LAMINATORS
Composite Panel Solutions

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THERMOLITE™ U-MAX
Technical Data Sheet

PRODUCT: Thermolite™ U-MAX

EFFECTIVE: October 19, 2021

Description: 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 thicknesses ranging from 1-1/2 to 3-1/2 in.

Properties:

Thickness	2-1/2 in (nom), standard	
Weight	1.82 psf (+/-), standard	
Core	Expanded Polystyrene (EPS): 2.0 pcf density (Type IX)	Polyisocyanurate (ISO): 2.0 pcf density (Type I)
Stabilizers	Extruded Corrugated Polypropylene	
Sheets (ASTM B209)	3003-H14/24, 3105-H14/24 & H26/28, 5005-H34 Aluminum 0.012 to 0.032 in	
Texture Finish	Smooth or Stucco-Embossed	
Color Finish (AAMA 2605)	PVDF/Kynar 500®, Polyester, or Anodized	
Thermal Expansion	13.1×10^{-6} in/in/°F	

R-Values: [1]

	Thickness (in)	R-Value [2,3] (hr °F ft^2 / BTU)		Thickness (in)	R-Value [2,4] (hr °F ft^2 / BTU)
EPS Core	1-1/2	5.2	ISO Core	1-1/2	6.1
	2	7.3		2	8.8
	2-1/2	9.5		2-1/2	11.5
	3	11.7		3	14.2
	3-1/2	13.9		3-1/2	16.9

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Performance: [5,6]

Fire Performance (ASTM E84)	Class A (2 in w/ EPS) Flame Spread Index (FSI) = 0 Smoke Developed Index (SDI) = 100	Class A (1 in w/ ISO) Flame Spread Index (FSI) = 15 Smoke Developed Index (SDI) = 350

Available Load-Carrying Capacities (R_n / Ω): [7,8,9,10]

0.027 to 0.032 in Sheets

Panel Span (in) [11]	≤ 24	30	36	42	48	54	60
Wind Load (psf) [12]	50	30	20	15	10	10	5

Notes:

1. Linear interpolation between values is permitted.
2. R-Values are extrapolated from 1 in (nom) standard Thermolite™ panel and based on ASTM C518 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.
3. Calculated values based on Carpenter Company published R-Value for 2.0 pcf density (Type IX) EPS foam at 75ºF.
4. Calculated values based on Elliot Company published aged R-Value for 2.0 pcf density (Type I) ISO foam.
5. Surface-burning characteristics are applicable to exterior conditions only and are not applicable to interior conditions. Values based on 1 in (nom) standard Thermolite™ panel due to similar panel construction.
6. 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.
7. Based on testing performed in conjunction with ASTM E529 Standard Guide for Conducting Flexural Tests on Beams and Girders for Building Construction.
8. Capacities are 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.
9. Capacities are governed by the Aluminum Design Manual (ADM) using a Factor of Safety = 1.65 for yield strength.
10. 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.
11. Panel Span applies to shortest dimension of finished panel.
12. Strength conditions govern for given capacities; therefore, International Building Code (IBC) deflection limits have been met. Capacities are capped at values shown but are higher for spans less than indicated. Contact Laminators Technical Support if higher capacities are required.