Sto Corp
Design No. STO/WDEIFS 15-01
Exterior Wall Systems
Sto Category 2 Exterior Insulation and Finish Systems (EIFS)
Sto Therm ci, StoTherm ci XPS, StoLite Panels
CAN/ULC S101 (2014)
Rating: 15 Minutes Stay-In-Place
Meets the Requirements of Clause 3.2.3.8.(1)(b) of the National Building Code of Canada, 2020 and 2015

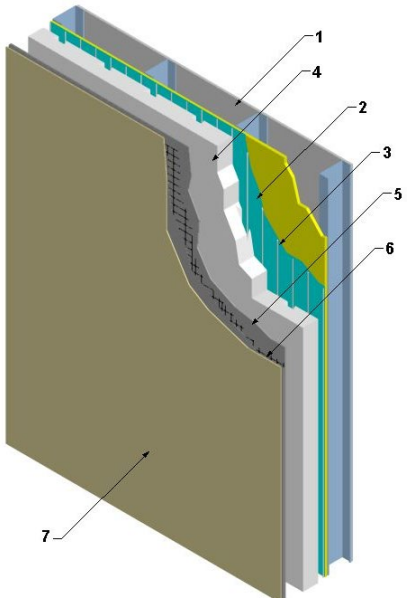

Figure 1: Field Applied Assembly

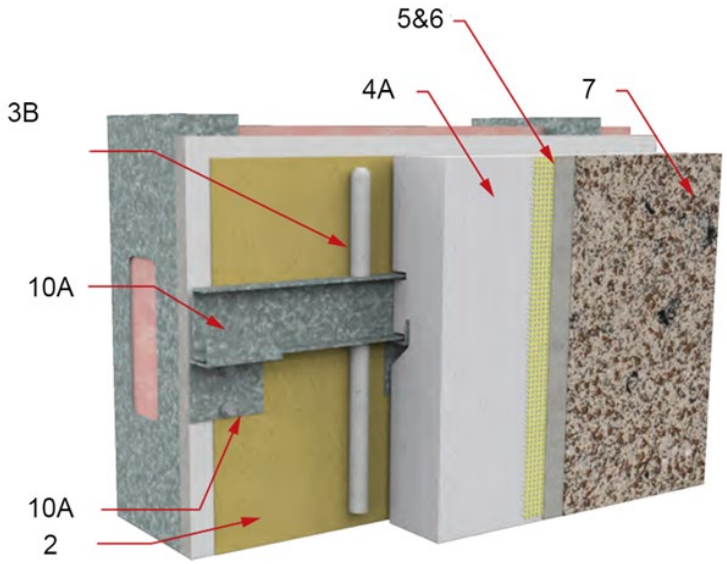

Figure 2: StoLite Panel and Mounting Method

1. **WALL ASSEMBLY:** Construct a wall assembly that shall comply with the local Building Code or other applicable regulatory requirements as established by the local Authority Having Jurisdiction.

   Where the wall assembly is constructed using Insulated Concrete Forms (ICF), the wall assembly shall conform to the following:

   A. The outer EPS insulation layer shall have a max. density of 1.5 pcf and shall not exceed 70 mm (2-3/4 in.) thick. The ICF must conform with CAN/ULC S717.1.
   B. Where expansion joints occur, a 200 mm (8 in.) band of ICF insulation is to be removed coincident with the floor-line, and rigid mineral wool insulation of the same thickness to be inserted. Alternatively, the concrete can be formed flush with the outside surface of the ICF. The span between horizontal floor-line joints shall not exceed two storeys.
   C. The water-resistive barrier must be Sto Flexyl, with Sto Mesh embedded, and is to be applied over the outside of the ICF.

2. **WATER RESISTIVE BARRIER:** For framed walls, apply one of the following membrane systems, according to manufacturer's instructions, to the exterior side of the wall assembly. Sto Flexyl must be used for ICFs.

   A. STO FLEXYL – A cementitious air and moisture barrier trowel applied at a wet film thickness of 1.6 mm.
   B. STOGUARD VAPORSEAL R – A fluid-applied polymeric air, vapor, and moisture barrier, spray- or roller-applied in a two-coat process at a wet film thickness of 0.38 mm (15 mils) per coat.
   C. STOGUARD – A fluid-applied polymeric air and moisture barrier applied in two coats at a wet film thickness of 0.25 mm (10 mils) per coat. Where applied over sheathing, joints are to be first treated with Sto Gold and mesh reinforcement, or StoGuard RapidFill, in accordance with Sto application instructions. Joints may also be treated with application of Sto Gold Coat (81636 or 80265) in conjunction with StoGuard Fabric.

3. **ADHESIVE:** Apply one of the following adhesives, according to manufacturer's instructions, to the water resistive barrier.

   A. Sto BTS NC, Sto Primer/Adhesive-B, Sto BTS Xtra, or Sto BTS Plus Adhesive using a notched trowel with notches configured in one of two methods:
      a. 13 mm × 13 mm (nominal 1/2 in. × 1/2 in.) at 64 mm (2-1/2 in.) on center (oc).
      b. 16 mm × 16 mm (nominal 5/8 in. × 5/8 in.) at 63 mm oc.

   B. Sto TurboStick or Sto TurboStick Mini applied in foam bead ribbons 127 - 152 mm (5 in. - 6 in.) oc, forming seven vertical ribbons over a 2400 mm (48 in.) wide insulation board.

   Approximate thickness of the adhesive ribbons following installation is 2 mm (1/12 in.).

4. **INSULATION BOARD:** Prior to installation of insulation board, install Sto Detail Mesh or cut strips of Sto Mesh, at termination and/or system starting points so to encapsulate the insulation and allow for the overlapping of wrapping mesh and field mesh on the exposed surfaces of the insulation as described in Item 6. This wrapping mesh is to extend no less than 64 mm (2-1/2 in.) onto the adhering surface, or the inward facing side of the insulation board, and then adhered to the substrate using an adhesive described in Item 3A. When used within StoLite Panels, the mesh and base coat back wrap onto the unexposed side of the insulation board, shall be no less than 102 mm (4 in). Install one of the following:

A. 50 mm to 165 mm (2 in. to 6-1/2 in.) thick Expanded Polystyrene (EPS) compliant with CAN/ULC S701, Type 1. The nominal density of the EPS is 16 kg/m^3 (1.0 pcf).
B. 50 mm to 165 mm (2 in. to 6-1/2 in.) thick Graphite Expanded Polystyrene (GPS) compliant with CAN/ULC S701, Type 1. The nominal density of the GPS is 16 kg/m^3 (1.0 pcf). Installation of GPS must use Sto TurboStick as the adhesive.
C. 25 mm to 106.7 mm (1 in. to 4.2 in.) thick Extruded Polystyrene (XPS) compliant with CAN/ULC S701, Type 3. The nominal density of the XPS is 25 kg/m^3 (1.55 pcf).
D. Where EPS or GPS insulation board is installed over an ICF substrate having a max. thickness of 70 mm (2-3/4 in.), the Sto insulation shall not exceed 50 mm (2 in.).
E. Where the EPS or GPS insulation board is installed over an ICF substrate having a max. thickness of 64 mm (2-1/2 in.), the Sto insulation board may be a max. of 64 mm (2-1/2 in.).

Insulation board may be flat-faced or contain geometrically defined cavities of up to 15% of the board area in the wall-facing side.

5. BASE COAT: Apply a base coat of Sto BTS NC, Sto Primer/Adhesive-B, Sto BTS Xtra, or Sto BTS Plus over the insulation board. Embed Sto Mesh in the base coat and apply a second layer of the base coat. Trowel to thoroughly cover the mesh and remove excess coat. The final dry base coat thickness measures 1.6 mm.

6. REINFORCING MESH: StoGuard Mesh, Sto Mesh, StoGuard Fabric

A. Center StoGuard Mesh over sheathing joints by pressing into place.
B. Center StoGuard Fabric over sheathing joints and embed into Sto Gold Coat (81636 or 80265).
C. Embed Sto Mesh 152 g/m^2 (4.5 oz/yd^2) into the applied base coat.
D. For EPS insulation thicknesses of up to 102 mm (4 in.) and XPS systems, mesh overlaps shall be min. 64 mm (2-1/2 in.) and increasing to 102 mm (4 in.) for EPS thicknesses 114 mm to 165 mm (4-1/2 in. to 6-1/2 in.).
E. Additional layers of mesh may be installed for increased impact resistance. Where Sto Armor Mat 15 Mesh (425 g/m^2 – 15 oz/yd^2) is used, it is to be embedded in a certified base coat, prior to application of base coat and Sto Mesh as per Item 6(d).

7. FINISH MATERIAL: Apply one of the following finish materials, according to manufacturer's instructions, over the dried certified base coat to achieve final texture.

A. STOLIT, STOLIT X, STOLIT MAX, STOLIT LOTUSAN, STO ELEMENT, STO ESSENCE DPR, STOSILCO LIT – Trowel-applied ready-mixed acrylic-based finish coat. The applied thickness is governed by the aggregate size (1 mm – 3 mm).

NOTE: Stolit finishes are also used to produce StoCreativ Brick

B. STOCAST BRICK – Trowel-apply the Sto Bonding and Pointing Mortar over the dried certified base coat. Press StoCast Brick, preformed acrylic rendered shapes which simulate brickwork or other patterns, in the Sto Bonding and Pointing Mortar per the manufacturer's instructions. The StoCast Brick's thickness may be nominally 4 mm – 8 mm.
C. STOCAST WOOD – Apply StoCast Adhesive to Intertek certified base coat using a 6 x 6 mm notched trowel, application weight 2.5 – 3.5 kg/m^2. Apply 200 x 16 cm, nominal 2 mm thick, StoCast Wood horizontally across wall, with 5 – 10 mm spacing between adjoining pieces. Press StoCast

Wood into the adhesive using a rubber roller removing excess adhesive in the joint between adjoining pieces of StoCast Wood with a spatula. Clean joints with a damp sponge. Once StoCast Wood Adhesive has dried, a first coat of StoAqua Top Stain glaze is applied over the wall with the Sto-Wide Brush M2. Once the first coat has dried, a second coat is applied. Alternately after StoCast Wood Adhesive has dried, a single coat of StoTique is applied over the wall with the Sto-Wide Brush M2. Once dried, a single coat of Sto Clear Coat is applied.

8. **PRIMER (Optional; Not Shown)**: Apply on base coat prior to finish application as per the manufacturer's instructions.

9. **FORTIFICATION LAYER (Optional; Not Shown):** Sto Armat Classic Plus is a non-cementitious organic compound supplied in pails and used without addition of cement or any other modifying additives for the provision of enhanced lamina abuse resistance.

   Trowel-apply Sto Armat Classic Plus to the base coat and reinforcing mesh prior to application of the certified finish coat. The final Sto Armat Classic Plus dry thickness measures 3 mm – 5 mm.

10. **STOLITE PANELS:** StoLite panels are factory-assembled, prefabricated panels comprised of components 4A, 5, 6, 7, 8, and 9 as described above. Panels are manufactured to a max. size of 6 ft. x 8 ft. and have a supporting C-Channel embedded into the foam backing. StoLite panels may used with any Code-complying base wall construction described in item 1 with the exception of ICF.

    A. StoLite panels are attached via the adhesive outlined in item 3B and 50 mm x 50 mm (2 in. x 2 in.) Z-Clips that are mechanically fastened to the base wall. The panels are installed by applying the adhesive to the back of the panels spaced at max. 152 mm (6 in.) oc and mounting the C-channel onto the pre-installed Z-clips. Clip spacing is determined per StoLite Panel Design Guidelines.
    B. Fabrication of the StoLite panels must be in accordance with this Design Listing and the StoLite Panel Design Guidelines, and must be done by a fabricator approved by the Authority Having Jurisdiction.

Consult the listing report on the Directory of Building Products (https://bpdirectory.intertek.com) for the edition of the standard(s) evaluated.

Compliance of the assembly described in this Design Listing with the referenced standard relies on verification that the assembly constructed in the field is consistent with that described herein. Intertek certified products may be verified by the approved Intertek label; other products must be verified by the Authority Having Jurisdiction as meeting the specifications stated herein.