StoTherm®ci Mineral
General Notes

Structural - Wind and Axial Loads

1. Design for maximum allowable deflection normal to the plane of the wall of L/240.

2. Design for wind load in conformance with code requirements.

3. Frame Construction: space studs maximum 406mm (16 inches) on center using either 2x4 or 2x6 wood framing or minimum 18 gauge galvanized steel stud framing.

4. Maximum ultimate wind load resistance: positive 12.1 kPa (253 lb/ft^2), negative 6.03 kPa (-126 lb/ft^2). Refer to the Sto Design Guide for details of wind load resistance tested assemblies.

Fire

1. Insulation board is noncombustible as defined by CAN/ULC S114 with 0 flame spread and 0 smoke development (CAN/ULC S102).

2. Non-Combustible Construction: system is permitted in non-combustible construction, without sprinklers, setback or height limitations (other than wind load height restrictions).

3. Fire–Resistant Rated Construction: system maintains hourly fire resistance rating of concrete, concrete masonry, and non-load bearing steel frame wall assemblies.

Moisture Protection

1. Refer to Sto Tech Hotline No. **0403-BSc, Critical Detail Checklist for Wall Assemblies**, and No. **0603-BSc Moisture Control Princples for Design and Construction of Wall Assemblies**, for basic details and principles that must be employed in design and construction of wall assemblies to control moisture.

2. StoGuard functions as the air barrier and moisture barrier (AMB) in the system and conforms with the requirements of ASTM E2570, Standard Test Methods for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage. The moisture protection provided by StoGuard protects walls against moisture damage from rain during the construction process and in the event of a breach in the wall cladding while in service. Flashing must always be integrated with the AMB in the wall assembly to direct water to the exterior of the cladding, not into the wall assembly, particularly at potential leak sources such as windows.

3. The function of an air barrier should not be confused with that of a vapour retarder. A vapour retarder is placed in the wall to resist differential vapour pressures, whereas the air barrier is designed to resist the structural live loads induced by air pressure difference.

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Moisture Protection (cont'd)

Generally a vapour retarder is placed on the warm side of the wall. Specifically, it is placed on the interior side of the insulation in cold climates and on the exterior side of the insulation in warm humid climates to minimize condensation within the wall assembly.

A vapour retarder may not be necessary depending on the wall components, the range of temperature/humidity conditions inside and outside, and the mechanical ventilation of the building. A vapour retarder should not be used on the interior side of walls in warm humid climates. Refer to applicable building codes for further guidance.

4. The system functions to resist water penetration based on testing in accordance with ASTM E331, (Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference) and also drains incidental water in the event of a breach of the outer facing (lamina).

5. The system is "vapour open" with vapour permeable air and moisture barrier, insulation board, and lamina components. If a vapour barrier is required refer to information on StoGuard VapourSeal.

6. Precautions must be taken to keep insulation board dry during construction and while in service. R-value, adhesion and other properties can be compromised if insulation stays wet. During construction protect with tenting, base coat, or other protection to maintain insulation board integrity and properties.

Thermal Insulation

1. The system employs noncombustible continuous exterior mineral wool insulation in compliance with ASTM C612, Standard Specifcation for Mineral Fiber Block and Board Thermal Insulation, and as per CAN/ULC S716.1, Standard for Exterior Insulation and Finish Systems – System and Materials. The insulation comes in 51, 76, or 102mm (2, 3, or 4 inch) thicknesses with an RSI value of RSI-0.704 m^2•K/W (R-4.0 ft^2•h•°F / Btu per inch).

2. The system employs specially designed thermal dowels for attachment of the insulation to the supporting structure to minimize thermal bridging.

Impact Resistance

1. Heavy reinforcing mesh layer 373 g/m^2 (11 oz/yd^2) is recommended for ground floors and other areas at risk of impacts or abuse. Alternative materials – stucco, stone, tile – may be more suitable in areas with heavy pedestrian traffic, vehicular traffic (e.g., porte cocherre), and industrial areas.

Acoustics

1. Outdoor-Indoor Transmission Class has been measured and calculated at 45 in accordance with ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation, and ASTM E413, Classification for Rating Sound Insulation.

Aesthetics

1. Slight surface irregularities may be apparent in the finished wall surface for brief periods during the day in critical light. Smooth or fine texture finishes are discouraged. Minimum 1.5 mm (Medium) or heavier textures are preferred to hide surface imperfections. On some occasions surface mount dowels may "read" through the finished wall surface as the building ages. This can be remedied by recoating (or prevented by using countersunk dowels).

Joints

1. System requires joints at:

   - Expansion, deflection, control, or cold joints in supporting construction
   - Changes in building height
   - Dissimilar construction or materials
   - Floor lines in multi-level wood frame construction

Regulatory Compliance

1. StoGuard Air and Moisture Barrier: complies with LA-WRB performance requirements of CAN/ULC S716 and ASTM E2178 as per NBC Div. B Clause 5.4.1.2.(1)(a), Air Barrier Material Properties.

2. StoGuard Air and Moisture Barrier: meets the performance requirements of ASTM E2357 as per NBC Div. B Clause 9.36.2.9.(1)(c), Airtightness.

3. System: utilizing a noncombustible thermal insulation the system is exempt from full-scale assessment applicable to combustible cladding and/or insulations as outlined in Article 3.1.5.5. As such, it is also exempt from the Article's building height limitations and may be used on buildings without height restriction (other than wind load height restrictions), including in retrofit installations where a building may be greater than 3 storeys and unsprinklered. Further, being a noncombustible cladding, comprised of noncombustible material (save minor combustible components), StoTherm ci Mineral may be used where spatial limitations restrict unprotected openings to <10% as per NBC Div. B Table 3.2.3.7.(1). Article 3.2.3.8. is not applicable as the system does not utilize a foam plastic insulation.

Sustainability

1. Insulation board is made of 70% recycled content.

2. StoGuard Air and Moisture Barrier, Sto adhesive, and Sto lamina components comply with VOC requirements of SCAQMD Rule 1113.

3. System has high potential for LEED and other sustainability program credits based on efficient and effective use of continuous exterior insulation and resulting reductions in greenhouse gas emissions

Other

1. Always construct a site built mock-up using materials and sub-trades associated with the project to verify installation, sequencing, detailing, and aesthetics, and test the performance of the window/wall assembly and other selected critical detail areas for air leakage, water infiltration, and structural adequacy in relation to design wind pressures. Correct any deficiencies shown by the mock-up and testing before commencing work.

2. Refer to Product Bulletins, StoTherm ci Mineral Design Guide, Installation Guide, and guide Specifications and Details, for additional information.

3. The final design of the project is the responsibility of the Design Professional. Sto accepts no liability for design, engineering, or workmanship of any project. The notes provided herein are in addition to Sto Guide Details, Guide Specifications, and other items available at www.stocorp.com

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