NO. 724-B

DATA SHEET

MasterFormat: 07 27 26

JANUARY 2026
(Supersedes August 2025)

AIR-SHIELD™ LMP

Liquid Membrane Vapor Permeable Air Barrier

DESCRIPTION

AIR-SHIELD LMP is a water-based air/liquid moisture barrier that cures to form a tough, seamless, elastomeric membrane. AIR-SHIELD LMP exhibits excellent resistance to air leakage. When properly applied as a drainage plane, AIR-SHIELD LMP prohibits liquid water intrusion into the substrate.

USES

AIR-SHIELD LMP has been specifically formulated to act as an air and liquid moisture barrier, allowing vapor to pass through it. It may be applied to most common surfaces and integrated into various wall systems. AIR-SHIELD LMP is suitable for both new construction and retrofit applications. Primary applications include cavity wall and masonry wall construction. AIR-SHIELD LMP is designed for use on precast concrete, cast-in-place concrete, masonry (concrete block), interior and exterior gypsum board, rigid foam insulation, primed steel, and untreated plywood.

FEATURES/BENEFITS

- Resists the growth of mold and fungus.
- Non-asphaltic – designed to meet stringent fire code requirements.
- High permeability - allows the transmission of moisture vapor through porous building materials.
- Low temperature flexibility – no cracking down to -20° F (-28° C)
- Phthalate-free – less toxic.
- Natural free resistant polymers – very low flame spread and smoke development indexes.
- Highly flexible - bridges cracks, which may form in the substrate.
- UV resistant – gray membrane can be left exposed up to six months. Black membrane can be exposed for an indefinite period and is ideal for exposed applications, such as beneath rain screen panels.
- User friendly – single-component, water-based technology allows for simple, safe application and easy cleanup.
- Liquid applied - simplifies detailing and assures a monolithic, seamless membrane when applied to a rough or smooth surface.
- Sprayable - with appropriately configured airless spray equipment - low application costs.
- Excellent adhesion - remains firmly bonded to the substrate, even when applied over damp surfaces.
- Self-sealing – Nails and fasteners can be used without compromising performance.
- Utilizes a novel quick dry method through technology unique to the air barrier market.

PACKAGING

5 Gallon (18.93 Liter) Pails
55 Gallon (208.20 Liter) Drums

COVERAGE

Application Rate:	29 ft.²/gal. (0.72 m²/L)
Wet Film Thickness:	55 mil (1.39 mm)
Dry Film Thickness:	23 mil (0.59 mm)
Application Rate:	19.2 ft.²/gal. (0.47 m²/L)
Wet Film Thickness:	83 Mil (2.1 mm)
Dry Film Thickness:	35 Mil (0.9 mm)
Application Rate:	16.7 ft.²/gal. (0.41 m²/L)
Wet Film Thickness:	95 Mil (2.41 mm)
Dry Film Thickness:	40 Mil (1 mm)

SHELF LIFE

When stored indoors in original, unopened containers at temperatures between 40° - 90° F (4° - 32° C), optimum performance and best use is obtained within one year of date of manufacture.

SPECIFICATIONS/STANDARDS

- Exceeds Air Barrier Association of America (ABAA) requirements for fluid-applied air barriers.
- Exceeds ABAA maximum assembly air leakage requirements when tested in accordance with ASTM E 2357.
- Exceeds ABAA maximum material air leakage requirements when tested in accordance with ASTM E 2178.
- Exceeds the requirements of the Massachusetts Commercial Energy Code for Building Envelope Systems.
- Complies with all current VOC regulations, including National EPA VOC Emission Standard for Architectural Coatings, CARB, LADCO, OTC Phase I and II, Arizona Maricopa County, Utah Department of Environmental Quality, and Colorado VOC regulations.

CONTINUED ON REVERSE SIDE ...

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TECHNICAL DATA

The following applicable testing was determined at 75° F (24° C) and 50% RH at 55 wet mils (23 mils dry) coverage rate.

Color:	Gray (Black – special order only)
Flexibility (AC212)	PASS
Water Vapor Permeance (ASTM E96, Procedure B) Coverage Rate Thickness: 55 Mils Wet (23 Mils Dry) 83 Mils Wet (35 Mils Dry) 95 Mils Wet (40 Mils Dry)	Perms: 21 12 11
Service Temperature:	Not to exceed 175° F (80° C)
Elongation (ASTM D412)	>250%
Tensile Strength (ASTM D412)	146 psi (1 MPa)
Nail Sealability (ASTM D1970):	Pass
Storage Temperature	40 - 90° F (4 - 32° C)
Air/Substrate Temperature (At Time of Application):	>25° F (-3.8° C) and rising
VOC Content:	99 g/L
Water Resistance (AATCC 127-2008)	Pass – No Leakage
Adhesion (ASTM D4541) Modified per ABAA (Concrete, CMU, Fiberglass Faced Exterior Gypsum Board, Untreated Plywood, Steel)	>16 PSI (0.11 MPa)
Crack Bridging (ES-AC 212)	Pass
Low Temperature Flexibility -20° F (-28° C) ASTM D1970 (Section 7.6)	No Cracking (5 Samples)
Mold and Fungus Resistant ASTM D3273, ASTM D3274, ASTM D5590	Pass

AIR LEAKAGE

Test Method	ASTM E2178	ASTM E2357
Pressure	75 Pa (1.57 lb./ft.^{2})	75 Pa (1.57 lb./ft.^{2})
ABAA Requirements	0.004 cfm/ft.^{2} (0.02 L/S/M^2)	0.04 cfm/ft.^{2} (0.2 L/S/M^2)
AIR-SHIELD LMP Results	<0.0001 cfm/ft.^{2} (0.02 L/S/M^2)	<0.0005 cfm/ft.^{2} (0.2 L/S/M^2)

AIR-SHIELD LMP conforms with ASTM E84, Class A.

AIR-SHIELD LMP may be used in NFPA 285 complying wall assemblies. Contact W. R. MEADOWS for further information.

APPLICATION

Surface Preparation ... All surfaces must be clean (free of all coatings and curing compounds), free of frost, structurally sound, and relatively smooth. AIR-SHIELD LMP can be applied to "green" or damp concrete if there is no liquid water on the surface. Prepare substrate per manufacturer's instruction prior to membrane application. All walls to receive AIR-SHIELD LMP be capped to prevent moisture infiltration from entering the wall during construction.

Exterior Sheathing Panels ... Exterior sheathing panels are to be installed and fastened per manufacturer's recommendation. For detailed application information, see INSTALLATION INSTRUCTIONS: JOINT TREATMENT OF EXTERIOR SHEATHING PANELS WHEN USING AIR-SHIELD FLUID APPLIED MEMBRANES available at www.wrmeadows.com. For joint treatment in plywood and OSB sheathing, please see PLYWOOD SHEATHING JOINT DETAIL INSTALLATION GUIDELINES also available at www.wrmeadows.com.

Rough Openings ... Refer to INSTALLATION GUIDELINES: AIR-SHIELD ROUGH OPENINGS available at www.wrmeadows.com.

Concrete Masonry Units ... Before applying AIR-SHIELD LMP to CMU surfaces, patch all cracks, protrusions, small voids, offsets, details, irregularities, and small deformities with MEADOW-PATCH® 5 or MEADOW-PATCH 20 from W. R. MEADOWS at least two hours before application.

Appearance ... AIR-SHIELD LMP (gray) will dry gray in color. AIR-SHIELD LMP (black) appears dark gray in the container, but the dried film will be black.

Temperature/Conditions ... Drying (curing) times are dependent on air temperature, airflow, relative humidity, substrate temperature, wind chill, dew point, etc. For example, as the temperature decreases or the humidity increases, the dry time will increase. If the temperature drops below 40° F (4.5° C), dry time (cure rate) and resistance to precipitation and dew will be delayed. If the dew point is within five degrees of the air temperature, drying will be dramatically slowed. Protect membrane from precipitation and washout prior to drying. Exposure to air temperatures/wind chills below 20° F (-6.6° C) during drying may lead to cracking and decrease of performance of AIR-SHIELD LMP.

Typical Dry Times:

Tack-Free Time: 4 hours at 75° F (23.5° C) & 50% RH
Dry Time: 48 hours at 75° F (23.5° C) & 50% RH

Roller ... AIR-SHIELD LMP can be applied directly from the container; a ¾" (19.1 mm) nap roller is recommended. Apply AIR-SHIELD LMP on a vertical surface, in multiple coats if necessary, to achieve a final film thickness of 55 mils wet (23 mils dry). NOTE: While the proper film thickness may be achieved with a single coat, multiple coats may be necessary if the material slumps due to temperature and/or substrate conditions. Allow each previous coat to dry (approximately one hour) prior to applying the next coat.

Sprayer ... AIR-SHIELD LMP should be stored and maintained at a temperature of 60˚ F (15.6° C) or higher throughout the entire spray application. Note: Use of Graco HydraMax 350 or Graco GH833 is recommended for optimum performance. A Graco heavy duty texture gun with either a 0.051" (Graco GHD 551), 0.035" (Graco GHD 535), or 0.037" (Graco GHD 537) spray tip is recommended. If cratering occurs, the GHD 535 or 537 is recommended for a smoother finish.

Spray AIR-SHIELD LMP on a vertical surface, in multiple coats if necessary, to achieve a final film thickness of 55 mils wet (23 mils dry). NOTE: While the proper film thickness may be achieved with a single coat, multiple coats may be necessary if the material slumps due to temperature and/or substrate conditions. Allow each previous coat to dry (approximately one hour) prior to applying the next coat.

Film Thickness ... Frequently inspect the surface with a wet film gauge to verify that proper film thickness is achieved and that the film thickness is uniform over the entire surface. Porous substrates, masonry blocks, etc., may require multiple coats to achieve recommended film thickness.

Cleanup ... Material should not be left in the pump, lines, or gun when finished spraying. After spraying, flush water through the system until pump and hose are clear (approximately five gallons). Aromatic solvents, such as xylene or toluene (approximately two gallons) can be used for final flushing after water is flushed through the pump and lines. Water should be flushed through the machine to remove any solvent prior to spraying of AIR-SHIELD LMP.

LIMITATIONS/PRECAUTIONS

DO NOT FREEZE. Keep containers tightly sealed. Maximum UV exposure period for gray membrane is six months; unlimited for black. It is recommended that the roof is installed prior to the application of the AIR-SHIELD LMP. This will help avoid water from getting behind the backup wall or filling the CMU block, which can potentially lead to jobsite concerns. Do not apply AIR-SHIELD LMP if precipitation is forecast or imminent within 24 hours at 75° F (23.5° C) and 50% RH of application. Adhesion of membrane on oriented strand board (OSB) can sometimes be affected by the level of surface texture or the presence of wax that is part of the binder used to bond together the wood strands. Prior to placement on OSB, in-situ adhesion tests should be performed to determine suitability of substrate prior to full installation. If there are variations in the OSB surface, multiple tests may be required.

HEALTH AND SAFETY

Direct contact may result in mild irritation to the skin and eyes. Should adverse effects occur, remove subject from area immediately. If irritation occurs and persists, move victim from exposure source and treat symptomatically. Flush affected areas with mild soap and water. Refer to safety data sheet for complete health and safety information.

For CAD details, most recent data sheet, sustainability information, and SDS, visit www.wrmeadows.com.

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