PRODUCT DATA SHEET

Old Mill EPS Foam Panel

Closed cell, lightweight and resilient expanded polystyrene (EPS).

COLOR
White

SIZES

- 2’ x 4’ Panels
- 4’ x 4’ Panels
- 8' x 4' Panels
- Thicknesses from 1”-4”
- Custom shapes, thicknesses and sizes also available

SUSTAINABILITY

- Zero Ozone Depletion Potential (ODP)
- Ultra-low Global Warming Potential (GWP) blowing agent
- 100% recyclable material
- Long-term stable thermal performance without thermal drift

COMPREHENSIVE STRENGTH	**15 psi**
ASTM CLASSIFICATION ASTM C578	**Type II**
R-VALUE PER 1" INCH ASTM C518	
at 75°F Mean Temperature	**4.2**
at 40°F Mean Temperature	**4.6**
at 25°F Mean Temperature	**4.8**
FLEXURAL STRENGTH (PSI) ASTM C203	**35**
SURFACE BURNING ASTM E84	
Flame Spread Index	**<25**
Smoke Developed Index	**<450**
MAXIMUM USE TEMPERATURE	
Short Term (10-15 min)	**180°F**
Long Term	**165°F**

DESCRIPTION

Old Mill EPS Foam Panels are precision-molded, closed-cell, rigid expanded polystyrene (EPS) insulation panels manufactured in compliance with ASTM C578, Type II. Designed specifically for integration into the Old Mill Panel+ Wall System, these panels serve as both a continuous insulation (CI) layer and a stable, high-precision substrate for adhered thin brick, stone, and tile veneers.

Each panel delivers a long-term stable R-value, exceptional dimensional stability, and outstanding moisture resistance. The closed-cell structure resists water absorption, minimizes thermal drift, and withstands freeze–thaw cycling, ensuring consistent performance over the life of the building. The manufacturing process incorporates a low Global Warming Potential (GWP) blowing agent and achieves zero Ozone Depletion Potential (ODP), with GREENGUARD Gold certification for indoor air quality and an independently verified Environmental Product Declaration (EPD) for sustainability reporting.

With an interlocking tongue-and-groove profile, Old Mill EPS Foam Panels provide integrated drainage and ventilation channels, precise alignment, and enhanced structural stability. They are suitable for use in residential, commercial, and institutional wall assemblies—above or below grade—and are compliant with applicable building, residential, and energy codes.

USES

- Continuous exterior insulation for adhered masonry veneer systems
- Substrate for Old Mill Panel+ thin brick, stone, and tile veneer installations
- Above-grade wall insulation in residential and commercial buildings
- Below-grade perimeter and foundation wall insulation (non-termite risk zones)

ADVANTAGES

Continuous Insulation & Substrate in One: Replaces separate insulation boards and masonry backer, reducing wall thickness and labor.
Reliable Thermal Efficiency: Stable R-value that will not drift, with R-4.2 per inch
Moisture & Drainage Management: Integral vertical channels promote rapid water egress and ventilation behind cladding.
Fire-Tested Assemblies: Listed NFPA 285 compliant wall assemblies available when combined with Panel+ air/water barrier and joint treatments.
Sustainable Choice: Low-GWP formulation, recyclable EPS core, GREENGUARD Gold certification, and EPD for transparent carbon accounting.
Quality Assurance: Every batch tested to ASTM C578 density, R-value, water absorption, and dimensional stability requirements; UL and ICC-ES oversight.
Qualifies for a 5 or 15 Year System Warranty

TECHNICAL INFORMATION

TEST	METHOD	RESULTS
Compressive Strength @ 10% deformation	ASTM D1621	15 psi (103 kPa)
ASTM Classification	ASTM C578	Type II
R-value per inch @ 75°F mean temp	ASTM C518	4.2
R-value per inch @ 40°F mean temp	ASTM C518	4.6
R-value per inch @ 25°F mean temp	ASTM C518	4.8
Flexural Strength	ASTM C203	35 psi (241 kPa)
Water Absorption (24 hr immersion)	ASTM C272	2.0% by volume
Water Absorption (24 hr immersion + 24 hr @ 50% RH)	ASTM C272	0.3% by volume
Water Vapor Permeance @ 1” thick	ASTM E96	3.5 perms
Surface Burning – Flame Spread Index	ASTM E84 / UL 723	< 25
Surface Burning – Smoke Developed Index	ASTM E84 / UL 723	< 450
Maximum Use Temperature – Short term	—	180°F (82°C)
Maximum Use Temperature – Long term	—	165°F (74°C)
Density	ASTM C303	1.35 pcf (21.6 kg/m^3)
Dimensional Stability	ASTM D2126	Pass
Fungi Resistance	ASTM C1338	Pass

Notes: Old Mill EPS Foam Panel is elastic up to 1% deformation. A safety factor of 3 is recommended for long-term loads to minimize long-term deflection. The R-value information for Old Mill EPS Foam Panels is reported from tests conducted at a mean temperature of 75°F, as required by the FTC's "R-value Rule." R-value testing uses two metal plates, one cold (55°F) and one warm (95°F), to achieve a mean temperature of 75°F. Additional R-values at 25°F and 40°F mean temperatures are also available to assist with design across various climate zones.

APPLICABLE STANDARDS

ASTM C203	ASTM C578	ASTM E96
ASTM C727	ASTM D1621	ICC-ES ESR-1962
ASTM C518	ASTM E84	UL Listings, UL ER16529-01

Recognized for compliance with ASTM C578, ASTM E84/UL723, NFPA 285 Assemblies, International Building Code (IBC), International Residential Code (IRC), and International Energy Conservation Code (IECC).

Evaluated by ICC-ES (ESR-1962) and UL Solutions (UL ER16529-01).

COMPRESSIVE STRENGTH & PERFORMANCE

Old Mill EPS Foam Insulation Panels are engineered for strength, stability, and long-term thermal performance. In applications where insulation supports other building materials—such as roof coverings or adhered veneers—compressive resistance is critical.

What Compressive Resistance Means
Compressive resistance measures how much weight an insulation panel can handle without permanent deformation. It is expressed in pounds per square inch (psi) and tested at 10% strain in accordance with ASTM standards.

When EPS insulation is loaded, it passes through two stages:

1. **Elastic deformation** – Light loads cause slight compression, but the panel returns to its original shape once the load is removed.
2. **Plastic deformation** – Higher loads exceed the material's yield point, causing a permanent change in shape.

Strength Ratings & Load Recommendations

Old Mill EPS panels are manufactured with compressive strengths starting at 15 psi (at 10% deformation), with higher strengths available. To prevent long-term damage, a safety factor of three is applied—meaning sustained loads should be no more than one-third of the rated compressive resistance.

Example:
- Rated compressive strength: 15 psi
- Recommended sustained load: 5 psi (≈ 720 pounds per square foot)

Even at this safe load level, the insulation provides exceptional support while maintaining its insulating properties.

R-VALUE CALCULATION

THICKNESS @ 75°F

R-VALUE PER INCH @ 75°F (MEAN TEMPERATURE)	**4.2**
R-5	1-5/16 in.
R-7.5	2 in.
R-10	2-9/16 in.
R-15	4 in.

R-VALUE @ 75°F

R-VALUE PER INCH @ 75°F (MEAN TEMPERATURE)	**4.2**
1 in.	4.2
2 in.	8.4
3 in.	12.6
4 in.	16.8

BASIS OF PRODUCT DATA

Product data is based on laboratory testing, field evaluations, and quality control records for molded expanded polystyrene insulation manufactured in compliance with ASTM C578, Type II. Physical properties are determined through standardized ASTM methods, including ASTM D1621 (compressive strength), ASTM C518 (thermal resistance), ASTM C203 (flexural strength), ASTM C272 (water absorption), ASTM E96 (water vapor permeance), and ASTM E84/UL 723 (surface burning characteristics). Installation guidelines are derived from Old Mill Building Products' field-tested Panel+ System procedures for both fluid-applied adhesive and mechanically fastened applications.

LIMITATIONS

- Old Mill EPS Foam Panels are non-structural insulation components and shall not be used to resist structural loads unless specifically tested and approved as part of an engineered assembly.
- Panels must be protected from prolonged direct UV exposure; cover with cladding or protective wrap as soon as practical after installation.
- Do not expose panels to solvents, fuels, or other chemicals incompatible with EPS.
- Below-grade use is permitted only in non-termite risk zones unless paired with an approved termite-resistant EPS product.
- Not intended for continuous service at temperatures above 165°F (74°C).
- Flammable vapors (pentane) may be released from freshly manufactured EPS; provide adequate ventilation during storage and installation.
- Use only in assemblies meeting code requirements for fire performance, including NFPA 285 where applicable.

INDGREDIENTS DISCLOSURE

Polystyrene: < 97%
Pentanes: < 4%
Flame Retardants[1]: < 1%
Additives: < 1%

Non-Hazardous
[1]Product does not contain hexabromocyclododecane (HBCD)

STORAGE & HANDLING

- Store panels on pallets or dunnage at least 3 inches above ground level.
- Protect from prolonged direct sunlight with a weatherproof, breathable covering such as a tarpaulin.
- Slit or remove factory packaging to prevent condensation buildup during storage.
- Replace any panels damaged by impact, deformation, or exposure.
- When stored outdoors, secure materials to prevent wind damage or displacement.
- Panels stored without protection may yellow from UV exposure; this surface oxidation does not affect performance but should be removed before applying coatings or adhesives.
- Keep panels away from open flames, welding, sparks, or high heat sources; EPS is combustible.
- Avoid contact with solvents, petroleum-based products, or other chemicals incompatible with EPS.
- Follow safe handling practices to avoid cuts, punctures, or dust inhalation during cutting or fabrication.

APPLICATION

Old Mill EPS Foam Panels can be installed using one of two approved methods, selected based on project requirements, substrate type, and environmental conditions:

1. **Fluid-Applied Adhesive Method** – Recommended for both solid and nailable substrates when a continuous air and water barrier is required as part of the wall assembly. This method integrates Old Mill Air & Water Barrier with Old Mill Adhesive for a fully bonded installation.
2. **Mechanically Fastened Method** – Recommended for applications where panels are secured directly to framing or sheathing using corrosion-resistant fasteners and Old Mill washers. This method incorporates a drainable building wrap behind the panels.

FLUID-APPLIED ADHESIVE

Substrate Preparation

- Solid Substrates (brick, block, concrete, CMU):
  a. Apply a uniform 10 mil WFT (wet film thickness) coat of Old Mill Air & Water Barrier over the entire wall surface.
  b. After a minimum of 20 minutes, apply a second 10 mil WFT coat for a total 20 mil coverage.
  c. Protect from precipitation and freezing; allow a minimum 18-hour cure before panel installation.
- Nailable Substrates (OSB, plywood, exterior gypsum):
  d. Apply a 10 mil WFT coat of Old Mill Air & Water Barrier.
  e. Immediately embed Old Mill Polylaminate Reinforcing Fabric at all sheathing joints and outside corners, pressing from center outward with a trowel. Overlap fabric runs by at least 2½ inches.
  f. After a minimum of 20 minutes, apply an additional 15 mil WFT coat over the entire surface.
  g. Protect from precipitation and freezing; allow 12–24 hours cure before panel installation.

Panel Installation

1. Begin at an outside corner, ensuring panels overlap at corners. For inside corners, position panels to allow space for a backer rod and sealant.
2. Remove bottom alignment track for the first course if a full row of thin brick is to be installed at base.
3. Apply Old Mill Adhesive to the cured Air & Water Barrier with a ½-inch notch trowel, combing vertically to form moisture drainage channels.
4. Engage tongue-and-groove joints, staggering vertical seams by at least 16 inches.
5. Maintain ¼-inch clearance at window/door openings and flashing interfaces.
6. Cut panels cleanly with a utility knife to fit as required.

MECHANICALLY FASTENED

Substrate Preparation

- Install a drainable building wrap over the entire wall surface where Old Mill Panel+ will be applied, in accordance with building code and manufacturer's instructions.

Panel Installation

1. Position panel starting at the bottom outside corner, level and flush with the wall base.
2. Secure panels through sheathing into framing members using corrosion-resistant screws with Old Mill 2-inch plastic washers. Fasteners must penetrate framing at least 1 inch beyond the sheathing.
3. Fastener placement:
   - Every 16 inches horizontally along framing members
   - Every 8 inches vertically along panel height
   - Additional fasteners around panel perimeters and at openings
4. Fasteners must be seated so the washer face is flush with the panel surface—do not overdrive.
5. Engage tongue-and-groove joints; stagger vertical seams by at least 16 inches.
6. Maintain ¼-inch clearance at wall penetrations, openings, and flashing transitions.
7. Remove bottom alignment track for the first course if a full row of thin brick is to be installed at base.

SAFETY INFORMATION

Composition: EPS polymer (>97%), pentane blowing agents (<4%), proprietary non-hazardous additives (<1%). No HBCD.

Hazards: Combustible; burning releases toxic vapors. Dust from cutting may cause irritation.

Safe Handling:

- Ventilate during cutting.
- Use PPE (gloves, safety glasses, dust mask).
- Avoid heat, flame, and incompatible chemicals.

First Aid:

- Inhalation: Fresh air; seek medical attention if symptoms persist.
- Skin/Eyes: Wash with water; rinse eyes for 15 minutes.
- Fire: Extinguish with water spray, foam, or CO_2.

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