

StoTherm® ci **Wall Systems**



Smarter from the Outside In

sto

StoTherm® ci Wall Systems

Smart exteriors that make your buildings look brilliant

Utilizing world-class building science expertise, Sto® has engineered an advanced integrated exterior wall solution capable of meeting today's energy, design and performance requirements. StoTherm ci is a high-performance exterior wall system that seamlessly integrates the protection of our state-of-the-art StoGuard® air and moisture barrier with continuous insulation (ci) and advanced cavity wall design.

By providing superior moisture intrusion prevention along with substantial energy efficiency, StoTherm ci wall systems create a smarter building envelope that enhances interior climate control and comfort.

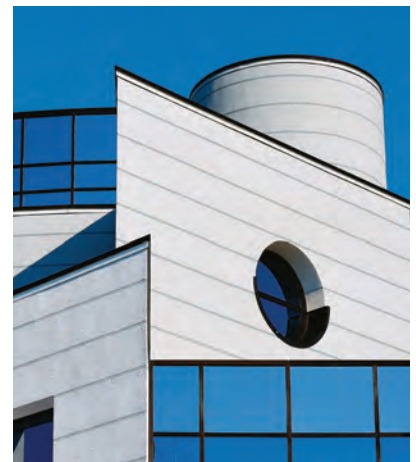
And because what covers the outside is just as important as the elements inside, StoTherm ci provides a wide range of protective and decorative finish and design options to distinguish your project.

The Result:

An exterior wall system that protects and enhances the design vision, structure and reputation behind every project, helping you build smarter from the outside in.



- 1. Sto Guard Air and Moisture Barrier**
(a seamless, fluid-applied barrier that improves energy efficiency and prevents moisture intrusion)
- 2. Sto Adhesive**
(ribbon-method application contributes to advanced cavity wall design that protects and extends wall system lifespan)
- 3. Continuous Insulation**
(continuous insulation layer that eliminates thermal bridging with an R-Value of 3.6 per inch)
- 4. Sto Mesh**
- 5. Sto Basecoat**
- 6. Sto Primer**
- 7. Sto Finish**



Performance. Savings. Possibilities.



Photo: Courtesy of Developer/Owner: Ridgewood Bushwick Senior Citizens Council, Inc. and Architect: Chris Benedict, RA

The perfect balance of form and function

Matching performance with aesthetically pleasing design is one of the biggest challenges for any building project. With StoTherm ci exterior wall systems, you need not sacrifice or prioritize one over the other.

This integrated form-and-function engineering approach offers a number of advantages, including:

- Extends building lifespan (through 99.6% drainage efficiency).¹
- Lowers structural weight (up to 64% lighter steel studs can be used than with brick veneer).²
- Minimizes thermal bridging.
- Enhances curb appeal (with virtually limitless design possibilities).
- Cuts energy use (with 99% thermal efficiency).³
- Protects framing, substrates and cladding with advanced moisture protection and drainage.⁴

Sources

¹ Sto Technical Report 01-07.1, Sto Guard®: Development of Durability Requirements for Canada and Compliance.

² Steel Cost Case Study: Sto Corp. Steel Cost Study White Paper.pdf ([http://domino-219.stocorp.com/webfiles.nsf/leifs/steelcoststudy.pdf/\\$file/leifs642steelcoststudy.pdf](http://domino-219.stocorp.com/webfiles.nsf/leifs/steelcoststudy.pdf/$file/leifs642steelcoststudy.pdf)).

³ LEED® Product Assessment Report, Paul R. Bertram, Jr., FCSI, CDT, LEED AP, July 2007.

⁴ Sto EIFS NEXT System with Drainage, Drainage & Drying Study Final Report, University of Waterloo, Building Engineering Group, Civil Engineering Department, August 2005. For details, see Sto Technical Report 01-07.1 on www.stocorp.com

Realizing Design Potential

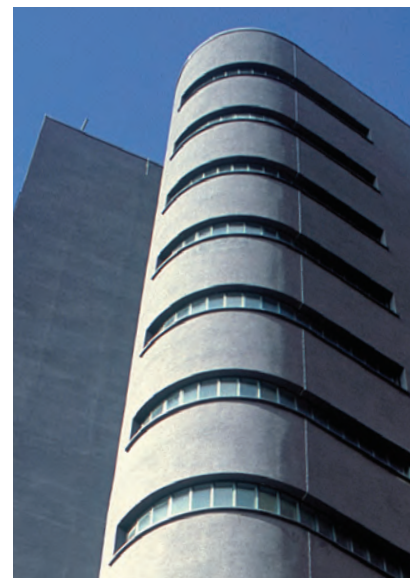
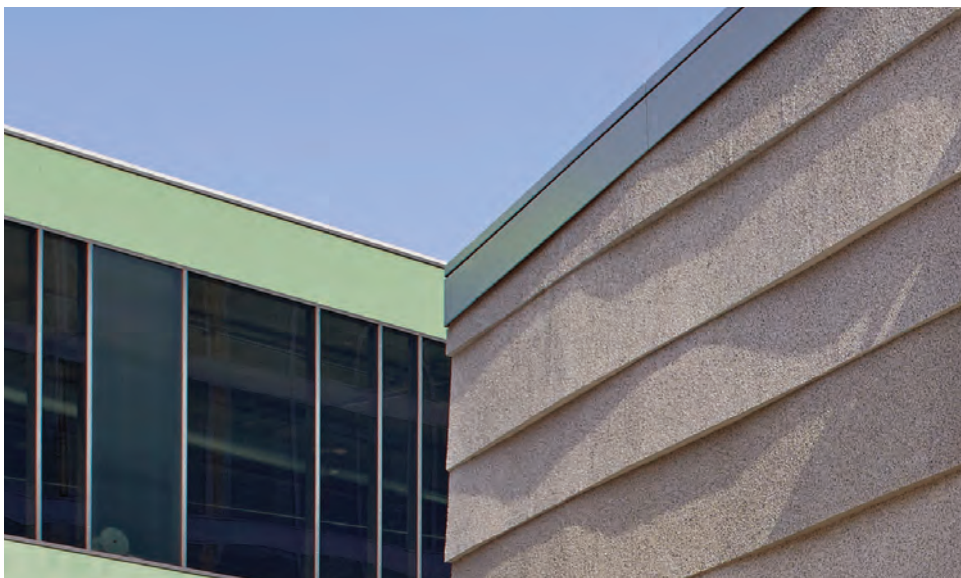
StoTherm® ci wall systems offer unprecedented flexibility to your building's design. From architectural shapes and eye-catching finishes to high-performance coatings, the possibilities are virtually limitless.



Architectural shapes

Since StoTherm ci is easier to shape than heavier, denser materials, it offers a freedom of design well beyond other claddings. Features such as curves, arches, reveals, accent bands, sculptured details and quoins are easy to fabricate and install at a fraction of the cost of other materials.

This flexibility lets you work within a wide range of architectural styles or create truly unique architectural features.



Achieving Aesthetic Impact



Finishes, colors and coatings

The R&D chemists at Sto have formulated some of the world's most advanced coatings and finishes, such as high-performance, super-hydrophobic Stolit Lotusan, which mimics the water- and dirt-repelling properties of the lotus leaf. Combining the superior protection and performance of those coatings and finishes with a remarkable range of colors opens up a wide array of design possibilities for every StoTherm ci wall system application.

Obtain the customization you want, coupled with the cost savings and performance you need.



Combine for limitless design

First impressions can last forever. That's why Sto offers an extensive range of shapes, finishes, colors and coatings. Whether you want to match an established community aesthetic or make a bold architectural statement, StoTherm ci wall systems can be customized to make your design vision a reality.

We are always available to support your design process with our Sto Studio visualization service, which helps to simplify selections and approvals.

Explore more at Sto Studio:

www.stocorp.com/StoStudio

A New Standard in Compliance

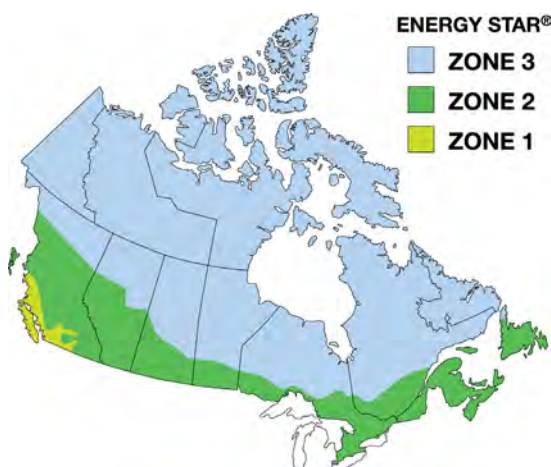
Meeting energy challenges

Complying with rapidly changing energy standards and mandates can be a major obstacle to any building project. With StoTherm ci, you have peace of mind knowing that the system design makes it possible to meet or exceed today's energy standards for exterior walls, including ASHRAE design standard 90.1-2013, and NBC requirements for thermal resistance and air leakage resistance.

The energy advantages of StoTherm ci wall systems don't stop at compliance. With StoTherm ci, you can:

- Cut annual heating and cooling energy use as much as 46% compared to brick and stucco assemblies that don't use continuous insulation.⁵
- Realize additional annual energy cost savings up to 36% when used with our seamless StoGuard® air and moisture barrier.⁶
- Combine with other techniques to exceed Passive House standards for 75% less heating and cooling energy use than traditional buildings.⁷

StoTherm ci is designed to comply with standards across every Canadian climate zone.



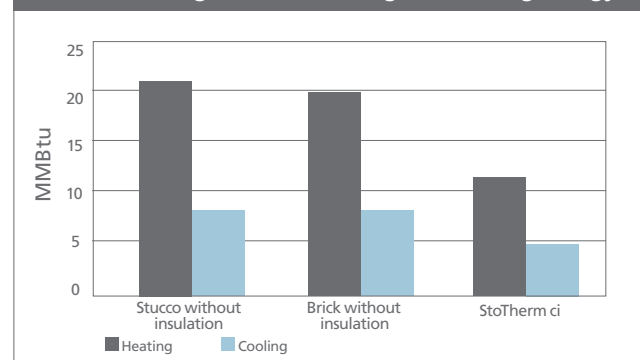
Fire and building code compliance

All StoTherm ci systems are fire tested and compliant with building code criteria for use in all types of construction:

- NFPA 285 (National Fire Protection Association)
- NFPA 268
- ASTM E 84 (American Society for Testing and Materials)
- ASTM E 119
- CAN/ULC-S 101
- CAN/ULC-S 102
- CAN/ULC-S 114
- CAN/ULC-S 134
- ULC S716.1

Obtain more information on StoTherm ci compliance with energy standards and building codes at www.stocorp.com

National Average Annual Heating and Cooling Energy⁵



Brick and stucco assemblies without continuous insulation use about twice as much energy as StoTherm ci.

Sources

⁵ Life-Cycle Study of Sto Engineered Cladding Systems vs. Typical Brick and Stucco Cladding by Franklin Associates/ERG, April 2009.

⁶ Energy Conservation Benefits of Air Barriers StoGuard®: The Effect on Energy Conservation by Chris Norris, P.E.

⁷ <http://www.nydailynews.com/new-york/brooklyn/affordable-passive-house-apartments-complete-article-1.1774462>

Moving Sustainability Forward

Building a better future

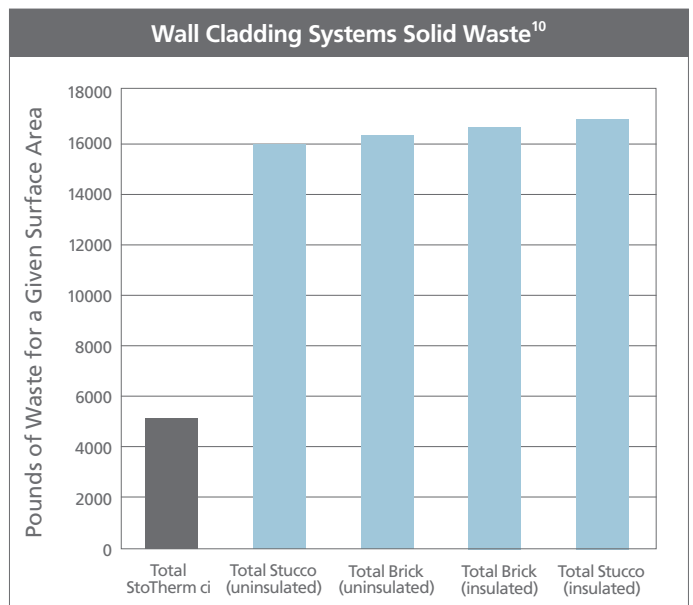
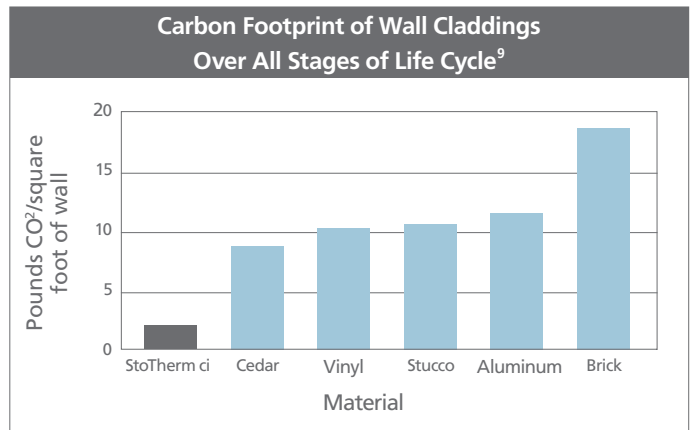
Commercial and residential buildings have a huge impact on costs and the environment with annual energy costs for Canada's commercial buildings at \$17.6 billion, and lighting, heating and cooling of commercial buildings accounting for 50-60% of annual greenhouse gas emissions.⁸ StoTherm ci is a more sustainable way to design exterior walls thanks to a far smaller carbon footprint than non-insulated brick or stucco claddings.

During manufacturing, continuous insulation produces one-fifth the carbon dioxide emissions compared to brick and nearly one-third compared to stucco.⁹ It uses 81% less energy from production to application on the wall. It also helps cut the solid waste stream by 75%, reducing the burden on landfills.¹⁰

Building with conscience

As a company, Sto® is committed to Building with Conscience™—which is demonstrated in sustainability credentials that include:

- ISO 9001 certified Quality Management System
- ISO 14001 certified Environmental Management System
- Compliance with EPA (Environmental Protection Agency) and SCAQMD (South Coast Air Quality Management District) VOC requirements
- ICC-ES durability and fire protection criteria



Continuous Insulation Helps Protect the Environment¹¹

The energy used to make continuous insulation is easily recovered by a building's energy savings:

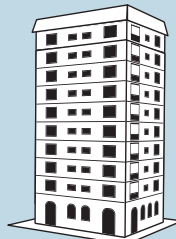


1 lb. of continuous insulation (ci)

SAVES

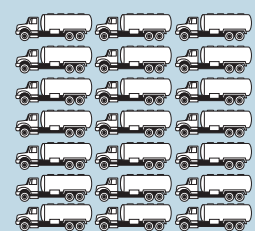


48 gallons of fuel oil over 50 years



One 10-story building with ci

SAVES



505,584 gallons of fuel oil over 50 years

Sources

⁸ [http://www.cagbc.org/CAGBC/Program/Building Performance](http://www.cagbc.org/CAGBC/Program/Building%20Performance)

⁹ Life-Cycle Study of Sto Engineered Cladding Systems vs. Typical Brick and Stucco Cladding by Franklin Associates/ERG, April 2009.

¹⁰ Ibid.

¹¹ Calculated from data from American Chemistry Council and EUMEPS, an association of European manufacturers of EPS.

Extending Service Life

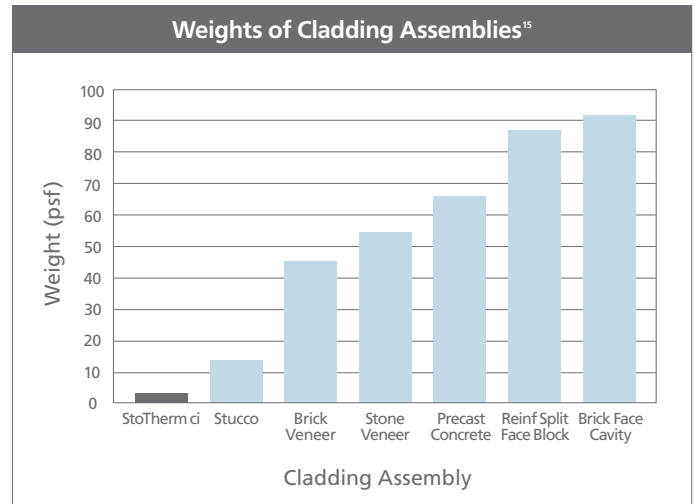
The durability and service life of StoTherm® ci is comparable to traditional wall cladding systems, but with lower costs to own and maintain over the life of the building—plus a much easier upgrade path when desired.¹²

Low weight, high resilience

The lightweight, fully adhered, continuous insulation cladding system design of a StoTherm ci wall assembly typically has higher resistance to wind loads than mechanically fastened alternatives. The system design also reduces the effects of thermal loads. When walls expand or contract due to rising or falling temperatures, StoTherm ci is resilient enough to substantially reduce the risk of cracking problems that can occur with stucco, concrete and brick exteriors.¹³

Inexpensively maintained, easily upgraded

When properly specified and installed, StoTherm ci functions as an integral system that is easy to maintain, repair and upgrade. In fact, the cost of ownership and maintenance is reduced to yield 65% life-cycle savings.¹⁴ Sto® provides a sustainable maintenance and refurbishment strategy through the Sto reStore® program, a four-level offering of strategies to clean and recoat, repair, refinish and upgrade the facade.



Lighter weight of StoTherm ci reduces load on the structure—and enhances durability on the wall face.

Consider the performance and appearance advantages of StoTherm ci wall systems on your next project.

Visit www.stocorp.com/StoThermCI for more information and a complete list of product specifications.

Sources

¹² Perspectives on the Performance of EIFS Wall Enclosure Systems - Summary Report with Highlights and Speculative Commentary by Ted Kesik, Ph.D., P.Eng. (University of Toronto).

¹³ How to Arrive at the True Value Propositions of EIFS by Ted Kesik, Ph.D., P.Eng. (University of Toronto).

¹⁴ <https://cymcdn.com/sites/www.nibs.org/resource/resmgr/BETEC/BETECgedgarkovatch.pdf>.

¹⁵ Various references used to calculate material dead loads: Manual of Steel Construction, Architectural Construction, and others. Weights are typical and should not be used for design purposes, as weights will vary depending on job specific size, weight, and composition of materials chosen. StoTherm ci, Stucco, Brick Veneer, and Stone Veneer include back-up wall construction of gypsum sheathing and lightweight steel frame with between-the-stud insulation. Brick face Cavity Wall is with back-up wall construction of 6-inch concrete block. Pre-cast Concrete and Reinforced Split Face Block include lightweight interior metal studs with between-the-stud cavity insulation.

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