Liquid Roofing Products

Architectural Specification

SECTION 07.5600
(Liquid Roof Membrane)

System 50

10 Year Renewable Warranty System
AcryLabs Liquid Applied Roof Membrane - Systems

PART 1 – GENERAL

1.01 SUMMARY

A. This section includes a liquid applied 50 mil reinforced elastomeric composite roof membrane system, complete with surface preparation, with all flashing and other related work required to perform a complete installation of this A.L.A.R.M. - System.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM) 1998 Annual Book of ASTM Standards
1. Designation: D6083-97a Standard Specification for Liquid Applied Acrylic Coating Used in Roofing
2. Volume 04.04 Roofing, Waterproofing, and Bituminous Materials
3. 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. Factory Mutual Approval Standard 4470
1. Standard for Class 1 Windstorm Pressure, Uplift, Hail Damage, Resistance to Foot Traffic, Susceptibility to Leakage.
2. Standard for Class A Spread of Flame Fire.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements:
1. Provide liquid applied reinforced elastomeric composite membrane system in accordance with manufacturer's 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 D6083 Standard Specification for Liquid Applied Acrylic Coatings Used in Roofing.

1.04 SUBMITTALS

A. Product Data: Provide written technical information and installation instructions from AcryLabs which demonstrates 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 material list, including quantities based on AcryLabs application rates, to be applied to achieve specified membrane thickness.

D. Submit 2-year Applicator Agreement 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. Agreement 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 product.

F. Submit AcryLabs Safety Data Sheets (SDS).

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 3 years or more.
1. Certificate: When requested, submit certificate indicating applicator qualifications.
2. Completed project reference list: If 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 specifications and detail drawings.

C. Periodic and final inspections by an authorized representative of AcryLabs are required for warranty. 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 upon substantial completion of the project. Any deviations from AcryLabs specifications must be noted on the roof plan drawings.

D. Provide all primers, coatings, reinforcement fabrics and accessories as manufactured and/or approved in writing by AcryLabs.

1.06 DELIVERY, STORAGE AND HANDLING

A. Furnish AcryLabs coating system materials and component accessories in manufacturer's original containers and/or wrapped bundles, clearly indicating the AcryLabs label and other identifying information.

B. Store materials separated from the ground and in a dry location, protected until installation in accordance with AcryLabs instructions.

C. Handle materials in accordance with AcryLabs recommendations.

D. Protect materials against freezing. Store materials between 40ºF and 95ºF.

1.07 PROJECT CONDITIONS

A. Existing Substrate: After existing roofing systems are cleaned and repaired, as required, but prior to starting membrane system installation work, complete all substrate corrective actions required, including but not limited to; removal and replacement of deteriorated flashing, roof decking, removal and replacement of wet insulation. Areas of prolonged standing water (ponds) will require corrective action. The NRCA recommends that all roofs be designed and built to have positive drainage. Substrate shall be smooth, dry, and free of debris.

B. New Construction and Recover boards: Expanded Polystyrene (EPS) minimum 1 inch thick with a minimum density of 1.5 lbs. per cubic foot, Polyisocyanurate minimum 1-1/2 inch thick, Plywood minimum ½ inch thick, Dens Deck Primed minimum ¼ inch thick or other cover boards approved in writing by AcryLabs.

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 coatings. To qualify for a warranty, a logbook of project weather conditions during application is to be kept by project foreman.

B. Do not apply AcryLabs coatings when snow, rain, or fog is expected before the membrane will have a chance to dry.

C. Do not apply coatings when the temperature of surfaces to be coated and/or surrounding air temperatures are less than 40ºF or freezing temperatures are expected within 24 hours.

D. Do not apply AcryLabs coatings when the dew point can be reached before the coatings have sufficiently dried or cured. If applicable, 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 Safety Data Sheets (SDS). SDS 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. When applying reflective white coatings to a roof, sunglasses should be used to protect eyes from glare.

D. Handle on pails should only be used to hand carry pail and should not be used to hoist pail from ground to roof.

E. 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). Information regarding OSHA Standards is available on the internet at www.osha.gov.

F. Care should be taken to avoid overhead power lines and arcing potential.

1.10 WORK SEQUENCE

A. Sequence of operations is at the applicator's option providing it is arranged to maintain the building dry during the life of the Contract. Schedule and execute work to prevent leaking.

1.11 WARRANTY

A. Furnish appropriate AcryLabs warranty. All invoices must be satisfied.

B. Furnish 2-year Applicator Agreement. The conditions of the agreement 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 applicator agreement.

PART 2 – PRODUCTS

2.01 **A**CRYLABS **L**IQUID **A**PPLIED **R**OOF **M**EMBRANE - SYSTEMS

A. Manufacturer: AcryLabs
101 North Prospect Street
Reading, PA 19606
Phone: (866) 273-1355
E-mail: customerservice@acrylabs.com
Website: acrylabs.com

B. Substitutions: None

2.02 MATERIALS

A. AcryLabs System 50 shall include but not be limited to:
1. AcryLabs Base Coat
2. AcryLabs Finish Coat
3. Fabric Reinforcement with AcryLabs logo imprinted

NOTE: *AcryLabs Base Coat and Finish Coat and Fabric Reinforcement are a Class 1 Roof Cover with a Class A Fire Rating under Factory Mutual Standard 4470.*

B. AcryLabs 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 Base Coat

	Minimum	ASTM
Weight Per Gallon	12 LBS	D-1475
Solids by Weight	67.0 ± 2%	D-1644
Solids by Volume	55.0 ± 2%	D-2697
Viscosity	130 - 140 KU	D-562-01

Liquid Property Requirements Finish Coat

	Minimum	ASTM
Weight Per Gallon	12 LBS	D-1475
Solids by Weight	67.0 ± 2%	D-1644
Solids by Volume	55.0 ± 2%	D-2697
Viscosity	130 - 140 KU	D-562-01

Cured Film Physical Property Requirements Base Coat

	Minimum	ASTM Standard
Low Temperature Flexibility @ -49ºF	passes	D-522-93A
Percent Elongation (break) @73.4ºF	225 ± 25%	D-2370
Tensile Strength (psi) @73.4ºF	236 ±50 PSI	D-2370
Permeability (20 mil film) @73.4ºF	20.9 ± 3 PERMS	D-1653-B
Accelerated weathering	2 years-no effect	G-53
Fungi Resistance	Zero rating	

Cured Film Physical Property Requirements Finish Coat

	Minimum	ASTM Standard
Low Temperature Flexibility @ -49ºF	passes	D-522-93A
Percent Elongation (break) @73.4ºF	225 ± 25%	D-2370
Tensile Strength (psi) @73.4ºF	236 ±50 PSI	D-2370
Permeability (20 mil film) @73.4ºF	20.9 ± 3 PERMS	D-1653-B
Accelerated weathering	2 years-no effect	G-53
Fungi Resistance	Zero rating	

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

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

Fabric Reinforcement (Average typical properties)

	Results	ASTM Standard
Tensile strength	WARP=74lb / WEFT=45lb	D-5034
Elongation	WARP=21lb / WEFT=51lb	D-5034
Ball Burst	111 lbs.	D-3787
Mullen Burst	176.8 lbs.	D-3786
Tear Strength	WARP=14lb / WEFT=24lb	D-1117

2.03 APPLICATION EQUIPMENT

A. AcryLabs coatings shall be applied by brush, roller, or spray. When applied by spray it is recommended that an airless spray rig with a minimum 3000PSI be used with tip sizes .021 through .041 orifice size. Regardless of application method, material requirements will remain the same. In all cases, the specified minimum membrane thickness must be achieved.

2.04 RELATED MATERIALS

A. Related Products Supplied by AcryLabs:
1. Brushable Sealant
2. EPDM Rinse Prep
3. Rust Inhibitive Primer
4. AcryLabs Asphalt Emulsion

B. Roof Drain Flashing:
1. Specify as per requirements of project.

C. Sealant (***Silicone sealant unacceptable***)
1. Polyurethane
2. Polysulfide
3. Acrylic

PART 3 - EXECUTION

3.01 MANUFACTURERS INSTRUCTIONS

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

3.02 EXAMINATION

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 and substrate is acceptable.

B. Applicator shall be responsible for providing a proper substrate to receive the AcryLabs roofing system. Identify areas of ponding water and ensure that the roof surface has positive drainage.

C. Verify that substrate is dry and free of oil, grease, dust, rust, or another contaminant.

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

3.03 PREPARATION

A. Clean existing substrates using a pressure washer with a minimum of 3500 psi. Care must be taken to avoid forcing water beneath the damaged roof surface. Environmentally friendly detergents or cleaners may be used for dirt and growth that is left behind after plain water washing. Existing EPDM must be cleaned using AcryLabs E.P.D.M. Rinse Prep.

B. Substrate: After existing roofing systems are cleaned and repaired, as required, but prior to starting new AcryLabs roofing system installation work, complete all substrate corrective actions required. Substrate shall be smooth, dry, and free of debris.

C. The roof must be completely free of dust, dirt, oil, debris, or other contaminants before application of AcryLabs coatings or sealants. If any contaminants are found, they must be removed by appropriate means.

D. Prime all rusted metal with AcryLabs Rust Inhibitive Primer.

E. Protect area or surfaces not designated to receive AcryLabs coatings against any damage or defacement resulting from the AcryLabs System Application.

3.04 INSTALLATION

A. Following inspection and acceptance of substrate condition, install AcryLabs System 50 using minimum coverage indicated in the manufacturer's guidelines. Adherence to guidelines will yield a minimum membrane thickness of 50 mils dry film thickness (DFT) over the entire surface covered.

B. Apply flashings at roof penetrations and detail work:
   1. Apply a generous coat of Base Coat to the area to be flashed and embed Fabric Reinforcement into wet coating. Flashings should be applied a minimum of 3 inches up vertical surfaces and 3 inches onto surrounding roof surface.
   2. Brush shall be used to ensure that Fabric is fully embedded.
   3. Apply additional coating to the top of Fabric taking care to completely saturate Fabric and provide a weatherproof seal.

C. Where rigid insulation or cover boards are used, prior to addressing the field of the roof embed 4-inch Fabric Reinforcement in Base Coat at a minimum rate of 1.25 gallons per 100 sq. ft. on all seams of the boards. Immediately saturate Fabric with an additional coat of Base Coat at a minimum rate of 1.25 gallons per 100 sq. ft. Completed Base Coat and Fabric Reinforcement on the board seams should be a minimum thickness of 30 mils (DFT)

D. Apply Fabric Reinforcement and Base Coat to field of roof:
   1. Apply tack coat of Base Coat at approximately 1.25 gallons per 100 sq. ft. Immediately embed Fabric Reinforcement into wet coating. Care must be taken to lay the fabric to the contact surface avoiding wrinkles, fishmouths, etc. Overlap edges and ends of fabric a minimum of 3 inches.
   2. Roller or brush shall be used to ensure that the Fabric is fully embedded.
   3. After embedding Fabric into wet coating, immediately saturate Fabric with an additional coat of Base Coat, at a minimum rate of 1.25 gallons per 100 sq. ft. completely saturating the Fabric.
   4. Completed Base Coat and Fabric Reinforcement thickness should be a minimum of 30 mils (DFT).

E. Apply first coat of Finish Coat to entire surface previously covered with Fabric Reinforcement including field of roof, gussets, penetrations, and perimeter locations. A minimum of 1.25 gallons of Finish Coat per 100 sq. ft. is required to yield a dry film thickness of 10 mils.

F. Apply second coat of Finish Coat to entire surface previously coated. A minimum of 1.25 gallons of Finish Coat per 100 sq. ft. is required to yield a dry film thickness of 20 mils.

G. If necessary, apply additional Finish Coat where required, to ensure that the 50 mils total membrane thickness is achieved.

3.05 FIELD QUALITY REQUIREMENTS

A. Verify final 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 coatings to ensure complete and adequate 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 project site, sweep paved areas, and rake clean other surfaces of roofing debris.

C. Remove debris, surplus materials, and trash from project site.

D. All soiled surfaces shall be cleaned using approved materials and methods.

3.07 PROTECTION OF COMPLETED MEMBRANE

A. Protect completed membrane from damage by work of other trades. Schedule sequence of work so that traffic over new membrane is minimized. Institute required procedures for protection of completed membrane during installation of work from other trades throughout remainder of 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. Correct damage by cleaning, repairing, replacing, and/or recoating to make acceptable to the specifier and/or AcryLabs.

END OF SECTION