

# How Superior Walls Insulated Precast Concrete Foundation Systems can help you in meeting Green Building Standards



**Superior Walls insulated precast concrete foundations** provide you with leading edge foundation technology that can help you attain green points for your new building project. NAHB\* and ICC\*\* joined to develop the National Green Building Standard (ICC 700-2008). This program awards points based on design and material selection (see chart). Superior Walls foundation systems offer drainage, pre-insulated panels and built-in dampproofing protection for residential and light-commercial projects. Homeowners benefit from the safe, comfortable, and energy efficient living space that all Superior Walls systems provide.

Homeowners will love the comfort of their new home, because, with the **built-in insulation** that is bonded directly to the precast concrete, Superior Walls create an excellent thermal and **air sealing envelope** around the living space. This minimizes the potential for drafts and energy loss, resulting in lower energy costs. For northern climates, additional insulation can be added to maximize R-value up to R-50+, and when we permanently join the wall panels together with bolts and our specially formulated **low VOC sealant**, you can experience a dry healthy living space. This happens because the face shell consists of 5000+ psi concrete with a low water to cement ratio. It keeps you dry with superior **moisture protection** that helps prevent the transfer of moisture through the wall, enhancing **durability**. The dampproofing is built-in (ICC-ES\*\*\* ESR 1662). No on-site sprays or bituminous coatings are required to make the walls dampproof, helping to keep the soil and local water supply free of contaminants.

Builders and homeowners can both appreciate that when installed, precast walls produce very little **jobsite waste**.

**Superior Walls** panels are **prefabricated precast assemblies**. The product is formed with 5000+ psi reinforced precast concrete studs, located at 24 inches O.C., that are cast with holes for wiring and ready to receive interior finishing. By utilizing the cavity space between the reinforced concrete studs, Superior Walls panels contain substantially less concrete (up to 70% less) and therefore **fewer resources** than traditional “built on-site” foundation walls. Superior Walls products are built to custom specifications in one of our many indoor production facilities strategically located throughout the United States where basements are prevalent. The raw materials used in our concrete come from **locally available indigenous sources**, and in most cases from within 300 miles of the project site. The panels are installed in just hours by a certified crew with a crane. This helps builders to shorten project construction time, which can **minimize the time soil is exposed to erosion**. Setting the walls on a minimum of 4” of crushed stone automatically creates a **capillary break** at the footing that can enhance indoor air quality.

**Superior Walls** is committed to providing our customers with energy efficient, resource efficient, durable, and family safe foundation products.

What about Recycled Materials?

DOW® extruded polystyrene used in Superior Walls panels contains up to 40% post industrial recycled content and all steel reinforcing bar used in Superior Walls panels is 100% recycled content.

\*National Association of Home Builders \*\*International Code Council \*\*\*International Code Council Evaluation Service

**Safe and Sustainable Structures**

from **Superior Walls**



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For more information go to [www.superiorwalls.com](http://www.superiorwalls.com)

## National Green Building Standard Credits

### Superior Walls Xi and Xi Plus

POTENTIAL POINTS

#### Lot Design Preparation and Development

503.3 (1.3.3)\*: **Activities scheduled to minimize soil exposure time to prevent erosion.**

5

#### Resource Efficiency \*\*\*

601.2.2: **Higher strength materials than commonly specified are used for structural elements.**

3

601.5 (1-3): **Prefabricated components. Precut or preassembled components or panelized or precast assemblies are utilized for a minimum of 90 percent for the floor, wall, and/or roof.**

4

602.1.1.2: **Capillary break is added on footing: Walls must be set on a minimum 4 inch thick clean crushed stone bed with proper drainage**

3

607.1: **Use products that contain fewer resources than traditional products.**

3

608.1: **Products containing fewer materials are used to achieve the same end use requirements.**

3

609.1: **Regional materials are used for major elements or components of the building.**

10 MAX

#### Energy Efficiency

701.4.3.1: **Insulation is installed per code. [Mandatory]**

Man.

702.2.2 or 703.1.1: **Home verified at least 15% above the IECC\*\*.**

30-100

703.1.2: **Insulation and air sealing. (Third party verification required.)**

4-7

#### Indoor Environmental Air Quality

901.10 **Interior low-VOC sealants: A min. of 85 percent of site-applied products used meet one or more listed requirements.**

5

1003.2.(3) **Information on maintaining relative humidity between 30 and 60% (SWA supplies a Homeowner Guide at each installation.)**

1

\*The 500, 600, 700, 900 and 1000 series numbers reference the 2012 National Green Building Standard (NGBS).

\*\*International Energy Conservation Code

\*\*\*NGBS Green Certified Practices are highlighted yellow. Go to [www.homeinnovation.com/greenproducts](http://www.homeinnovation.com/greenproducts) for more information.



## LEED-H CREDITS\*

### Superior Walls Xi and Xi Plus Walls

#### Innovation and Design

Durability Management Process (credit #2): **Contributes to the durability of a home. (Third-Party inspection and verification required by a LEED Green Rater for all durability measures.) Superior Walls protect against air and moisture infiltration and heat loss.**

3  
MAX

Innovative or Regional Design (credit #3): **Provides innovative green design and construction measures beyond the LEED rating system.**

1

#### Sustainable Sites

Non-Toxic Pest Control (credit #5): **Minimizes the need for poisons for the control of insects, rodents, and other pests.**

.5

#### Energy and Atmosphere

Optimize Energy Performance (credit #1): **Demonstrate exceptional energy performance of a home by meeting or exceeding the performance of an ENERGY STAR home.**

1-34

Insulation (credit #2): **Install installation that exceeds the R-value requirements listed in 2004 IECC by 5%. Installation verified by and energy rater or Green Rater. (Cannot use with credit #1)**

2

Air Infiltration (credit #3): **Minimize energy consumption caused by uncontrolled air leakage. Points are dependent upon testing and verification by an energy rater. (Cannot use with credit #1)**

3  
MAX

#### Material and Resources

Material Efficient Framing (credit #1): **Implement Framing Efficiencies by using structurally insulated panels (Concrete insulated panels) with correctly sized headers or fabricated off-site wall panels.**

1.5-4

Environmentally Preferable Products (credit #2): **Use environmentally preferred products that are locally produced within 500 miles of the home. Foundation aggregate and cement are eligible.**

.5

Waste Management (credit #3): **Reduce Waste Generation to below the industry norm. (Superior Walls are fabricated off-site)**

3  
MAX

POSSIBLE  
POINTS †

## LEED-NC CREDITS\*\*

### Superior Walls Xi and Xi Plus Walls

#### Energy and Atmosphere

Minimum Energy Performance (prerequisite credit #2): **Establish the minimum level of energy performance for the proposed building and systems by designing the building envelope to maximize energy performance.**

REQ

Optimize Energy Performance (credit #1): **Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.**

1-10

#### Material and Resources

Regional Materials (credit #5.1): **Use building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation. (10% based on cost of total material's value)**

1-2

Regional Materials (credit #5.2): **20% extracted, processed & manufactured regionally (point is in addition to 5.1)**

1

#### Indoor Environmental Quality

Minimum Indoor Environmental Quality Performance (prerequisite credit #1): **Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants. (Superior Walls panels are insulated; reduce air infiltration, and reduce dampness associated with basements)**

REQ

Indoor Environmental Quality (credit #2.1): **Provide ventilation to improve indoor air quality for occupants. (Superior Walls panels increase HVAC effectiveness with reduced air infiltration and the resulting increased effective R-value.)**

1

Indoor Environmental Quality (credits #3.1, #3.2): **Reduce indoor air quality problems resulting from the construction process in order to help sustain the comfort and well-being of construction workers and building occupants. (Superior Walls limit the transmission of moisture through the building envelope and the panels produce no dust or airborne contaminants from drying or curing.)**

1ea

POSSIBLE  
POINTS †

#### Indoor Environmental Quality (cont.)

Indoor Environmental Quality (credit #4.1): **Reduce quantity of indoor air contaminants by using low VOC sealants & adhesives. (At 49.85 g/L Superior Sealant is under VOC limits of 70 g/L for construction adhesive.)**

1

Thermal Comfort: Design: (credit #7.1, #7.2): **Provide a comfortable environment that supports the continued productivity and well-being of occupants. (Superior Walls panels are insulated and contribute to a comfortable environment per ASHRAE Standard 55-2004.)**

1ea

Daylight & Views: Daylight of Spaces: (credit #8.1, #8.2): **Provide a connection between indoor and outdoor spaces through the introduction of daylight. (Superior Walls panels can be produced with the necessary wall openings in order to gain this credit.)**

1ea

#### Innovation & Design Process

Innovation in Design: (additional credits) **Provide design teams and projects the opportunity for points for exceptional performance above LEED New Construction requirements, or innovative performance in categories not specifically addressed by LEED. (Superior Walls in an exceptional performing building product as a premium foundation system.)**

1-4

The rating systems for the Leadership for Energy and Environmental Design (LEED) were developed by U.S. Green Building Council. The LEED rating systems are credit-driven assessment programs. For a building to become LEED certified, it must meet several prerequisites and accumulate points in several categories. Superior Walls is a member of the U.S. Green Building Council.

\* Based on LEED for Homes January 2008

\*\* Based on LEED for New Construction Version 2.2

† Superior Walls products may help to contribute to points in a particular category where possible points are indicated.



For more information on these green rating systems and certification processes, you can download the complete LEED or NAHB guidelines from [www.usgbc.org/LEED](http://www.usgbc.org/LEED) or [www.nahbc.org/greenguidelines](http://www.nahbc.org/greenguidelines) or you may contact a local NAHB or LEED professional. To learn more about Superior Walls please visit [www.superiorwalls.com](http://www.superiorwalls.com).



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