

# THERMOLITE™ WE

## Technical Data Sheet

**PRODUCT:** Thermolite™ WE

**EFFECTIVE:** October 19, 2021

**Description:** Thermolite™ WE is an insulated glazing panel that consists of a foam plastic core bonded on both sides to a thermoplastic stabilizer with a texture/color finished sheet of aluminum on each face that encapsulate the edges for metal-to-metal hairline joints in butt-glazed applications. Intended for use in window, glazing, and curtain wall systems, panels are available in thicknesses ranging from 3/4 to 2-1/2 in.

**Properties:**

|                             |   |   |
|-----------------------------|---|---|
| Thickness                   | 1 in (nom), standard  |   |
| Weight                      | 1.40 psf (+/-), standard  |   |
| Core                        | Expanded Polystyrene (EPS):<br>2.0 pcf density (Type IX)                  | Polyisocyanurate (ISO): 2.0 pcf<br>density (Type I) |
| Stabilizers                 | Extruded Corrugated Polypropylene   |   |
| Sheets<br>(ASTM B209)       | 3003-H14/24, 3105-H14/24 & H26/28, 5005-H34 Aluminum<br>0.012 to 0.032 in |   |
| Texture Finish              | Smooth (exterior), Smooth or Stucco-Embossed (interior)                   |   |
| Color Finish<br>(AAMA 2605) | PVDF/Kynar 500® or Anodized   |   |
| Thermal Expansion           | 13.1x10 <sup>-6</sup> in/in/°F  |   |

**R-Values:** <sup>1</sup>

|  | EPS Core       |   |  | ISO Core       |   |
|--|----------------|---|--|----------------|---|
|  | Thickness (in) | R-Value <sup>2,3</sup><br>(hr °F ft <sup>2</sup> / BTU) |  | Thickness (in) | R-Value <sup>2,4</sup><br>(hr °F ft <sup>2</sup> / BTU) |
|  | 3/4            | 2.2   |  | 3/4            | 2.6   |
|  | 1              | 3.3   |  | 1              | 3.9   |
|  | 1-1/2          | 5.5   |  | 1-1/2          | 6.6   |
|  | 2              | 7.7   |  | 2              | 9.3   |
|  | 2-1/2          | 9.8   |  | 2-1/2          | 12.0  |

**Performance:** <sup>5,6</sup>

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

**Go beyond the panel... and go to the next level!**

**Available Load-Carrying Capacities ( $R_n / \Omega$ ):** <sup>7,8,9,10</sup>

0.012 to 0.015 in Sheets

|                               |      |    |    |    |    |    |
|-------------------------------|------|----|----|----|----|----|
| Panel Span (in) <sup>11</sup> | ≤ 30 | 36 | 42 | 48 | 54 | 60 |
| Wind Load (psf) <sup>12</sup> | 60   | 50 | 40 | 35 | 30 | 25 |

0.022 to 0.024 in Sheets

|                               |      |    |    |    |
|-------------------------------|------|----|----|----|
| Panel Span (in) <sup>11</sup> | ≤ 42 | 48 | 54 | 60 |
| Wind Load (psf) <sup>12</sup> | 60   | 50 | 45 | 40 |

0.027 to 0.032 in Sheets

|                               |      |    |    |    |
|-------------------------------|------|----|----|----|
| Panel Span (in) <sup>11</sup> | ≤ 42 | 48 | 54 | 60 |
| Wind Load (psf) <sup>12</sup> | 65   | 55 | 50 | 45 |

Notes:

1. Linear interpolation between values is permitted.
2. R-Value for 1 in (nom) standard panel 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 for all other panel thicknesses based on Carpenter Company published R-Value for 2.0 pcf density (Type IX) EPS foam at 75°F.
4. Calculated values for all other panel thicknesses 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.
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 1 in (nom) standard panel with EPS core, actual sheet thickness, and double-sided typical construction (matching sheet thickness on each face). For Single-Sided panels (i.e. non-matching sheet thickness), refer to the chart corresponding to the lesser sheet thickness for capacities. Contact Laminators Technical Support for capacities of panels less than 1 in.
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,  $R_a$ ) shall not exceed Available Load-Carrying Capacities (Allowable Strength,  $R_n / \Omega$ ) 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.