF-130FR Coatings. Care must be taken to insure that on-site manufacturing emissions or extended time intervals after original cleaning do not interfere with any stage of the coating applications. If either condition occurs then cleaning may be required again.
3. Adequate coating thickness is essential to performance. If the applicator is unfamiliar in gauging application rates, we suggest that a controllable area be measured and the specified material be applied. In all cases all minimum specified material must be applied and proper minimum dry film thicknesses must be achieved. Care must be taken to insure that all areas completed including all flashings, roof penetrations, etc. are coated sufficiently to insure a watertight seal.
4. Consult ACRYMAX TECHNOLOGIES if any deviations from published specifications are considered. Unapproved deviations from application guidelines and specified material requirements may seriously affect the coating system performance, and shall be undertaken at the specifier's, applicator's or building owner's own risk.
5. Applicator must comply with all applicable local, state, and federal regulations if lead based paint or other hazardous materials are encountered.
6. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.

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