

# StoPowerwall® ci

Portland cement stucco with continuous air and moisture barrier, continuous insulation, cavity wall design, and high performance finish



1)	Dow Type IV XPS Insulation Board
2)	Substrate: Glass mat gypsum sheathing in compliance with ASTM C 1177 (or building code compliant wood-based sheathing - Type V construction only)
3)	StoGuard® Air and Moisture Barrier
4)	Code compliant paper or felt WRB
5)	Sto DrainScreen drainage mat
6)	Code compliant minimum 2.5 lb/yd <sup>2</sup> (1.4 kg/m <sup>2</sup> ) self-furred galvanized steel diamond mesh metal lath
7)	ASTM C 926 compliant stucco (as manufactured or listed by Sto Corp.)
8)	Sto primer (optional)
9)	Sto Textured Finish

### System Description

StoPowerwall ci is an energy efficient stucco wall assembly with a continuous air and moisture barrier and continuous insulation. It combines the strength and durability of traditional stucco with an advanced cavity wall design and Sto high performance finishes.

### Uses

StoPowerwall ci can be used in residential or commercial wall construction where energy efficiency, superior aesthetics, and air and moisture control are essential in the climate extremes of North America

### Properties

<b>Weight (excluding sheathing / studs)</b>	< 12 psf (56.6 kg/m <sup>2</sup> )
<b>Assembly Thickness (from exterior stud face)</b>	Nominal 3-5/8" (92 mm) w 2" (51 mm) XPS
<b>R-value (insulation)</b>	5 – 10 ft <sup>2</sup> •h•°F / Btu (0.88 – 1.76 m <sup>2</sup> •K / W)
<b>Wind Load Resistance</b>	Capable of achieving: +65, -48 psf (+3.11 to -2.29 kPa)
<b>Compliance</b>	<ul style="list-style-type: none"> <li>IBC, IRC, and IECC</li> <li>ASHRAE 90.1-2010</li> </ul>
<b>Construction Types, Fire Resistance</b>	<ul style="list-style-type: none"> <li>I-V, NFPA 285 tested for types I-IV</li> <li>ASTM E119 1 hour rated assembly</li> </ul>

### Warranty

**Up to 12 year Limited Warranty available on Sto products, depending on options selected. 50 year thermal performance warranty available from Dow Building Solutions on XPS insulation.**

### Maintenance

Requires periodic cleaning to maintain appearance, repair of cracks and impact damage if they occur, recoating to enhance appearance of weathered finish. Sealants and other façade components must be maintained to prevent water infiltration.

### Limitations

Minimum insulation board thickness: 1 inch (25 mm). Maximum insulation board thickness: 2 inches (51 mm). Minimum stucco thickness : 3/4 inch (19 mm). Maximum stucco thickness: 7/8 inch (22 mm)  
 Fire resistance rated assemblies limited to 2 inch (51 mm) maximum insulation board thickness over non-load bearing steel frame.


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Wind load resistance: +65, -48 psf (+3.11, -2.29 kPa). Ultimate wind load resistance also depends on sheathing, sheathing attachment, stiffness of supporting construction, and strength characteristics of stucco mix. Test assembly if necessary to verify wind load resistance is in conformance with local code requirements. Design for maximum allowable deflection of L/360.
Cracking can occur in portland cement stucco. Cracking is generally not caused by a material defect in the stucco and can be minimized by following sound design and construction practices such as: proper installation of lath, proper incorporation of stress relief joints in the construction, proper sand gradation for field mixed stucco, proper proportioning of stucco mix ingredients, use of the minimum amount of water in the stucco mix for placement of stucco, avoiding the use of excess water, moist curing of the stucco after it has been applied, and proper sequencing of construction to avoid stresses in the freshly placed stucco.
Efflorescence is a normal occurrence in portland cement-based products and can affect final appearance of finish products.
For use on vertical above grade walls only. Do not use below grade or on roofs or roof-like surfaces.
Insulation material is flammable. Keep away from flame, ignition sources, and high heat (temperatures in excess of 165°F [74° C]). A 15 minute thermal barrier (typically ½ inch drywall) is required by most building codes to separate the insulation from the interior.
Dark or highly saturated finish colors may require added maintenance compared to light or pastel colors.
Air Barrier, insulation board, drainage mat, and base coat materials are not intended for prolonged weather exposure. Refer to component product bulletins for specific limitations involving exposure, use, handling and storage of component materials.

Sustainable Design	
Air Quality and VOC Compliance	
All finish coatings, adhesives, air barrier joint treatments and coatings meet US EPA (40 CFR 59) and SCAQMD (Rule 1113) emission standards for architectural coatings.	
LEED Credit Eligibility	
<ul style="list-style-type: none"> <li>• Energy and Atmosphere (EA)</li> <li>• Materials and Resources (MR)</li> <li>• Innovation in Design (IA)</li> </ul>	
Regulatory Compliance and Standards Testing	
<b>Refer to ICC ESRs 2323, 1607, and 2781 for code compliance</b>	Stucco base material is in compliance with ASTM C 926 when installed at a minimum thickness of ¾ inch (19 mm) in 2 coats to code compliant frame wall assemblies
<b>ICC ESR No. 1233 covering StoGuard Air &amp; Moisture Barrier</b>	Complies with 2006, 2009, 2012 IBC, IRC and IECC
<b>ASHRAE 90.1-2010<sup>1</sup></b>	Complies with Section 5, Building Envelope, air barrier and continuous insulation requirements
<b>ASTM 2357<sup>2</sup></b>	Air/Moisture barrier meets air leakage resistance criteria of $\leq 0.04$ cfm/ft <sup>2</sup> at 1.57 psf (0.2 L/s•m <sup>2</sup> at 75 Pa)
<b>NFPA 285<sup>3</sup></b>	Meets flame propagation criteria for use on Types I, II, III, IV construction with up to 2 inches (51 mm) of Dow Type IV XPS insulation board
<b>ASTM E 119<sup>4</sup></b>	Meets requirements for 1 hour rating over nonload-bearing fire-resistance-rated construction

1. Energy Standard for Buildings Except Low-Rise Residential Buildings
2. Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
3. Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components
4. Standard Test Methods for Fire Test of Building Construction and Material

<p><b>Sto Corp.</b> 3800 Camp Creek Parkway Building 1400, Suite 120 Atlanta, GA 30331</p> <p>Tel: 404-346-3666 Toll Free: 1-800-221-2397 Fax: 404 346-3119</p> <p><b>www.stocorp.com</b></p>	<p><b>SB - S507i</b> Revision: 000 Date: 10/2014</p> 	<p style="text-align: center;"><b>Attention</b></p> <p>Sto products are intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified by a qualified design professional, general contractor or builder. They should be installed in accordance with those specifications and Sto's instructions. Sto Corp. disclaims all, and assumes no, liability for on-site inspections, for its products applied improperly, or by unqualified persons or entities, or as part of an improperly designed or constructed building, for the nonperformance of adjacent building components or assemblies, or for other construction activities beyond Sto's control. Improper use of Sto products or use as part of an improperly designed or constructed larger assembly or building may result in serious damage to this product, and to the structure of the building or its components. <b>STO CORP. DISCLAIMS ALL WARRANTIES EXPRESS OR IMPLIED EXCEPT FOR EXPLICIT LIMITED WRITTEN WARRANTIES ISSUED TO AND ACCEPTED BY BUILDING OWNERS IN ACCORDANCE WITH STO'S WARRANTY PROGRAMS WHICH ARE SUBJECT TO CHANGE FROM TIME TO TIME.</b> For the fullest, most current information on proper application, clean-up, mixing and other specifications and warranties, cautions and disclaimers, please refer to the Sto Corp. website, <a href="http://www.stocorp.com">www.stocorp.com</a>.</p>
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