

## **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 conducted 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.

<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>

<b>FIRE</b>					
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

<b>COMPONENTS</b>					
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	<sup>6</sup> 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.