

**SUBJECT: PREMIER SIPS TESTING SUMMARY**

Premier SIPS are Building Code Recognized as complying to national and local building codes that are guided by the International Code Council’s (ICC) series of I Code’s, including the International Residential Code (IRC), International Building Code (IBC) and the International Energy Conservation Code (IECC).

To provide testing and quality control data required by the ICC to achieve I Codes recognition and compliance, Premier SIPS has conduct numerous tests of Structural Capacity, Fire Duration Performance, Energy/Sound values and ratings and the qualification and quality Control of the Components and process of SIP manufacturing.

The summary of Premier SIPS’ testing data and technical information is provided in this Technical Bulletin.

<b>STRUCTURAL</b>						
<b>STANDARD</b>	<b>ASTM E72</b>	<b>ICC-ES AC04</b>	<b>ASTM E455</b>	<b>ASTM E695</b>	<b>ASTM E2322</b>	<b>ASTM E2126</b>
<b>TEST TITLE:</b>	<b>STRENGTH TESTS OF PANELS FOR BUILDING CONSTRUCTION</b>	<b>ICC-ES SANDWICH PANEL ACCEPTANCE CRITERIA</b>	<b>ROOF DIAPHRAGM CONSTRUCTIONS</b>	<b>RESISTANCE TO IMPACT LOADING</b>	<b>CONCENTRATED FLOOR LOAD</b>	<b>CYCLIC (REVERSED) LOAD TEST FOR SHEAR RESISTANCE OF WALLS</b>
<b>ALSO KNOWN AS:</b>	ASTM E1803				IBS SECTION 1607.1	
<b>RESULTS:</b>	<ul style="list-style-type: none"> <li>• Axial Load</li> <li>• Transverse Load</li> <li>• Racking Shear</li> </ul> <p><sup>1</sup> See Premier SIPS Load Charts for structural capabilities.</p>	<p>Premier SIPS meet AC04 requirements</p> <p><sup>4</sup> See Premier SIPS ICC-ESR Evaluation Report.</p>	<p>Diaphragm design capacity up to 1,130 plf</p> <p><sup>1</sup> See Premier SIPS Load Charts for structural capabilities.</p>	<p>Panel supported on short ends withstood repetitive impacts to the center of 90 ft. lbs., 240 ft. lbs., and 600 ft. lbs. with no deleterious effects.</p>	<p>Meets 2,000 lb. concentrated floor load requirement. Floor panels successfully supported 6,000 lbs. placed on 30"x30" area at various locations on the panel and panel joints.</p>	<p>Shear resistance capacity up to 1,000 plf designs for seismic categories A through F.</p>

FIRE					
STANDARD	ASTM E84	UL 1715	ASTM E119	ASTM E119	ASTM E119
<b>TEST TITLE:</b>	<b>SURFACE BURNING CHARACTERISTICS</b>	<b>CORNER ROOM BURN</b>	<b>FIRE TEST OF BUILDING CONSTRUCTION AND MATERIALS</b>	<b>FIRE TEST OF BUILDING CONSTRUCTION AND MATERIALS</b>	<b>FIRE TEST OF BUILDING CONSTRUCTION AND MATERIALS</b>
<b>ALSO KNOWN AS:</b>	UL 723 NFPA 255	FM 4880 NFPA 286	UL 263 NFPA 251	UL 263 NFPA 251	UL 263 NFPA 251
<b>RESULTS:</b>	<sup>3</sup> EPS Core Flame Spread: 20 Smoke Developed: 150-300 Interior of panel covered with ½" gypsum board Flame Spread: 10 Smoke Development: 0	PASS Using ½" gypsum board on the interior of the Premier SIP	20 Min. Fire Resistant wall assembly	<sup>2</sup> 60 Min. Fire Resistant wall assemblies	<sup>2, 4</sup> 60 Min. Fire Resistant Roof/Ceiling Assembly
			½" gypsum board as interior finish	2 layers 5/8" Type X gypsum board as fire side finish. Passed 30 PSI hose stream  Double 2X connection and 1 layer 5/8" Type C gypsum board as fire side finish. Passed 30 PSI hose stream	2 layers 5/8" Type X gypsum board as interior finish

COMPONENTS					
COMPONENT	OSB	ADHESIVE	ADHESIVE	EPS CORE	EPS CORE
<b>TEST TITLE:</b>	<b>WOOD-BASED STRUCTURAL PANELS</b>	<b>ADHESIVES FOR STRUCTURAL LAMINATED WOOD PRODUCTS</b>	<b>SANDWICH PANEL ADHESIVES</b>	<b>SPECIFICATION FOR POLYSTYRENE INSULATION</b>	<b>TERMITE EXPOSURE</b>
<b>STANDARD:</b>	DOC PS2-92 APA PR-N610	ASTM D 2559	ICC-ES AC05	ASTM C578 ICC-ES AC10	ICC-ES AC239
<b>RESULTS:</b>	OSB meets Exposure I - 24/16 span rating qualified as facing of structural insulated panels.	Adhesive meets strength requirements of Class 2 Type II adhesive.	Adhesive used in Premier SIPS manufacture meets ICC-ES Acceptance Criteria for sandwich panel adhesive.	Premier SIPS EPS core (termite treated) exceeds the minimum values in ASTM C578.	<sup>2, 5</sup> Premier SIPS EPS core with termite treatment recognized by UL to be in compliance with ICC acceptance criteria 239.

<sup>1, 2, 3, 4, 5, 6</sup> SEE LAST PAGE FOR FOOTNOTES.

ENERGY/SOUND					
STANDARD	ORNL	ASTM C236	ORNL	ASTM E90	ASTM C423
<b>TEST TITLE:</b>	<b>STEADY STATE THERMAL PERFORMANCE OF BUILDING ASSEMBLIES</b>	<b>STEADY STATE THERMAL PERFORMANCE OF BUILDING PANELS BY GUARDED HOT BOX</b>	<b>BLOWER DOOR</b>	<b>SOUND TRANSMISSION CLASS (STC)</b>	<b>SOUND ABSORPTION</b>
<b>ALSO KNOWN AS:</b>	WHOLE WALL R-VALUE	R-VALUE	AIR INFILTRATION		
<b>RESULTS:</b>	4 ½" Premier SIP with ½" gypsum board and plywood siding R = 14.1  2x4 and batt insulation with ½" gypsum board and plywood siding R = 9.6  2x6 and batt insulation with ½" gypsum board and plywood siding R = 13.7	6 ½" Premier SIP with ½" gypsum board mechanically fastened to the interior of the panel R = 21.2  Typical 2x6 construction using fiberglass batts tested under same standard R = 17.2	Controlled room built with 4 ½" Premier SIP = 9 cfm air leakage  Typical 2x6 construction using fiberglass batts tested under same configuration = 126 cfm air leakage	6 Achieved STC ratings from STC 28 to STC 59 using various facing assemblies of gypsum, air spaces, fiberglass and isolation cups	6 ½" Premier SIP Noise Reduction Coefficient = 0.15  Sound Absorption average = 0.17

#### FOOTNOTES:

- <sup>1</sup> See Premier SIPS Load Charts for complete details.
- <sup>2</sup> See ICC-ES report, contact your Premier SIPS supplier for a current copy.
- <sup>3</sup> See UL certificate for complete details.
- <sup>4</sup> For specific Fire Resistance, see ICC-ESR 4524.
- <sup>5</sup> See rigid insulation literature for complete details.
- <sup>6</sup> See Premier Technical Bulletins for assembly details.

#### ABBREVIATIONS:

ASTM = American Society for Testing and Materials  
 IBS = International Building Code  
 ICC-ES = International Code Council Evaluation Service  
 NFPA = National Fire Protection Agency  
 UL = Underwriters Laboratories Inc.  
 FM = Factory Mutual

#### NOTE:

Data for this testing summary derived from the contribution of Premier Building Systems' SIPs Manufacturing Businesses.

## QUALITY ASSURANCE

Premier SIPS are made to the standards of an industry leading quality control program monitored by ICC-NTA and recognized by national code agencies.