LAMINATORS
Composite Panel Solutions

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THERMOLITE™ U-MAX
TECHNICAL DATA SHEET

PRODUCT: Thermolite U-MAX

EFFECTIVE: October 24, 2024

Description: Laminators Inc. Thermolite U-MAX is a multi-layered, insulated glazing panel that consists of two foam plastic cores bonded to three thermoplastic stabilizers with a texture/color finished sheet of aluminum on each face. Intended for use in standard glazing pockets of window, glazing, and curtain wall systems, panels include stepped edges on the interior face. Panels offer higher R-Values than standard 1 in Thermolite™ and Thermolite™ WE panels and are available in a range of thicknesses.

Properties:

Thickness	2-1/2 in (nom), standard
Weight	1.82 psf (+/-), standard
Core	Expanded Polystyrene (EPS) 2.0 pcf nominal density (Type IX)
	Polyisocyanurate (ISO) 2.0 pcf density (Type I)
Stabilizer	Extruded Corrugated Polypropylene
Aluminum Sheet (ASTM B209-14)	3003-H14/24, 3105-H14/24 & H26/28, 5005-H34 0.012 to 0.032 in
Texture Finish [1]	Smooth or Stucco-Embossed
Color Finish [1] (AAMA 2605-22)	PVDF/Kynar 500®, Polyester, or Anodized
Coefficient of Thermal Expansion, α (2015 ADM)	$13x10^{-6}$ in/in/°F

Fire Performance: [2]

Panel (EPS) [3] (ASTM E84-23)	Class A Flame Spread Index (FSI) = 0 Smoke Developed Index (SDI) = 20

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• EPS Core [4] (2018 IBC / 2603.5.4)	FSI ≤ 25 SDI ≤ 450
• ISO Core [5] (2018 IBC / 2603.5.4)	FSI = 20 SDI = 150
Panel (EPS) [6] (ASTM E84-18b)	FSI = 70 SDI = 850

Thermal: [7]

Core	Available Thickness (in)	R-Value (hr °F ft^2 / BTU)
EPS [8,9]	1-1/2	4.9
	2	7.1
	2-1/2	9.3
	3	11.5
	3-1/2	13.6
ISO [10,11]	1-1/2	6.1
	2	8.8
	2-1/2	11.5
	3	14.2
	3-1/2	16.9

Available Load-Carrying Capacities (R_n / Ω): [12,13,14,15]

0.027 to 0.032 in Sheets

Panel Span (in) [16]	≤ 24	30	36	42	48	54	60
Wind Load (psf) [17]	50	30	20	15	10	10	5

Notes:

1. Contact Laminators Sales/Customer Service team for availability.
2. Per International Building Code (IBC), panels shall be separated from the interior of a building with 1/2 in gypsum wallboard or other material tested in accordance with and meeting the acceptance criteria of NFPA 275.
3. Surface-burning characteristics are applicable to exterior panel face only. Values based on 1 in (nom) standard Thermolite panel due to similar panel construction.
4. Based on third-party documentation provided by manufacturer:
    a. UL Evaluation Report UL ER11783-01
    b. Certificate of Compliance 20150510-R11783
    c. UL Product iQ BRYX.R11056
5. Based on third-party documentation provided by manufacturer:
    a. ASTM E84-12 Report 12-11177

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b. Performance meets 2603.5.4; however, tested thickness exceeds maximum

6. Surface-burning characteristics are applicable to interior panel face only. Values based on 3-1/2 in (nom) panel.
7. Linear interpolation between values is permitted.
8. Extrapolated from R-Value for 1 in (nom), standard Thermolite panel based on ASTM C518-21 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus performed by independent laboratory per ASHRAE 90.1-2010.
9. Calculated values for all other panel thicknesses based on Carpenter Company published R-Value for 2.0 pcf density (Type IX) EPS foam at 75ºF.
10. Extrapolated from R-Value for 1 in (nom), standard Thermolite panel based on ASTM C518-10 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus performed by independent laboratory per ASHRAE 90.1-2010.
11. Calculated values for all other panel thicknesses based on Elliot Company published aged R-Value for 2.0 pcf density (Type I) ISO foam.
12. Based on internal testing performed in conjunction with ASTM E529 Standard Guide for Conducting Flexural Tests on Beams and Girders for Building Construction.
13. Capacities calculated for a 2-1/2 in (nom), standard panel with EPS core, actual sheet thickness, and double-sided typical construction (matching sheet thickness on each face). Contact Laminators Technical Support for capacities of panels less than 2-1/2 in and/or with less than 0.027 sheet thickness.
14. Based on the Aluminum Design Manual (ADM).
15. Project-specific Components and Cladding wind loads (Required Strength, Ra) shall not exceed Available Load-Carrying Capacities (Allowable Strength, Rn / Ω) for given spans. Wind loads are to be calculated per ASCE/SEI 7 Minimum Design Loads for Buildings and Other Structures.
16. Panel Span applies to shortest dimension of finished panel.
17. Strength conditions govern for given capacities; therefore, International Building Code (IBC) deflection limits have been met. Capacities capped at values shown but are higher for spans less than indicated. Contact Laminators Technical Support if higher capacities are required.