EXTREME PANEL TECHNOLOGIES

SUBJECT: EXTREME SIPs ENGINEERING PROPERTIES

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

The complete package of structural information that supports Extreme Panel Load Charts #3A and #6A has been analyzed and reviewed to provide basic SIP Engineering Properties for Extreme SIPS. These Extreme 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 Extreme Panel Load Charts, can be accessed at www.extremepanel.com.

TABLE 1: EXTREME PANEL ENGINEERING[1,2]

PROPERTY	VALUE[3]
Facing Tensile Strength, Ft (psi)	495
Facing Compressive Strength, Fc (psi)	550
Elastic Modulus (Bending), Eb (psi)	1,677,107
Shear Modulus, G (psi)	284
Core Shear Strength, Fs (psi)	4.7
Core Compressive Modulus, Ec (psi)	400
Shear Reference Depth, h_o (in)	4.5
Shear Depth Factor Exponent, m	0.59
Face-peeling Factor, Cp	0.975
Apparent Foam Compression Strength (psi)	21

Footnotes:
[1]All properties are based on a minimum panel width of 24-in.
[2]Refer to NTA IM14 TIP 01 SIP Design Guide for details on engineered design using basic properties.
[3]Values apply to panels constructed with the OSB strength axis oriented either parallel or perpendicular to supports.

TABLE 2: EXTREME SIPs SECTION PROPERTIES								
Panel Thickness, *h* (in.)	Core Thickness, c (in.)	Dead Weight, W_d (psf)	Facing Area, *A* (in.^{2}/ft.)	Shear Area, A_v (in.^{2}/ft.)	Moment of Inertia, *I* (in.^{4}/ft.)	Section Modulus, *S* (in.^{3}/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	2.25
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	49.8	4.91	5.13
12.25	11.38	3.9	10.5	141.8	366.3	59.8	5.91	6.13