



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 and NGBS standards.

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. An online scoring tool is available at www.nahbgreen.org.

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 NGBS.

According to a 2008 BASF study of residential insulation efficiency, 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-77, 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
4-5/8"	R-27	4-1/2"	R-15	4-5/8"	R-18
5-5/8"	R-34	6-1/2"	R-23	6-1/2"	R-28
6-5/8"	R-41	8-1/4"	R-29	8-1/4"	R-36
		10-1/4"	R-37	10-1/4"	R-45
		12-1/4"	R-45	12-1/4"	R-55

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

Category	Credit	LEED for New Construction (points)	LEED for Homes (points)
PERFORMANCE PATH Energy & Atmosphere PRESCRIPTIVE PATH	EA1: Annual Energy Use	---	1-29
	EA2: Optimize Energy Performance	1-18	---
	EA7: Air Infiltration	---	1-2
	EA8: Envelope Insulation	---	1-2
Materials & Resources	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.

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.

Regional Materials

Projects located within 500 miles of Murus's manufacturing plant may potentially contribute points in this category. Only the percentage of the product that is sourced within a 500 mile radius can be assigned a credit value. The source of the raw material for the core insulation is generally understood as undefinable. Therefore, the insulation portion of the SIP product cannot be counted for this credit.

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 is not considered a Volatile Organic Compound (VOC), making Murus Polyurethane foam safe for humans and the 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.

NATIONAL GREEN BUILDING STANDARD™*

Category	Credit	Number of Points Attainable
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	607.1 SIPs use fewer natural resources for structural performance	3 points
Life Cycle Analysis	609.1 Must use ISO 14044 complaint life cycle assessment tool	3 points
PERFORMANCE PATH		
Energy Cost Performance Levels	702.2 Homes must be 60% more efficient than 2006 IECC	20 points
PRESCRIPTIVE PATH		
Building Envelope	703.1.1 SIPs provide continuous insulation	35 points max
Grade 1 Insulation Installation	703.1.2.1 SIPs provide Grade 1 insulation	15 points max
Insulation and Air Sealing	703.2.1.1 SIPs provide complete air barrier when properly sealed	15 points max
Ducts	704.4.4 All ductwork is located in conditioned space	12 points
Installation and Performance	704.6.2.1 Points earned for third party blower door test	15 points max
Verification		
Wood Materials	901.4.5 SIPs use OSB that meets indoor air quality requirements	4 points
Insulation	901.11 SIP foam insulation meets indoor air quality standards	4 points max

Murus SIPs have the potential to contribute up to 42 points to the National Green Building Standard following the Performance Path or 122 points following the Prescriptive Path. Check with the NGBS for specifics on your particular application of Murus SIPs.

*LEED and National Green Building Standard chart information courtesy of the Structural Insulated Panel Association (SIPA)



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Building Council. www.usgbc.org

This information is based on the current versions of
the LEED rating systems revised 2017