

**SUBJECT: PREMIER SIPS ENGINEERING PROPERTIES**

Premier SIPS are recognized as a structural component for use as wall, roof, or floor panels that resist structural loads. The structural capacity of Premier SIPS has been determined through extensive testing with leading independent third-party accredited testing laboratories. The results of these tests have been published in Premier SIPS Load Charts and recognized in ICC ES ESR-4524, ESL-1207 and ESL-1208.

The complete package of structural information that supports Premier SIPS Load Charts #3A and #6A have been analyzed and reviewed to provide basic SIP Engineering Properties for Premier SIPS. These Premier SIPS Engineering Properties (See Tables 1 and 2 on this Technical Bulletin) are suitable for use with NTA IM 14 TIP 01, “Engineered Design of SIP Panels using NTA Listing Report Data.” A copy of NTA IM 14 TIP 01, as well as all current Premier SIPS Load Charts can be accessed at [www.premiersips.com](http://www.premiersips.com).

| <b>TABLE 1: PREMIER SIPS ENGINEERING <sup>1, 2</sup></b> |                    |
|--|--------------------|
| Property   | Value <sup>3</sup> |
| Facing Tensile Strength, $F_t$ (psi)                     | 495                |
| Facing Compressive Strength, $F_c$ (psi)                 | 550                |
| Elastic Modulus (Bending), $E_b$ (psi)                   | 1,677,107          |
| Shear Modulus, $G$ (psi)                                 | 284                |
| Core Shear Strength, $F_v$ (psi)                         | 4.7                |
| Core Compressive Modulus, $E_c$ (psi)                    | 400                |
| Shear Reference Depth, $h_o$ (in.)                       | 4.5                |
| Shear Depth Factor Exponent, $m$                         | 0.59               |
| Face-peeling Factor, $C_p$                               | 0.975              |
| Apparent Foam Compression Strength (psi)                 | 21                 |

<sup>1</sup> All properties are based on a minimum panel width of 24-in.

<sup>2</sup> Refer to NTA IM14 TIP 01 SIP Design Guide for details on engineered design using basic properties.

<sup>3</sup> Values apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports.

**TABLE 2: PREMIER SIPS SECTION PROPERTIES**

| Panel Thickness, $h$ (in.) | Core Thickness, $c$ (in.) | Dead Weight, $W_d$ (psf) | Facing Area, $A_f$ (in. <sup>2</sup> /ft.) | Shear Area, $A_s$ (in. <sup>2</sup> /ft.) | Moment of Inertia, $I$ (in. <sup>4</sup> /ft.) | Section Modulus, $S$ (in. <sup>3</sup> /ft.) | Radius of Gyration, $r$ (in.) | Centroid -to- Facing Dist., $y_c$ (in.) |
|----------------------------|---------------------------|--------------------------|--|---|--|--|-------------------------------|---|
| 4.5                        | 3.63                      | 3.2                      | 10.5                                       | 48.8                                      | 43.3   | 19.3   | 2.03                          | 2.25                                    |
| 6.5                        | 5.63                      | 3.4                      | 10.5                                       | 72.8                                      | 96.5   | 29.7   | 3.03                          | 3.25                                    |
| 8.25                       | 7.38                      | 3.5                      | 10.5                                       | 93.8                                      | 160.2  | 38.8   | 3.91                          | 4.13                                    |
| 10.25                      | 9.38                      | 3.7                      | 10.5                                       | 117.8                                     | 252.7  | 49.3   | 4.91                          | 5.13                                    |
| 12.25                      | 11.38                     | 3.9                      | 10.5                                       | 141.8                                     | 366.3  | 59.8   | 5.91                          | 6.13                                    |