



Product Data Sheet

MULE-HIDE POLY ISO1™ ROOF INSULATION

PRODUCT DESCRIPTION

The Mule-Hide Poly ISO 1™ polyisocyanurate insulation (flat or tapered) is a closed-cell polyisocyanurate foam core laminated to (non-asphaltic) glass fiber reinforced felt facers. The Mule-Hide Poly ISO 1 is compatible with all Mule-Hide membranes and accessories. Available in 20 psi and 25 psi.



BASIC USES

The Mule-Hide Poly ISO 1™ insulation board may be used for ballasted, mechanically attached and fully adhered single- ply roofing systems. The Poly ISO 1™ insulation board may be installed over approved decks and substrates on new construction, tearoffs, and recover (retrofit) projects. The Poly ISO 1™ insulation board may be used in UL Class A and FM Class 1 assemblies.

BENEFITS & SUPPLEMENTAL STATEMENTS

- Approved for direct application to steel decks
- Mule-Hide Poly ISO 1™ is manufactured with NexGen Chemistry: Contains no CFCs, HCFCs, is Zero ODP, EPA Compliant and has virtually no GWP
- Available as 4' x 4' or 4' x 8' panels in Grade 2 (20 psi) or Grade 3 (25 psi)
- Thicknesses range from 1" to 4.5"

TYPICAL PHYSICAL PROPERTIES

Property	Test Method	Typical Results
Dimensional Stability	ASTM D-2126	2% Linear Change (7 days)
Compressive Strength	ASTM D-1621	20 PSI (Grade 2) 25 PSI (Grade3)
Water Absorption	ASTM D-209	Less than 1% By Volume
Moisture Vapor Transmission	ASTM E-96	Less than One (1) Perm
Service Temperature	---	-100°F to 250°F Max
Flame Spread (foam core)	ASTM E 84	< 75**
Smoke Development	ASTM E 84	< 450**

*The physical properties above are presented as typical average values as determined by accepted ASTM test methods and are subject to change. All information can be confirmed by contacting Mule- Hide Products.

** The numerical ratings are determined by ASTM Test Method E-84 are not intended to reflect hazards presented by this or any other material under actual fire conditions. A flame spread index of 75 or less and smoke development of 450 or less meet code requirements regarding flame spread and smoke development for foam plastic roof insulation. However, the codes exempt foam plastic insulation when used in roof deck constructions that comply as an assembly with FM 4450 or UL 1256 (see IBC, NBC, UBC and SBS Sections on Foam Plastic Insulation (Chapter 26). Smoke development does not apply to roofing

LTRR Value	ASTM C1289-11 (revised Jan-2014)
20	2 layers of 1.8" Poly ISO
25	2 layers of 2.2" Poly ISO
30	2 layers of 2.6" Poly ISO
35	2 layers of 3.1" Poly ISO
40	2 layers of 3.5" Poly ISO

PolyISO™ Recycle Content

Between 16% and 43 % by weight, depending upon thickness (55% post consumer and 45% post industrial). Refer to Mule-Hide LEED memo.

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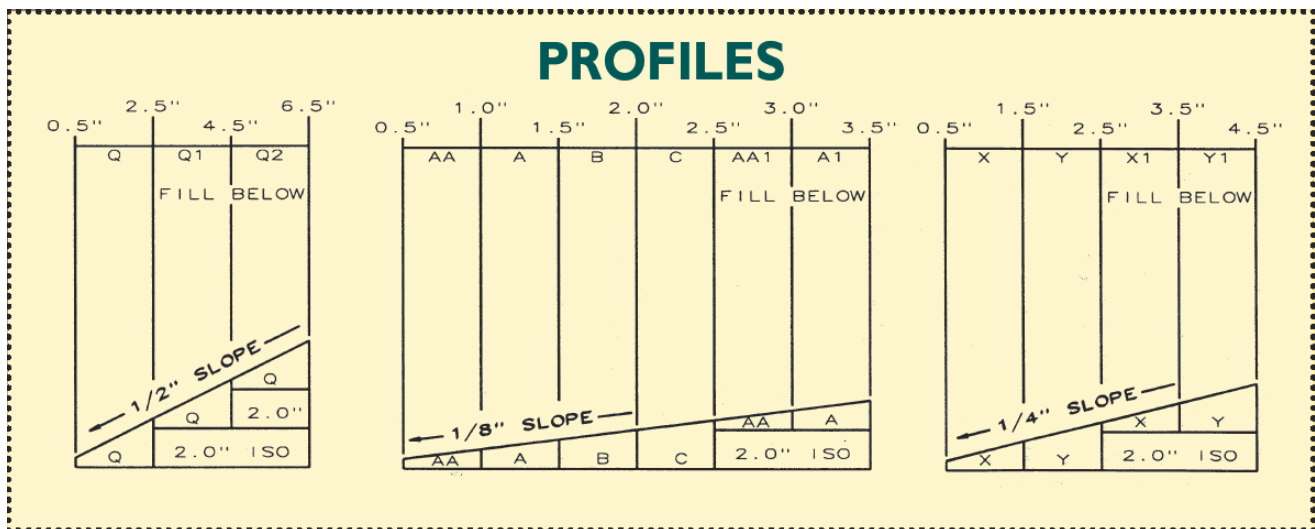
TYPICAL PHYSICAL PROPERTIES (Continued)

Nominal Thickness** (Inches)	(mm)	Poly ISO 1™		Metal Deck Max. Flute
		LTTR R-Value (revised Jan-2014)	C-Value	
1.0	25	5.7	.175	2 5/8
1.5	38	8.6	.116	4 3/8
1.8	46	10.3	.097	4 3/8
2.0	51	11.4	.088	4 3/8
2.5	64	14.4	.069	4 3/8
2.6	66	15.0	.067	4 3/8
3.0	76	17.4	.057	4 3/8
3.5	89	20.5	.049	4 3/8
3.8	97	22.3	.045	4 3/8
4.0	102	23.6	.042	4 3/8
4.3	109	25.5	.039	4 3/8
4.5	114	26.8	.037	4 3/8

*Long Term Thermal Resistance Values are based on ASTM C1289 (revised Jan-2014) and CAN/ULC S770 which provides for a 15-year time weighted average.

**Other thicknesses available upon special request.

SUPPLEMENTAL INFORMATION



PACKAGING

Factory applied packaging is only intended for protection during transit. When stored outside or at the job site, the insulation must be stored at least 4" above ground level and completely covered with a weatherproof covering such as a tarpaulin. **Warning - Do Not Leave Exposed:** This product will burn if exposed to an ignition source of sufficient heat and intensity, or an open flame.

CODE APPROVALS/COMPLIANCE

Poly ISO 1™ complies with the requirements of the following specifications, test and code requirements when properly installed.

- * Federal Specification HH-I-1972/GEN and HH-I-1972/2, Class 1
- * ASTM C 1289-05a, Type II, Class 1, Grade 2 (20 psi), Grade 3 (25 psi)
- * FM Standard 4450/4470 Approval, Class 1
- * UL Standard 1256 Classification

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CODE APPROVALS/COMPLIANCE (continued)

- * UL Standard 790 Classification
- * UL Standard 263 Fire Resistance Classification

INSTALLATION INSTRUCTIONS

Ballasted Single-Ply Membrane Systems - Mule-Hide Poly ISO 1™ does not require attachment to the deck in this system. All boards must be tightly fitted together to prevent movement, separation or damage during the installation of the membrane system. All gaps greater than 1/4" must be filled. After the membrane is installed, sufficient amounts of ballast must be applied to prevent membrane and insulation movement. Refer to the Mule-Hide Manual and FM Loss Prevention Data Sheet 1-29 for information regarding ballasting guidelines.

Mechanically Attached Single-Ply Membrane Systems - Mule-Hide Poly ISO 1™ should be attached with Mule-Hide fasteners and insulation plates (or FM Approved fasteners) using a minimum of 4 fasteners per 4' x 4' board (1 fastener per 4 square feet) and a minimum of 6 fasteners per 4' x 8' board (1 fastener per 5.33 square feet). Refer to the Mule-Hide Manual for proper fastener placement.

Fully Adhered Single-Ply Membrane Systems - Mule-Hide Poly ISO 1™ should be installed with the perforated side down. Insulation attachment will vary depending upon insulation thickness and job requirements. If the top layer is less than 2" thick, install a minimum of 8 fasteners per 4' x 4' board (1 fastener per 2 square feet) and a minimum of 16 fasteners per 4' x 8' board (1 fastener per 2 square feet). If the top layer is 2" thick or thicker, install 4 fasteners per 4' x 4' or 8 fasteners per 4' x 8' insulation board. Refer to the Mule-Hide Manual for proper fastener density and placement. Additional fastening may be required for certain job conditions. In some instances hot steep asphalt or insulation adhesive may be used to attach the Mule-Hide Poly ISO 1 to approved concrete decks. Only 4' x 4' boards may be used. Contact Mule-Hide's Technical Department for specific requirements and procedures.

PROTECTION & SAFETY

Mule-Hide maintains Safety Data Sheets on all of its products. Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers. Mule-Hide's Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Mule-Hide products in your facilities.

ADDITIONAL INFORMATION

The information given on this PDS is subject to change without notice. Always check the Mule-Hide website at www.mulehide.com for the latest information, changes and updates or contact Mule-Hide Products Company at 800-786-1492.

DISCLAIMER

The statements provided concerning the material shown are intended as a guide for material usage and are believed to be true and accurate at the time of printing. No statement made by anyone may supersede this information, except when done in writing by Mule-Hide Products Co., Inc. Since the manner of use is beyond our control, Mule-Hide does not authorize anyone to make any warranty of merchantability or fitness for any particular purpose or any other warranty, guarantee or representation, expressed or implied, concerning this material. Buyer and user accept the product under these conditions and assume the risk of any failure, any injury person or property (including that of the user), loss or liability resulting from the handling, storage or use of the product whether or not it is handled, stored or used in accordance with the directions or specifications. Mule-Hide must be notified in writing of any claims and be given the