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R-Control® SIPs (Structural Insulated Panels)

ES Recognized

CLASSIFIED UL

Product Testing Summary

Using Nationally Recognized Standards

Note: Information deemed reliable at time of printing. Please visit www.r-control.com for latest information. June 2004

SIPs Structural

TEST TYPE	ASTM E 72	ICC ES AC04	ASTM E 455	ASTM E 695	IBC Sec. 1607
TEST TITLE	STRENGTH TESTS OF PANELS FOR BUILDING CONSTRUCTION	ICC ES SANDWICH PANEL ACCEPTANCE CRITERIA	ROOF DIAPHRAGM CONSTRUCTIONS	RESISTANCE TO IMPACT LOADING	CONCENTRATED FLOOR LOAD
ALSO KNOWN AS:	ASTM E 1803				UBC Sec. 1607
RESULTS	- Axial Load - Transverse Load - Racking Shear [1] See R-Control SIP Load Design Charts for structural capacities	[1] R-Control SIPs meet AC04 requirements [4] See R-Control ICC ES Code Report	Diaphragm design capacity up to 850 plf [1] See R-Control SIP Load Design Charts	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.	Meets 2,000 lb. concentrated floor load requirement. Floor panels successfully supported 6,000 lbs placed on 30" x 30" area at various locations on the panel and panel joints.

Fire

TEST TYPE	ASTM E 84	UL 1715	ASTM E 119	ASTM E 119	ASTM E 119
TEST TITLE	SURFACE BURNING CHARACTERISTICS	CORNER ROOM BURN	FIRE TEST OF BUILDING CONSTRUCTION AND MATERIALS	FIRE TEST OF BUILDING CONSTRUCTION AND MATERIALS	FIRE TEST OF BUILDING CONSTRUCTION AND MATERIALS
ALSO KNOWN AS:	UL 723 UBC STAN. 8-1 NFPA 255	UBC 26-3	UL 263 UBC STAN. 7-1 NFPA 251	UL 263 UBC STAN. 7-1 NFPA 251	UL 263 UBC STAN. 7-1 NFPA 251
RESULTS	[3] EPS Core Flame Spread - 20 Smoke Development 150-300 [3] Interior of Panel Covered With 1/2" Gypsum Board Flame Spread - 10 Smoke Development-0 [3] Interior of Panel Covered With BlazeGuard[6] Flame Spread - 5 Smoke Development 10-35 [3] Exterior of Panel Covered With 3/8" Plywood Flame Spread - 130-160 Smoke Development 95-190	Pass - Using 1/2" Gypsum Wall Board on the Interior of the R-Control SIP Pass - Using BlazeGuard[6] on the Interior of the R-Control SIP	20 Min. Fire Resistant wall assembly using 5/8" gypsum board as interior finish	[2] 60 Min. Fire Resistant wall assembly using 2 layers 5/8" Type X gypsum board as fire side finish. Passed 30 PSI hose stream. [2] 60 Min. Fire Resistant wall assembly using double 2X connection and 1 layer 5/8" Type C gypsum board as fire side finish. Passed 30 PSI hose stream.	[2, 4] 60 Min. Fire Resistant Roof/Ceiling Assemblies UL P517 2 layers 5/8" Type X gypsum as interior finish UL P822 sprayed fire proofing as interior finish

[1,2,3,4,5,6] See page 4 for Notes

SIPs Energy/Sound

TEST TYPE	ORNL	ASTM C 236	ORNL	ASTM E 90	ASTM C 423
TEST TITLE	**STEADY STATE THERMAL PERFORMANCE OF BUILDING ASSEMBLIES**	**STEADY STATE THERMAL PERFORMANCE OF BUILDING PANELS BY GUARDED HOT BOX**	**BLOWER DOOR**	**SOUND TRANSMISSION CLASS (STC)**	**SOUND ABSORPTION**
ALSO KNOWN AS:	**WHOLE WALL R-VALUE**	**R-VALUE**	**AIR INFILTRATION**		
RESULTS	4 1/2" R-Control SIP with 1/2" gypsum board and plywood siding R=14.1 2 x 4 and batt insulation with 1/2" gypsum board and plywood siding R=9.6 2 x 6 and batt insulation with 1/2" gypsum board and plywood siding R=13.7	6 1/2"R-Control SIP & 1/2" gypsum board mechanically fastened to the interior of the panel R=21.2 Typical 2 x 6 construction using fiberglass batts tested under same standard. R = 17.2	Controlled room built with 4 1/2" R-Control SIP 9 cfm air leakage Typical 2 x 6 construction using fiberglass batts tested under same configuration. 126 cfm air leakage	R-Control SIP and one layer 1/2" Gypsum STC = 29 R-Control SIP and one layer 1/2" Gypsum using Resilient Channels and 1/2" Fiberglass STC = 39 R-Control SIP and two layers 5/8" Type X Gypsum on one side. Two layers 5/8" Type X Gypsum separated using 1 1/2" Z-Furring Channels and 1" sound attenuating fiberglass batt opposite side STC = 51	6 1/2" R-Control SIP Noise Reduction Coefficient = 0.15 Sound Absorption average = 0.17

Components

COMPONENT	OSB	ADHESIVE	ADHESIVE	EPS CORE	EPS CORE
TEST TITLE	**WOOD-BASED STRUCTURAL PANELS**	**ADHESIVES FOR STRUCTURAL LAMINATED WOOD PRODUCTS**	**SANDWICH PANEL ADHESIVES**	**SPECIFICATION FOR POLYSTYRENE INSULATION**	**TERMITE EXPOSURE**
TEST TYPE	**DOC PS2-92**	**ASTM D 2559**	**ICC ES AC05**	**ASTM C578**	**ICC ES EG 239**
RESULTS	OSB meets Exposure I 24/16 span rating	Adhesive meets strength requirements of class 2 type II adhesive	Adhesive used in R-Control SIP manufacture meets ICC ES Acceptance Criteria for sandwich panel adhesive	R-Control Perform Guard EPS Core exceeds the minimum values in ASTM C 578	[2,5] R-Control SIP Perform Guard EPS Core recognized by ICC ES to be in compliance with Evaluation Guide 239

[1,2,3,4,5,6] See page 4 for Notes

Quality Assurance

R-Control products are made to the standards of an industry leading Quality Control Program monitored by Underwriters Laboratories Inc. and recognized by national codes agencies.

[1] See R-Control SIP Load Design Charts for complete details.
[2] See ICC ES report, contact R-Control for current copy.
[3] See AFM/UL certificate for complete details.
[4] For specific Fire Resistance, see Underwriters Laboratories Fire Resistance Directory.
[5] See R-Control Perform Guard EPS literature for complete details.
[6] Blazeguard coating used in manufacture of R-Control FireFinish and FireResist SIPs.

* Abbreviations:

ASTM = American Society for Testing and Materials
IBC = International Building Code
ICC ES = International Code Council Evaluation Service
NFPA = National Fire Protection Association
UBC = Uniform Building Code
UL = Underwriters Laboratories Inc.

Industry Affiliations:
SIPA, NAHB, EPSMA,
AIA, NRCA, SPRI

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