



## **ACRYLIC COATINGS**

### *Guideline Specification*

#### **SECTION 07560 (Fluid Applied Roofing)**

#### **ACRYLABS 2002-PR20HT Partially Reinforced Elastomeric System for Metal Roofs**

#### **PART 1 – GENERAL**

##### **1.01 SUMMARY**

- A. Summary Includes: This summary includes a fluid applied partially reinforced elastomeric composite membrane system. It is designed for weatherproofing and protection of existing metal roofs.
- B. Section Includes: Partially reinforced elastomeric membrane system, complete with surface preparation, with all flashing and other related work require to perform a complete installation of the Acrylabs, Inc. system. This system will yield a 20-mil membrane throughout the field of the roof, and a 45-50mil membrane at the reinforced areas.

##### **1.02 REFERENCES**

- A. American Society for Testing and Materials (ASTM) 1998 Annual Book of ASTM Standards.
  - 1. Designation : D 6083-97a Standard Specification for Liquid Applied Acrylic Coating Used in Roofing.
  - 2. Volume 06.01 Paint- Tests for Chemical, Physical, and Optical Properties; Appearance.
- B. National Roofing Contractors Association (NRCA)
  - 1. Roofing and Waterproofing Manual (4th Edition)
- C. Sheet Metal and Air Conditioning National Contractors Association (SMACNA)
  - 1. Architectural Sheet Metal Manual 5th Edition 1993
- D. Society for Protective Coatings (SSPC)
  - 1. Steel Structures Painting Manual, Volume 2, Systems and Specifications 1995

### 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements:
  - 1. Provide fluid applied partially reinforced elastomeric composite membrane system to maintain manufacturers performance criteria without defects, damage, failure, or infiltration of water.
  - 2. 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. Product Data: Provide written technical information and installation instruction from Acrylabs, Inc. which demonstrate that materials to be installed comply with contract documents.
- B. Submit shop drawings indicating details showing treatment of transitions, edges, closures, penetrations, etc.
- C. Verify field measurements and submit materials list, including quantities, to be applied to achieve specified membrane thickness. Provide corrugation factor. Provide number and length of seams to be reinforced.
- D. Submit 2 year contractor warranty against leaks and/or defects in workmanship. Upon notification of any such defects, within the first 2 years, the contractor will make the necessary repairs. Warranty shall be signed by an authorized representative of the contractor.
- E. Submit written verification that the existing roof drain lines are reasonably free of obstruction prior to application of Acrylabs, Inc. products.
- G. Submit Acrylabs, Inc. standard Material Safety Data Sheets (MSDS) documents.

### 1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Applicator who has proven experience in the installation of work similar to that required for this project for a period of 5 years or more.
  - 1. Certificate: When requested, submit certificate indicating applicator qualifications.
  - 2. Completed project reference list: When requested, submit a list of three (3) projects of similar nature using products of the type specified herein. List shall include the following: Project name and location, size, cost, contact person and phone number.
- B. All details must be installed in conformance with the current Acrylabs, Inc. specifications and detail drawings. For conditions not addressed by Acrylabs, Inc. the reference guide for application and detailing shall be:

1. National Roof Contractors Association (NRCA) Manual, Third Edition.
  2. Sheet Metal and Air conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual 5th Edition 1993.
- C. Final inspection by an authorized representative of Acrylabs, Inc. is required for warranty. Final inspection shall not replace the normal responsibilities of the contracting parties. Request for final inspections, must be forwarded, along with a roof plan, to Acrylabs, Inc. upon substantial completion of the project. Any deviations from Acrylabs, Inc. specifications must be noted on the roof plan drawing.
- D. Provide all primers, base coats, fabric and accessories as manufactured and/or approved in writing by Acrylabs, Inc.

#### 1.06 DELIVERY, STORAGE AND HANDLING

- A. Furnish AcryLabs, Inc. coating system material and component accessories in manufacturer's original containers and/or wrapped bundles, clearly indicating the Acrylabs, Inc. label and other identifying information.
- B. Store materials separated from the ground and in a dry location, protected until installation in accordance with Acrylabs, Inc. instructions.
- C. Handle materials in accordance with Acrylabs, Inc, recommendations.
- D. Protect materials against freezing. Store materials between 50°F and 85°F.

#### 1.07 PROJECT CONDITIONS

- A. Acceptable Substrates: Acceptable substrates for the 2002-PR20HT System shall be one of the following: metal panel roofs, standing and soldered seam roofs and most single ply roof systems.
- B. Substrate: After the existing roof systems are cleaned and repaired, as required, but Prior to starting new coating system installation work, complete all substrate corrective installation actions required. Substrate shall be smooth, dry, and free of debris.

#### 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 Acrylabs, Inc. coatings.
- B. Do not apply Acrylabs, Inc. coatings when snow, rain, fog or freezing temperatures are possible within 24 hours after application.
- C. Do not apply coatings when the temperature of surfaces to be coated and/or surrounding air temperatures are less than 50° F.
- D. Do not apply Acrylabs, Inc. coatings when the dew point can be reached before the

coatings have sufficiently dried or cured. Special consideration must be given during spring and autumn applications for rapid temperature changes near sunset, shortened workdays may be required.

- E. Allow wet surfaces to dry thoroughly and to attain temperature and conditions specified before proceeding with or continuing coating operation.
- F. Wind conditions must be considered during application of products to avoid damage to adjacent surfaces or completed work. Provide for protection of other surfaces or do not spray apply coatings if overspray will be deposited on surfaces not intended to be coated.

#### 1.09 SAFETY REQUIREMENTS

- A. Users should familiarize themselves with appropriate Material Safety Data Sheets (MSDS). MSDS must be 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 Acrylabs, Inc. coatings to protect applicators from overspray particles.
- D. When applying reflective white coatings to a roof, sunglasses should be used to protect eyes from glare.
- E. Handle on pails should only be used to carry pail when on ground or roof and 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. Care should be taken to avoid overhead powerlines and arcing potential.

#### 1.10 WORK SEQUENCE

- A. Sequence of operations is at the Contractor's option providing it is arranged to maintain the building dry during the life of the Contract. Schedule and execute work to prevent leaking.
- B. The building shall be occupied. Do not disrupt activities in occupied spaces.

#### 1.11 WARRANTY

- A. Furnish specified Acrylabs, Inc. Warranty.

- B. Furnish contractor 2-year warranty. The conditions of the contractor warranty may vary; however the occurrence of leaks caused by defects in workmanship will be remedied at no cost to the building owner according to provisions of the contractor warranty.

PART 2 - PRODUCTS

2.01 FLUID APPLIED PARTIALLY REINFORCED MEMBRANE SYSTEM

- A. Manufacturer: Acrylabs, Inc. 730 Commercial Lane
  - 1. Contact: 730 Commercial Lane; Honey Brook, PA 19433  
Telephone (610) 273-1355; FAX (610) 273-1357  
email [CustomerService@acrylabs.com](mailto:CustomerService@acrylabs.com); website <http://www.acrylabs.com>
- B. Substitutions: None

2.02 MATERIALS

- A. Acrylabs 2002-PR20HT System shall include but not be limited to:
  - 1. Rust Inhibitive Primer Acrylabs, Inc. 3200
  - 2. Base Coat Acrylabs, Inc. 2100B
  - 3. HT Finish Coat Acrylabs, Inc. 2100HT
  - 4. Polyester Reinforcing Fabric Acrylabs, Inc. Mesh 2000
  - 5. Elastomeric Brush Grade Acrylabs, Inc. 2400
- B. Acrylabs, Inc. Minimum Material Properties
  - 1. Elastomeric Coatings – Elastomeric coatings shall be water-dispersed 100% acrylic elastomeric coatings designed for use in reinforced composite membrane systems. Materials shall meet the following minimum specifications:

***Liquid Property Requirements 2100B***

	<u>Minimum</u>	<u>ASTM</u>
Weight Per Gallon	12.0 lbs.	D-1475-90
Solids by Weight	>65%	D-2369-97
Solids by Volume	>50%	D-2697-86
Viscosity	95kU	D-562-01

***Liquid Property Requirements 2100HT***

	<u>Minimum</u>	<u>ASTM</u>
Weight Per Gallon	11.1 lbs.	D1475-90
Solids by Weight	>64%	D-2369-97
Solids by Volume	>51%	D-2697
Viscosity	95-110kU	D-562-01

***Cured Film Physical Property Requirements 2100B***

	<u>Minimum</u>	<u>ASTM Standard</u>
Low Temperature Flexibility @ -15°F	pass	C-734
Elongation at break @ 74°F	245%	D-412
@ 0°F	130%	
Tensile Strength at break @ 74°F	165psi	D-412
@ 0°F	660psi	
Permeability (20 mil film)	<20 perms	E-96-80
Accelerated weathering	2 years-no effect	G-53
Fungi Resistance	Zero rating	

***Cured Film Physical Property Requirements 2100HT***

	<u>Minimum</u>	<u>ASTM Standard</u>
Low Temperature Flexibility @ -30 °. F	pass	C-734
Elongation at break @ 74°F	460%	D-412
@ 0°F	100%	
Tensile Strength at break @ 74°F	670%	D-412
@ 0°F	2100%	
Permeability (20 mil film)	<20 perms	E-96-80
Accelerated weathering	2 years-no effect	G-53
Fungi Resistance	Zero rating	G-21

Cured Film shall also pass Rain Permeability testing according to ETP-1375, Mil-Std-810E, Method 506.3, Proc.III

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

*MESH 2000 Fabric (Average typical properties)*

	<u>Average</u>	<u>ASTM Standard</u>
Tensile strength	57.1	D-1682
Elongation	61.65%	D-1682

**2.03 APPLICATION EQUIPMENT**

- A. Acrylabs, Inc. 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 remain the same. In all cases,

the specified minimum membrane thickness must be achieved.

## 2.04 RELATED MATERIALS

- A. Metal Roof Panels
  - 1. New metal roof panels shall be as per requirements of project.
- B. Metal Flashing
  - 1. Gable end flashing, drip edge, gutters, counterflashings, copings, pipe collars, valleys, hip and ridge vents and caps as per requirements of project.
- C. Closures
  - 1. Neoprene or other compressible filler shaped to fill voids.
- D. Translucent Light Panel
  - 1. Fiberglass
  - 2. Wire Glass
  - 3. Resolite (TM)
- E. Mechanical Fasteners
  - 1. Type as required by project.
- F. Sealant (*Silicone sealants unacceptable*)
  - 1. Polyurethane
  - 2. Polysulfide
  - 3. Acrylic
- G. Polyurethane Foam
  - 1. Expanding polyurethane foam of a type suitable for roofing applications.

## PART 3 - EXECUTION

### 3.01 MANUFACTURERS INSTRUCTIONS

- A. Compliance: Comply with Acrylabs, Inc. product data, recommendations, and installation instructions for substrate verification, preparation requirements, and installation.

### 3.02 EXAMINATION OF SURFACE

- A. Examine the substrates, flashing conditions, penetrations, equipment supports, curbs, adjoining construction and the conditions under which the Work is to be installed. Do not proceed with the Work until unsatisfactory conditions have been corrected
- B. Applicator shall be responsible for providing a proper substrate to receive the Acrylabs, Inc. roofing system.
- C. Verify that substrate is dry and free of oil, grease, dust, rust, or other contaminant.

- D. Defects in substrate shall be noted and work shall not proceed until such defects have been corrected.

### 3.03 PREPARATION

- A. Do not proceed with installation until projections through the Acrylabs, Inc. membrane such as piping, drains, conduit, vents and ducts have been installed. Holes, open panel ends and voids under "non venting" ridge caps shall be patched or filled and finished flush in accordance with Acrylabs, Inc. instructions.
- B. Substrate: Prior to starting new coating system installation work, complete all substrate corrective installation actions required. Substrate shall be smooth, dry, and free of debris.
- C. Rust or loose coatings, if present, must be removed by the most appropriate method. Sand blasting, power washing, or power wire brushing may be used.
  - 1. Surface preparation must conform to one or more of the following:
    - a. SSPC-SP1 Solvent Cleaning
    - b. SSPC-SP2 Hand Tool Cleaning
    - c. SSPC-SP3 Power Tool cleaning
    - d. SSPC-SP6/NACE3 Commercial Blast Cleaning
    - e. SSPC-SP7/NACE4 Brush Off Cleaning
    - f. SSPC-SP11 Power Tool Cleaning To Bare Metal
- D. Areas where rust has been removed must be primed with 3200 Rust Inhibitive Primer 3200 can be used to prime entire roof areas or used as a spot primer. Consult Acrylabs, Inc. for complete information on treatment of rusted metal.
- E. The roof must be completely free of dust, dirt, oil, debris, or other contaminants before application of Acrylabs, Inc. coatings or sealants. If any contaminants are found, they must be removed by appropriate means.
- E. Replace loose, rusted, and corroded fasteners using appropriate fastener for the project.
- F. Apply 2400 Acrylabs, Inc. Brush Grade Mastic at fastener heads, small cracks, roof penetration transitions and other locations where high build material is required or desirable for a watertight seal.
- G. Complete all work above roof as required by other trades.

### 3.04 INSTALLATION

- A. Following inspection and acceptance of substrate condition, install the Acrylabs, Inc. 2002-PR20HT Roof Coating System using minimum coverage's indicated in the manufacturer's guidelines. Adherence to guidelines will yield a minimum membrane thickness of 20 mils dry film thickness (dft.) on the field of roof and 45-50 mils dft. on the reinforced areas.

- B. Apply flashings at roof penetrations and detail work:
  - 1. All flashings must be completed in accordance with published Acrylabs, Inc. details before final application of 2100HT Finish.
  - 2. Apply heavy coat of 2100B to the area to be flashed, and embed
  - 3. MESH 2000 reinforcement Fabric into wet coating.
  - 3. Brush shall be used to insure that MESH 2000 is fully embedded.
  - 4. Apply additional coating to the top of fabric taking care to completely saturate fabric and provide a weatherproof seal.
  
- C. Seams: All seams requiring treatment shall be treated with 2100B and MESH 2000 Reinforcement Fabric of appropriate width to create a reinforced elastomeric membrane. Subsequent top coats will be applied to these treated areas to provide a minimum membrane thickness of 45-50 mils (dft).
  - 1. All seams to be reinforced must be completed in accordance with published Acrylabs, Inc. details before final application of 2100HT Finish Coatings.
  - 2. Apply heavy coat of 2100B to the area to be flashed, and embed MESH 2000 Reinforcement Fabric into wet coating.
    - 1. Brush shall be used to insure that MESH 2000 is fully embedded.
    - 2. Apply additional coating to the top of fabric taking care to completely saturate fabric and provide a weatherproof seal.
  
- D. Apply 2100HT coatings to entire prepared roof surface to produce a membrane of 7.5mils minimum dry film thickness on the field of the roof.
  
- E. Apply 2100HT in the color specified to areas previously coated to produce a total minimum dry film thickness including the previously applied 2100HT of 20 mils. 2100HT may be applied in 1 or 2 coats as long as minimum dry film thickness is achieved.

Note: Each application of coatings should be applied at right angles to the previous coat in a "cross-hatch pattern. Applicator shall guarantee proper membrane thickness according to specification.

### 3.05 FIELD QUALITY REQUIREMENTS

- A. Verify final minimum film thickness as specified. If specified dry film thickness has not been achieved, application of additional coating will be required.
  
- B. Visually inspect critical areas of the roof including roof seams and penetrations and touch up with additional Acrylabs, Inc. coatings to insure complete coverage.

### 3.06 FINAL CLEANING

- A. Except as otherwise provided for, remove temporary protection devices and facilities which were installed during the course of the work.
  
- B. Clean job site, sweep paved areas, rake clean other surfaces of roofing debris.

- C. Remove waste, surplus materials and rubbish.
- D. All soiled surfaces shall be cleaned using approved materials and methods.

### 3.07 PROTECTION

- A. Protect completed membrane from damage by work of other trades. Schedule sequence of work so that traffic over new membrane is minimized. Institute requires procedures for protection of completed membrane during installation of work from other trades throughout remainder of the construction period. Do not allow traffic of any type on unprotected membrane.
- B. At completion of construction activities of other trades, touch-up and restore damaged or defaced coated surfaces.

END OF SECTION