

murusTM

STRUCTURAL INSULATING PANELS

Engineered Energy Savings



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 NAHB 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 Green Building Standard is an emerging rating system for residential construction developed by the National Association of Home Builders (NAHB).

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 and the use of fast-growing, SFI certified, 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 NAHB.

Energy & 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 range from R-16 to R-57, depending upon the type of foam core and its thickness. Unlike fiberglass batt insulation, Murus foam

cores do not sag, shift, settle, or 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)

Thickness	R-Value
4 -1/2 "	R-26
5 -1/2 "	R-33
6 -1/2 "	R-40

EPS (Expanded Polystyrene)

Thickness	R-Value
4 -1/2 "	R-16
6 -1/2 "	R-23
8 -1/4 "	R-30
10 -1/4 "	R-38
12 -1/4 "	R-45

XPS (Extruded Polystyrene)

Thickness	R-Value
4 -1/2 "	R-19
6 -1/2 "	R-29
8 -1/4 "	R-37
10 -1/4 "	R-47
12 -1/4 "	R-57

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

Category	Credit	LEED for New Construction (points)	LEED for Homes (points)
Energy & Atmosphere	EA 1 Optimize Energy Performance	1 – 19	1 – 34
	EA 2 Insulation	–	2
	EA 3 Air Infiltration	–	3
Materials & Resources	MR 1 Material-Efficient Framing	–	1 – 3
	MR 2 Construction Waste Management	1 – 2	–
	MR 2 Environmentally Preferable Products (roof, floor, wall)	–	1/2 – 1 1/2
	MR 3 Waste Management	–	1 – 3
	MR 5 Regional Materials	1 – 2	–
	MR 7 Certified Wood	1	–
Indoor Environmental Quality	IEQ 4.4 Low-Emitting Materials-Composite Wood and Agrifiber	1	

Murus SIPs have the potential to contribute up to 25 points for LEED-NC and up to 46.5 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 three to five times tighter than typical enclosure systems.

Energy Star

Murus Structural Insulating Panels are ENERGY STAR® qualified. Compared with standard construction, Murus's ENERGY STAR qualified SIPs create a high-performance building envelope that will reduce the overall energy consumption of the building.

Materials & 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. Regional OSB materials are available from Murus as a premium option upon request.

Certified Wood

The standard OSB manufacturer is a member of the Sustainable Forestry Initiative® Program. OSB manufactured with FSC Certified wood is available as an option upon request.

Environmentally Preferable Products

Murus uses SFI certified 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 HFC 245fa 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.

NAHB MODEL GREEN HOME BUILDING GUIDELINES

Category	Credit	Number of Points Attainable (points)
Resource Efficiency	2.1.6 B Provide a panelized wall system	6
	2.1.6 C Provide a panelized roof system	6
	2.6.2 Use certified wood and wood-based materials and products from all credible third-party-certified sources	4
Energy Efficiency	3.2.1 A,B,C Home is 15%,30%,40% above IECC 2003*	37,62,100
	3.3.1 A Increase effective R-value of building envelope using SIPs	8
	3.3.1 B Incorporate air sealing package to reduce infiltration	1-10
Indoor Environmental Quality	5.1.5 Composite wood/agrifiber panel products must contain no added urea-formaldehyde	6

* Murus SIPs exceed the insulation value of IECC 2009 for wall applications.

Murus SIPs have the potential to contribute up to 40 points to the NAHB Model Green Home Building guidelines following the prescriptive path or 122 points following the performance path. Check with the NAHB for specifics on your particular application of Murus SIPs.

Murus advocates and requires the installation of mechanical ventilation in Murus SIP structures. Therefore, an additional credit may be available under category 5.2.2, Indoor Environmental Quality, for as much as 10 points.



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Printed on recycled paper in the U.S.A.

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This information is based on the current versions of the LEED rating systems in effect May 2009.