

murus[®]
STRUCTURAL INSULATING PANELS
Building the Future



GREEN BUILDING CERTIFICATION GUIDE

Green Building and Murus

The green building movement continues to gain momentum as more builders and owners embrace the value of environmentally conscious approaches. Architects and specifiers have embraced green principles, leading them to seek out products that enable them to design sustainable structures. Often, they rely on specific data that demonstrates how a product will contribute to widely accepted green building standards.

Green Building Standards

This guide provides detailed information to architects, owners, and builders on how Murus products may contribute to certification under the LEED guidelines and ICC-700 National Green Building standard.

LEED (Leadership in Energy and Environmental Design), the rating system created by the U.S. Green Building Council, provides a framework for certifying a structure's sustainability.

The National Association of Home Builders and the International Code Council partnered to establish the ICC-700 National Green Building Standard. Certified by the American National Standards Institute, this comprehensive green building program covers single-family homes, multi-family

homes, residential remodeling projects, and land development.

Murus and Sustainability

Murus is a leading manufacturer of Structural Insulated Panels (SIPs), high performance building panels used in floors, walls, and roofs for residential and light commercial buildings. SIPs combine interior and exterior sheathing with a rigid, solid core of insulation in one composite panel.

Murus SIPs provide a number of environmental benefits: superior energy efficiency and insulating properties, recyclable foam cores, and the use of fast-growing, renewable wood species, among others. In addition, Murus SIPs are structural, eliminating the need for stud construction that depletes our diminishing timber resources. These and other green attributes may contribute to specific credits in categories defined by LEED and ICC-NGBS.

According to a 2008 BASF life cycle analysis eco-efficiency study of residential insulation, SIPs' high R-values combined with low air leakage rates have the lowest overall environmental impact in energy use, resource consumption, emissions, and land use.

Energy and Atmosphere

Optimize Energy Performance

Murus SIPs enhance the insulating value of the building envelope with their superior R-values. The higher the R-value of a material, the greater its insulating capacity. Murus SIPs' R-values ranges from R-15 to R-67, depending upon the type of foam core and its thickness. Unlike fiberglass batt

insulation, Murus foam cores do not sag, shift, settle, compress, or otherwise compromise the integrity of the original R-value rating. The contribution to this credit is dependent on the R-value of the specific Murus product being used, in combination with other building product materials used on the building envelope.

R-Values

PUR (Polyurethane)			EPS (Expanded Polystyrene)			GPS (Graphite-Enhanced Polystyrene)		
Thickness	R-value		Thickness	R-value		Thickness	R-value	
	@75°	@40°		@75°	@40°		@75°	@40°
4-5/8"	R-27	R-29	4-1/2"	R-15	R-16	4-5/8"	R-18	R-19
5-5/8"	R-34	R-37	6-1/2"	R-23	R-25	6-1/2"	R-28	R-29
6-5/8"	R-41	R-44	8-1/4"	R-29	R-32	8-1/4"	R-36	R-38
			10-1/4"	R-37	R-40	10-1/4"	R-45	R-48
			12-1/4"	R-45	R-49	12-1/4"	R-55	R-58
			15"	R-55	R-60	15"	R-67	R-72

LEED (LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN) GREEN BUILDING RATING SYSTEM*

Category	Credit	LEED for New Construction (points)	LEED for Homes (points)
PERFORMANCE PATH	EA1: Annual Energy Use	---	1-29
Energy & Atmosphere	EA2: Optimize Energy Performance	1-18	---
PRESCRIPTIVE PATH	EA7: Air Infiltration	---	1-2
Materials & Resources	EA8: Envelope Insulation	---	1-2
	MR2: Environmentally Preferable Products	---	1-4
	MR3: Bldg Product Disclosure & Optimization	1	---
	MR3: Construction Waste Management	---	1-3
	MR4: Material-Efficient Framing	---	1-2
Indoor Environmental Quality	IEQ2: Low Emitting Materials	1-3	---
	IEQ3: Construction Indoor Air Quality Management Plan	1	---
	IEQ5: Thermal Comfort-Design	1	---

Murus SIPs have the potential to contribute up to 24 points for LEED-NC and up to 42 points for LEED for Homes. Check with the USGBC for specifics on your particular application of Murus SIPs.

*LEED v4.0 chart information courtesy of the Structural Insulated Panel Association (SIPA)

Air Infiltration

Because of their solid core construction, Murus SIPs virtually eliminate air infiltration and stratification. A structure enclosed with Murus SIPs will be up to five times tighter than typical enclosure systems.

Materials and Resources

Construction Waste Management

Murus's optional factory CNC pre-cutting service will virtually eliminate on-site panel waste.

Certified Wood

The standard OSB manufacturers are members of the Sustainable Forestry Initiative® Program. OSB manufactured with FSC Certified wood may be used when available.

Environmentally Preferable Products

Murus uses OSB made with renewable softwood and hardwood species including pine, poplar, and aspen, from self-regenerating forests or plantation-grown trees. The OSB contains no added urea-formaldehyde other than the minimal amount naturally occurring in wood, which contributes to safe indoor environmental quality.

The blowing agent used in Murus's PUR SIPs has a zero Ozone Depletion Probability (ODP), and an ultra low Global Warming Potential (GWP) rating of 1, making Murus Polyurethane foam safe for humans and our environment.

Material-Efficient Framing

The efficient use of Murus SIPs creates a continuous whole-wall system with virtually no thermal bridging, breaks, or air infiltration as are present with wood or steel framing systems. A tight building envelope will contain the inside conditioned air, resulting in significantly less heating and cooling fuel consumption and lower energy costs while providing exceptional living comfort. SIPs can also earn points toward building certification for roof and floor applications.

Architects, engineers, builders, and homeowners are turning to Murus SIPs - the most technologically advanced building system available. Murus engages in ongoing research and development that results in innovative products and significant advancement in SIP technology. By continually focusing on our product and process improvements, Murus maintains the highest level of quality possible. We will continue to develop advances that boost energy efficiency, benefit the environment, increase strength, reduce construction time, and improve overall performance.

ICC 700-2020 NGBS (NATIONAL GREEN BUILDING STANDARD)

Category	Credit	Number of Points Attainable
ALL PATHS		
Material Usage	601.2.2 Higher grade or higher strength materials are used	3 points
Prefabricated Components	601.5 Four points each for SIP walls, roof, floor	12 points max
Wood-Based Products	606.2 OSB is certified under forestry certification program	4 points max
Resource-Efficient Materials	608.1 SIPs use fewer natural resources for structural performance	3 points
Life Cycle Assessment	610.1 Must use ISO14044 whole-building life cycle assessment tool	3 points
Resilient Construction	613 SIPs designed to resist forces generated by snow, wind, or seismic activity	15 points max
Air Barrier, Sealing, Testing, Envelope testing, Insulation	701.4.3.2 Building envelope tightness and insulation verified	Mandatory
Installation and Performance Verification	705.6.1 SIPs provide complete air barrier when properly sealed	3 points
Wood Materials	901.4 SIPs use OSB that meets indoor air quality requirements	10 points max
Insulation	901.11 SIP foam insulation meets indoor air quality standards	4 points
ENERGY PERFORMANCE PATH		
Energy Performance Levels	702.2 Homes must be more efficient than ICC IECC via analysis	30+ points
ENERGY PRESCRIPTIVE PATH		
Building Envelope	703.1.1 SIPs provide continuous insulation	Mandatory
Grade 1 Insulation Installation	703.1.1.2 SIPs provide Grade 1 insulation	Mandatory
Insulation and Air Sealing	703.1.2 Thermal envelope in accordance with applicable ICC IECC	Mandatory
Building Envelope Leakage	703.2.4 Maximum envelope leakage rate	15 points max
Ductwork	703.4.3 All ductwork is located in conditioned space	10 points

Murus SIPs have the potential to contribute up to 87+ points when following the Energy Performance Path or 82 points following the Energy Prescriptive Path. Check with the ICC or NAHB for specifics on your particular application of Murus SIPs.

Additional available Paths are: Energy Rating Index (ERI) Target Path, and Alternative Bronze, Silver, and Gold Paths



PO Box 220
3234 Route 549
Mansfield, PA 16933
800.626.8787
info@murus.com
www.murus.com

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This information is based on the current version of the LEED rating system revised 2019

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