

Part 1 GENERAL

1.1 Related Work

- .1 Section 06 10 00 – Rough Carpentry

1.2 References

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM E 96/E 96M-05, Standard Test Methods for Water Vapour Transmission of Materials.
 - .2 ASTM C 1320-05, Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.
 - .3 ASTM C 739-03e1, Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
 - .2 CAN/CGSB 51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .3 Canadian General Standards Board (CGSB)
 - .1 CGSB 71-GP-24M-77(R1983), Adhesive, Flexible, for Bonding Cellular polystyrene Insulation.
- .4 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Coverings.
 - .2 CAN/ULC-S702-97, Standard for Thermal Insulation, Mineral Fibre, for Buildings. (Supersedes CSA A101-M1993).
 - .3 CAN/ULC-S703-2001, Standard for Thermal Insulation, Cellulose Fibre Insulation (CFI) for Buildings (Supersedes CAN/CGSB-61.60-M90).
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .6 National Research Council Canada (NRC)/Institute for Research in Construction (IRC) - Canadian Construction Materials Centre (CCMC)
 - .1 CCMC-2002, Registry of Product Evaluations.

1.3 Vapour Barrier Design Intent

- .1 Air tightness of the structure is an integral part of the design of the building. Air tightness must be achieved to minimise heat loss and to prevent building deterioration and failure.

- .2 The construction details an insulation requirements that have been specified and indicated are intended to provide insulated, air-tight envelope for the structure and to be of structural quality or be rigidly supported to withstand wind and air pressure deferential loads.
- .3 The drawings indicate the surface which provide the “continuous air seal” within the building envelope. Different materials act as the air seal in different locations. Where different materials are jointed, they must be bonded together in such a manner that complete seal is achieved, restricting the passage of air or vapour through the building envelope at that point.

Part 2 PRODUCTS

2.1 Mineral Fibre Insulation

- .1 Batt and blanket mineral fibre: to CSA A101-M, CAN/ULC S702, Friction fit Batts to location and thickness as shown on drawing.
 - .1 Acceptable material: Fiberglas Canada Limited or approved equal.
 - .2 Staples: 12 mm minimum leg.

2.2 Vapour Barrier

- .1 Polyethylene film: to CAN/CGSB-51.34, 6mm thick.
- .2 Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by vapour barrier manufacturer, 50 mm wide for lap joints and perimeter seals, 25 mm wide elsewhere.
- .3 Sealant: as recommended by sheet vapour barrier manufacturer.
- .4 Moulded box vapour barrier: Factory-Moulded polyethylene box for use with recessed electric switch and outlet device boxes.

Part 3 EXECUTION

3.1 Manufacturer’s Instructions

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 Examination

- .1 Examine substrates and immediately inform Architect in writing of defects.
- .2 Prior to commencement of work ensure:
 - .1 Substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

3.3 Workmanship

- .1 Install insulation after building substrate materials are dry.
- .2 Install insulation to maintain continuity of thermal protection to building elements and spaces and as indicated on drawings.
- .3 Fit insulation tight around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other penetration.
- .4 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
- .5 Offset both vertical and horizontal joints in multiple layer applications.
- .6 Do not enclose insulation until it has been inspected and approved by Architect

3.4 Compatibility

- .1 Compatibility between component systems is essential. The contractor shall be responsible for ensuring that all items selected to use are compatible with each other.

3.5 Blanket Insulation Installation

- .1 Install insulation to maintain continuity of thermal protection to building elements and spaces and to ASTM C 1320.
- .2 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
- .3 Do not compress insulation to fit into spaces.
- .4 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures
- .5 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.
- .6 Offset both vertical and horizontal joints in multiple layer applications.
- .7 Do not enclose insulation until it has been inspected and approved by Architect

3.6 Vapour Barrier Installation

- .1 Ensure services are installed and inspected prior to installation of retarder.
- .2 Install sheet vapour retarder on warm side of exterior wall and ceiling assemblies prior to installation of gypsum board to form continuous retarder.
- .3 Use sheets of largest practical size to minimize joints.

- .4 Inspect for continuity. Repair punctures and tears with sealing tape before work is concealed.
- .5 Cut sheet vapour retarder to form openings and ensure material is lapped and sealed to frame.
- .6 Seal lap joints of sheet vapour barrier as follows:
 - .1 Apply continuous bead of sealant over solid backing at joint.
 - .2 Lap adjoining sheet minimum 150 mm and press into sealant bead.
 - .3 Install staples through lapped sheets at sealant bead into wood substrate.
 - .4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.
 - .5 Seal electrical switch and outlet device boxes that penetrate vapour barrier as follows:
 - .1 Wrap boxes with film sheet providing minimum 300 mm perimeter lap flange.
 - .2 Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

3.7 Cleaning

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 - GENERAL

1.1 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence and cleaning procedures.

1.2 PRODUCT DATA

- .1 Submit product data in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit product data sheets for system materials. Include product characteristics, performance criteria, limitations and colors.

1.3 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 – Submittal Procedures
- .2 Indicate wall layout, details, connections, expansion joints, finish system, installation sequence, including interface with doors, windows, air barriers, vapour retarders and other components.

1.4 QUALIFICATIONS

- .1 Installation of exterior insulation and finish wall system by applicators licensed by manufacturers of system used.
- .2 Submit certification to Consultant prior to commencement of work in accordance with Section 01 33 00 – Submittal Procedures.

1.5 PROJECT/SITE ENVIRONMENTAL REQUIREMENTS

- .1 Temperature, relative humidity, moisture content.
 - .1 Apply insulation only when surfaces and ambient temperatures are within manufacturers' prescribed limits.
 - .2 Apply EIFS components at temperatures, relative humidity, and substrate moisture content and substrate temperature in accordance with manufacturer's written instructions.
 - .3 Maintain ambient temperature above 4°C during adhesive application and until cured minimum 24 hours.
 - .4 Maintain ambient temperature above 4°C during basecoat application and until cured minimum 24 hours.

- .5 Maintain ambient temperature above 4°C during finish coat application and until cured minimum 24 hours.
- .2 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of insulation, adhesive and caulking materials.
- .3 Ventilation:
 - .1 Provide continuous ventilation during and after insulation application. Run ventilation system 24 hours per day during installation; provide continuous ventilation for 7 days after completion of insulation installation.

1.6 WARRANTY

- .1 For work of this Section 07 24 00 - Exterior Insulation and Finish System the 12 months warranty period prescribed in subsection GC 32.1 of General Conditions "C" is extended to 60 months.
- .2 Contractor hereby warrants that the exterior insulation and finish system will not leak or delaminate in accordance with CCDC GC 24, but for 60 months.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- .1 All product described shall be obtain from STO Industries Inc. or approved equal.

2.2 SURFACE PREPARATION

- .1 Conditioner: acrylic, clear conditioner/sealer compatible with system materials, recommended by system manufacturer.
- .2 Leveler: polymer-modified, cement-based, reinforced leveling compound.

2.3 MATERIALS

- .1 Adhesive: Sto BTS-B Adhesive. A 20% cementitious, ready mixed, 100% copolymer emulsion-based adhesive for gypsum sheating, concrete, masonry or plaster surface.
- .2 Expanded Polystyrene Insulation Board: (EPS) Board with less than 25 flame spread, 16kg/cu.m nominal density; u=0.25-25.4mm; ASTM C578-87a Type 1. Thickness as indicated on drawings.
- .3 Ground Coat: STO RFP. A ready-to-use 100% acrylic copolymer, non cementitious, fiber reinforced ground coat.
- .4 Reinforcing Mesh: Symmetrical, interlaced glass fiber made from twisted multi-end strands and alkaline resistant coating, at least 24 g/m², for compatible with EIFS

materials. The mesh shall be shiftproof, with trimmed roll edge to minimize building on overlapped seams.

- .5 Finish Coat: STOLIT 1.0. A ready-mixed silicone based emulsion textured coating with graded marble aggregate for trowel application. Color to match existing.
- .6 Mechanical Fastners: As recommended for use in high wind zone areas. Suppliers shall determine the wind loads requirements in accordance with the latest edition of the 2005 National Building Code of Canada.
- .7 Edge Protection: wrap reinforcing fabric and base coat on board edge, minimum 150mm.
- .8 Accessories: as per manufacturer's recommendations.
- .9 Water: shall be clean and potable.
- .10 Sealant: approved by manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- .1 Verify that all existing work and work under this contract are compatible and complete before application of wall coating.

3.2 INSTALLATION OF INSULATION BOARD

- .1 Apply a heavy traffic impact resistant coating, consisting of an additional layer of heavy duty armour mesh, embedded in non cementitious adhesive.
- .2 Install insulation boards over the plywood, with joints offset to substrate joints and vertical joints staggered.
- .3 Apply adhesive to the entire back of the insulation board by using a 10 mm notched trowel. Ribbons of adhesive shall be uniform and run horizontal with the long dimension of the board.
- .4 Install insulation board on substrate and apply equal pressure over the entire board surface to ensure uniform contact and solid adhesion.
- .5 Butt all joints tightly to ensure a flat, flush and level surface to eliminate any thermal break in the EIFS. Use straight edge as necessary to verify alignment. Care must be taken to prevent any adhesive from getting between the joints of the boards.
- .6 For installation detail at expansion joints, Refer to EIFS manufacturer's details.
- .7 Any irregularity of the insulation boards greater than 1.5mm must be sand flush.
- .8 Use compression disc fasteners as recommended by the insulation board manufacturer and the EIFS manufacturer to secure the insulation board to the substrate at

recommended fastening pattern. Nails, screws, or any other type of non-thermal mechanical fasteners shall not be used.

- .9 Fasteners shall be countersunk 1.5mm and covered with one layer of adhesive and allowed to dry prior to installation of the reinforcing mesh.

3.3 APPLICATION OF BASE COAT

- .1 Apply base coat with a stainless steel trowel to a thickness of 1.5mm to the entire insulation board.

3.4 INSTALLATION OF REINFORCING FABRIC

- .1 Place the reinforcing fabric immediately against the wet base coat, and by trowelling from the center to the edge, embed the fabric into the base coat.
- .2 Reinforcing mesh must be continuous, free of wrinkles and be fully embedded in the base coat. All corners and overlaps shall be at least 150mm at fabric edges. board, including areas with high
- .3 Allow at least twenty four (24) hour drying time. Additional time may be required for temperature or humid conditions.
- .4 Embed armour mesh fabric in non-cementitious base coat that has been applied to the insulation board. Allow to dry. Apply a coat of non-cementitious base coat to the dry surface and embed the regular reinforcing fabric in the non-cementitious base coat.

3.5 APPLICATION OF FINISH COAT

- .1 Thoroughly mix the factory-prepared finish coat material. Use a high speed mixer and stir until a uniform, workable consistency is obtain. If necessary, add small amounts of clean potable water (not exceed 10 oz. Per pail) to adjust workability.
- .2 Use finish color and texture to match existing coating.
- .3 Use clean stainless steel trowels to apply finish coat directly over the dry base coat.
- .4 Special texture and grain effects are obtain by trowelling. Consistent trowelling techniques must be use to achieve uniformity of appearance.

3.6 CLEAN-UP

- .1 All excess EIFS materials shall be removed from the job site by the applicator.

END OF SECTION