



murus[®]

Engineered Energy Savings

Polyurethane Foam Core with Patented Cam-lock Tongue and Groove System for Premium Performance

EPS Foam Core Provides High Quality, Dependable Performance

XPS Foam Core Features Excellent Thermal and Structural Performance and Moisture Impermeability

ENERGY STAR[®] qualified

Ideal for Most Green Building Projects

Highly Energy Efficient with Superior Insulating Values

Excellent air-tightness for Reduced Energy Consumption



murus[®]
STRUCTURAL INSULATING PANELS

The Murus Company was founded in 1987 for the sole purpose of manufacturing the very best Structural Insulating Panels (SIPs) in the industry, while providing our clients with outstanding client services and support throughout the project term. The Murus manufacturing facility is located in Mansfield, Pennsylvania, and Murus SIPs are shipped throughout North America.

Murus Structural Insulating Panels (SIPs) are used for exterior wall, roof and floor applications in residential and light commercial construction. Murus SIPs replace conventional wood framing and provide insulated, finish-ready surfaces. Each panel consists of a rigid foam insulation core which is formed between two layers of sheathing skins. Structural panels are manufactured with rated skins and are capable of supporting axial and transverse loads. Curtain wall panels are only intended to support transverse loads and must be attached to a structural frame. Oriented strand board (OSB) is the most widely used skin material for structural applications and is readily available in an array of sizes.

Total Client Support Murus offers outstanding technical support and professional client services for the duration of the project, as outlined below.

Design and Engineering Murus provides support and technical information to professional specifiers regarding product specifications, structural capabilities, connections, and fastening requirements.

Technical Drawings Murus supports professionals by providing direction and details, or by providing panel layout drawings or shop drawings specific to each project.

Job-Specific Manufacturing Murus manufactures SIPs according to a particular project's specifications and requirements. Murus SIPs are available in numerous core materials, R-values, thicknesses, lengths, and finishes.

Green Building Qualified Murus is an ENERGY STAR® Insulation Partner. Energy efficient features built into ENERGY STAR qualified homes, such as building envelopes constructed with Murus SIPs, improve comfort and indoor air quality while reducing energy usage. Murus Polyurethane and EPS SIPs are ideal for sustainable building projects as recognized by and listed in the GreenSpec Directory, an independent agency specializing in qualifying green construction products. Building with Murus SIPs will contribute to certification under the LEED and NAHB standards.

Environmentally Responsible The energy consumed by building structures is most often generated by the burning of fossil fuels at power plants, which contributes to risks of global warming, smog, and acid rain. Murus SIPs' solid core composite construction creates an exceptionally tight building envelope that significantly reduces these energy demands. Additionally, with optional factory pre-cutting, jobsite waste is virtually eliminated.

Factory Pre-Cutting Murus SIPs can be pre-cut at our factory on state-of-the-art computerized CNC (computer numeric controlled) equipment. The panels are then labeled to correspond with pre-cut drawings (included) for assembly and installation on site.

On-Site Technical Assistance Factory trained and experienced personnel are available for jobsite consultation and/or technical assistance to professional crews in the proper installation of Murus SIPs. Comprehensive installation manuals are provided with every order.



OSB-2100PUR

give the foam superior and uniform strength, as compared to elongated "rice-shaped" cells produced by polyisocyanurate lamination foams.

Cam-Lock System Murus's patented, high impact plastic Cam-Lock system saves considerably on installation time over other SIP systems, and can offer even greater time savings over conventional stud wall construction. Cam-Locks are located every two feet up the length of the panel edge and are engaged using a provided Cam-Lock wrench. In conjunction with the standard tongue and groove edge profile, Cam-Locks aid in providing a positive seal between panels, helping to eliminate moisture and air infiltration and creating an exceptionally strong, superior building system.

Tongue and Groove Edge Profile The molded tongue and groove edge profile assures quick, proper alignment of panel-to-panel joints. Once installed and sealed with spray foam, the result is a continuous uniformity of insulation that is lacking in spline connection systems.

Electrical Chase A standard electrical chase is embedded horizontally in the foam core of the Murus SIP during manufacturing. Three standard chase height options are available. Additional chase heights can be added; for example, a dedicated chase for countertop receptacle switches or communication wiring.

Faster Construction Time The composite construction of Murus SIPs greatly reduces the amount of time to complete project shell-in.

Superior Energy Efficiency With superior R-values per inch of thickness and consistent insulation through composite construction, a Murus Polyurethane SIP building envelope provides excellent air-tightness resulting in significant savings on heating and cooling energy. Murus SIPs undergo random testing by a third-party independent testing agency to assure the best and most consistent quality possible.

Fire Resistance The Murus Polyurethane foam core has a Class 1 Fire Resistance rating—the best available for combustible materials.

Lifetime Warranty The Murus lifetime warranty covers Murus Polyurethane SIPs against delamination. Contact Murus for complete warranty information.

Murus is an ENERGY STAR® Insulation Partner.

Listed with PFS, ICC, GreenSpec.

Polyurethane

Polyurethane Foam Core Murus Polyurethane foam is safe to humans and the environment. It does not contain formaldehyde, CFC's, HCFC's, or other ozone-depleting compounds, and is an organic material made from petroleum by-products and recycled materials. Murus Polyurethane foam provides the highest R-value per inch of thickness of any SIP foam core available.

Polyurethane SIP Manufacturing Process The proprietary Murus manufacturing method, Uniform Dispersion Molding (UDM), is a key component in creating our Polyurethane panel's superior characteristics. The UDM method enhances the properties of the foam and creates the strongest possible bond between the skins. The liquid foam is uniformly dispersed throughout the mold; the foam expands, bonds, and cures under 12 to 14 psi. UDM produces uniform foam density throughout the panel with spherical cells that



Foam Core SIPs

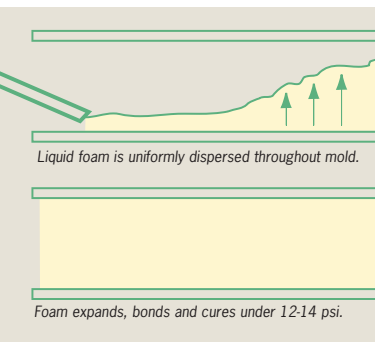
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THE MURUS OSB-2100/PUR STRUCTURAL INSULATING PANEL

Dimensions and Weights			
Series	2145	2155	2165
OVERALL THICKNESS:	4-5/8"	5-5/8"	6-5/8"
THICKNESS TOLERANCE:	+/- 1/8"	*	*
WIDTH:	48"	*	*
WIDTH TOLERANCE:	+0", -1/8"	*	*
(Finish Size)			
STANDARD LENGTHS:	4', 6', 8', 9', 10', 12',	*	*
(Feet)	14', 16', 18', 20', 22', 24'	*	*
LENGTH TOLERANCE:	+/- 1/4"	*	*
WEIGHT:	3.95 lb./sq. ft.	4.15 lb./sq. ft.	4.35 lb./sq. ft.
Insulating Core			
TYPE:	Polyurethane Closed Cell Foam		
THICKNESS:	3-11/16"	4-11/16"	5-11/16"
DENSITY:	2.2 lb./cu. ft.	*	*
R-VALUE @ 75°F:	6.76 per in. thickness	*	*
System R-VALUE:	26	33	40

Insulating Core Properties	Design Values	
K FACTOR: (aged foam)	.148	ASTM C-518
COMPRESSIVE STRENGTH:	23 psi	ASTM D-1621
COMPRESSIVE ¹ MOE:	682 psi	ASTM D-1621
SHEAR STRENGTH:	31 psi	ASTM C-273
SHEAR MODULUS:	203 psi	ASTM C-273
FLEXURE ² MOR:	52 psi	ASTM C-203
FLEXURE MODULUS ³ (MD):	587 psi	ASTM C-203
TENSILE STRENGTH:	37 psi	ASTM D-1623
TENSILE MODULUS:	611 psi	ASTM D-1623
WVT/PERM INCHES:	1.0	ASTM E-96
FOAM FIRE RATING:	Class 1	**UL723
FLAME SPREAD:	20	**UL723
SMOKE DEVELOPED:	300	**UL723

¹MOE: Modulus of Elasticity, ²MOR: Modulus of Rupture, ³MD: Machine Direction.
⁴Design Values are mean derived from multiple specimens.
 *Specification or value is the same as the OSB-2145 Panel.
 **UL723 is not necessarily a representation of performance in an actual fire. Class 1 is the highest rating available for combustible materials.



Outside Skins	
TYPE:	APA or equivalent listed oriented strand board (OSB) meeting PS 2-04 requirements
GRADE:	Exposure-1
THICKNESS:	7/16"

The photography and illustrations within this brochure are for illustrative purposes only. Product information and specifications are as accurate as possible at the time of printing but are subject to change without notice.

It is the responsibility of the owner, builder, or independent architect, engineer, or designer to provide proper engineering in compliance with all applicable fire and building codes.

Other Panel Systems Available:

CLAD-2100 (OSB/OSB/PC)	Exterior Skin. 7/16" Exposure-1, APA or equivalent listed oriented strandboard (OSB) meeting PS 2-04 requirements. Interior Skin (exposed). 3/4" Standard Grade (kiln dried), WP4-Eastern White Pine, T&G with V-groove face pattern.
PTP-2100 (PT/PT) (Subject to Availability)	Exterior and Interior Skins. 1/2" CA .10 - CDX Grade, APA or equivalent rated pressure treated plywood.
CB-2100 (CB/CB)	Exterior and Interior Skins. 10 mm (also available in 12 mm) Cement bonded particle board comprised of wood particles and cement.
MMR-2100 (OSB/MMR) (Roof Applications Only)	Exterior Skin. 7/16" Exposure-1, APA or equivalent listed oriented strandboard (OSB) meeting PS 2-04 requirements. Interior Skin. 1/2" Moisture and Mold-Resistant gypsum wallboard.
T-1-11-2100 (OSB/OSB/T-1-11)	Exterior Skin. 7/16" Exposure-1, APA or equivalent listed oriented strandboard (OSB) meeting PS 2-04 requirements. Interior Skin (exposed). 5/8" 303-6 Grade (8 in. on center face pattern), T-1-11 pine plywood.
FB-2100 (OSB/FB)	Exterior Skin. 7/16" Exposure-1, APA or equivalent listed oriented strandboard (OSB) meeting PS 2-04 requirements. Interior Skin. 1/2" Gypsum Wallboard - Fiber Reinforced.
PTP/FB-2100 (PT/FB) (Subject to Availability)	Exterior Skin. 1/2" CA .10 - CDX Grade, APA or equivalent rated pressure treated plywood. Interior Skin. 1/2" Gypsum Wallboard - Fiber Reinforced.
CP-2100 (OSB/SB)	Exterior Skin. 1/4" Oriented Strand Board (OSB)(7/16" Exposure-1 meeting PS 2-04 requirements optional for nailbase). Interior Skin. 1/2" Low Density Wood Fiber Composite (Sound Board), Fiber Board Insulating Sheathing.

APPLICATION	SKINS	OSB-2100 (OSB/OSB)	CLAD-2100 (OSB/OSB/PC)	PTP-2100 (PT/PT)	CB-2100 (CB/CB)	MMR-2100 (OSB/MMR)	T-1-11-2100 (OSB/OSB/T-1-11)	FB-2100 (OSB/FB)	PTP/FB-2100 (PT/FB)	CP-2100 (OSB/SB)
LOAD BEARING		•		•						
CURTAIN WALL		•	•	•	•		•	•	•	
ROOF SPANS UP TO 4FT.		•	•	•	•	•	•	•	•	
ROOF SPANS OVER 4FT.		•	•	•	•		•			
RESIDENTIAL CONSTRUCTION		•	•	•						•
COMMERCIAL CONSTRUCTION		•	•	•	•		•	•	•	
STRUCTURAL STEEL FRAMING		•		•	•			•	•	
INSULATED GARAGES		•		•	•					
INSULATED WAREHOUSES		•		•	•			•	•	
TIMBER FRAME STRUCTURES		•	•	•		•	•	•	•	
HEAVY TIMBER RAFTER SYSTEMS		•	•	•		•	•	•	•	
GLUE LAMINATED STRUCTURES		•	•	•			•		•	
MANUFACTURED ROOF TRUSSES		•	•	•			•	•	•	•
TROPICAL CLIMATES				•	•				•	
POOL ENCLOSURES		•		•	•					

EPS and XPS Foam Core SIPs

Murus EPS (Expanded Polystyrene) SIPs are a high quality competitively priced alternative to conventional construction, offering dependable performance and superior R-values. EPS SIPs are ENERGY STAR® qualified and are compliant with IRC Section 614.

EPS Foam Core The EPS foam manufacturing process consists of expanding the foam core material into a large block, cutting it to the desired core thickness, then pressure-laminating it to the panel skin surfaces. An extremely durable one-part structural urethane adhesive is used which is reacted to set while under pressure. The resulting bond is stronger than the material it laminates together.

Murus XPS (Extruded Polystyrene) SIPs are ENERGY STAR qualified and can provide the highest R-value of all Murus panel foam core types - as high as R-57. Murus XPS foam is virtually impervious to water and moisture penetration. With higher densities and compressive strengths, XPS foam provides structural strength and integrity, making Murus XPS SIPs an excellent choice when budget considerations are not a priority.

XPS Foam Core The XPS foam manufacturing process consists of extruding the foam into the desired shape and thickness, milling it to assure dimensional uniformity, and then pressure-laminating it to the panel skins. The same durable one-part structural urethane adhesive is used to laminate our XPS SIPs as is used to laminate our EPS SIPs.

Murus EPS and XPS SIPs are installed using wooden key splines to join the panels together. Typical panel-to-panel connection is achieved using two (interior and exterior) plywood key splines. Panels are manufactured with core dimensions that allow dimensional lumber to be incorporated for additional load-bearing support, if required.

Murus EPS and XPS SIPs are available in a variety of thicknesses and sizes, up to 8' wide (EPS; 4' wide XPS) and up to 24' in length. Electrical wiring can be accommodated through the addition of an optional horizontal electrical chase. Additional chase heights can be added; for example, a dedicated chase for countertop receptacle switches or communication wiring.

Fire Resistance The Murus EPS and XPS foam cores have a Class 1 fire resistance rating – the best available for combustible materials.

Warranty Murus EPS and XPS SIPs carry a limited 10-year warranty against delamination and defects in materials and workmanship. Contact Murus for warranty details.

EPS and XPS SIPs are ENERGY STAR® qualified.



OSB-2100EPS



OSB-2100XPS

MURUS OSB-2100/EPS STRUCTURAL INSULATING PANEL

Dimensions and Weights

Series	2145EPS	2165EPS	2185EPS	21105EPS	21125EPS
OVERALL THICKNESS:	4-1/2"	6-1/2"	8-1/4"	10-1/4"	12-1/4"
THICKNESS TOLERANCE:	+/- 1/8"	*	*	*	*
WIDTH:	48" or 96"	*	*	*	*
WIDTH TOLERANCE:	+/- 1/8"	*	*	*	*
STANDARD LENGTHS:					
(48" WIDTHS X):	8, 9, 10, 12, 14, 16, 18, 20, 22 & 24'	*	*	*	*
(96" WIDTHS X):	24'	*	*	*	*
LENGTH TOLERANCE:	+/- 1/4"	*	*	*	*
WEIGHT:	3.55 lb./sq. ft.	3.75 lb./sq. ft.	3.90 lb./sq. ft.	4.05 lb./sq. ft.	4.20 lb./sq. ft.

Insulating Core

TYPE:	Expanded Polystyrene Foam				
THICKNESS:	3-5/8"	5-5/8"	7-3/8"	9-3/8"	11-3/8"
DENSITY:	1 lb./cu. ft. (nominal)	*	*	*	*
R-VALUE @ 75°F:	3.85 per in. thickness	*	*	*	*
SYSTEM R-VALUE:	16	23	30	38	45

Insulating Core Properties

Design Values		
K FACTOR:	.26	ASTM C-518
COMPRESSIVE STRENGTH:	10 psi	ASTM D-1621
FLEXURAL STRENGTH:	25 psi minimum	ASTM C-203
TENSILE STRENGTH:	28 psi minimum	ASTM C-297
SHEAR STRENGTH:	16 psi minimum	ASTM C-273
SHEAR MODULUS:	440 psi minimum	ASTM C-273
MODULUS OF ELASTICITY:	915 psi minimum	ASTM C-203
WVT/PERM INCH:	.0 maximum	ASTM E-96
WATER ABSORPTION (by volume):	4% maximum	ASTM C-272
MAXIMUM SERVICE TEMPERATURE:	165° F	
FOAM FIRE RATING:	Class 1	**ASTM E84
FLAME SPREAD:	<25	**ASTM E84
SMOKE DEVELOPED:	<450	**ASTM E84

* Specification or value is the same as the OSB-2145EPS Panel.
**ASTM E-84 is not necessarily a representation of performance in an actual fire.
Class 1 is the highest rating available for combustible materials.

Outside Skins

TYPE:	APA or equivalent listed oriented strand board (OSB) meeting PS 2-04 requirements	
GRADE:	Exposure-1	
THICKNESS:	7/16"	

Other Panel Systems Available: MMR-2100EPS, CLAD-2100EPS, NB-2100EPS

MURUS OSB-2100XPS STRUCTURAL INSULATING PANEL

Dimensions and Weights

Series	2145XPS	2165XPS	2185XPS	21105XPS	21125XPS
OVERALL THICKNESS:	4-1/2"	6-1/2"	8-1/4"	10-1/4"	12-1/4"
THICKNESS TOLERANCE:	+/- 1/8"	*	*	*	*
WIDTH:	48"	*	*	*	*
WIDTH TOLERANCE:	+/- 1/8"	*	*	*	*
STANDARD LENGTHS:					
(48" WIDTHS X):	8, 9, 10, 12, 14, 16, 18, 20, 22 & 24'	*	*	*	*
LENGTH TOLERANCE:	+/- 1/4"	*	*	*	*
WEIGHT:	3.70 lb./sq. ft.	4.00 lb./sq. ft.	4.20 lb./sq. ft.	4.50 lb./sq. ft.	4.75 lb./sq. ft.

Insulating Core

TYPE:	Extruded Polystyrene Foam				
THICKNESS:	3-5/8"	5-5/8"	7-3/8"	9-3/8"	11-3/8"
DENSITY:	1.5 lb./cu. ft. (nominal)	*	*	*	*
R-VALUE @ 75°F:	5 per in. thickness	*	*	*	*
SYSTEM R-VALUE:	19	29	37	47	57

Insulating Core Properties

Design Values		
K FACTOR:	.2	ASTM D-1622
COMPRESSIVE STRENGTH:	20 psi	ASTM D-1621
FLEXURAL STRENGTH:	50 psi minimum	ASTM C-203
TENSILE STRENGTH:	50 psi minimum	ASTM D-1623
SHEAR STRENGTH:	25 psi minimum	ASTM C-273
SHEAR MODULUS:	330 psi minimum	ASTM C-273
MODULUS OF ELASTICITY:	N/A	
WVT/PERM INCH:	1.5 maximum	ASTM E-96
WATER ABSORPTION (by volume):	0.5% maximum	ASTM C-272
MAXIMUM SERVICE TEMPERATURE:	165° F	
FOAM FIRE RATING:	Class 1	**ASTM E-84
FLAME SPREAD:	5	**ASTM E-84
SMOKE DEVELOPED:	165	**ASTM E-84

* This numerical flame spread rating is not intended to reflect hazards presented by this or any material under actual fire conditions. Results are for 4 inches maximum thickness.

* Specification or value is the same as the OSB-2145XPS Panel.
**ASTM E-84 is not necessarily a representation of performance in an actual fire.
Class 1 is the highest rating available for combustible materials.
Blowing agent - HCFC 142b. Ozone depletion potential: 0.065

Outside Skins

TYPE:	APA or equivalent listed oriented strand board (OSB) meeting PS 2-04 requirements	
GRADE:	Exposure-1	
THICKNESS:	7/16"	



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