

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- .1 Comply with requirements of Division 1.

1.2 RELATED WORK

- .1 Section 03 30 00: Cast-in-place Concrete
- .2 Section 07 92 00: Joint Sealing.
- .3 Section 09 21 16: Gypsum Board Assemblies

1.3 REFERENCES

- .1 ASTM C553-13, Specification for Mineral Fibre blanket Thermal Insulation, for Commercial and Industrial Applications.
- .2 ASTM C612-14, Standard Specification for Mineral Fibre Block and Board Thermal Insulation.
- .3 CAN/ULC-S701-11, Standard for Thermal Insulation, Polystyrene Boards and Pipe Covering.
- .4 CAN/ULC-S702-09 AMT 1, Standard for Mineral Fibre Thermal Insulation for Buildings.
- .5 CGSB 71-GP-24M, Adhesive, Flexible, for Bonding Cellular Polystyrene Insulations.

1.4 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.5 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.

1.6 PRODUCT DELIVERY, HANDLING AND STORAGE

- .1 Deliver, store and protect materials from sunlight, weather and deleterious materials. Deliver insulation to site in sealed wrappings bearing manufacturer's name, product name and RSI or KSI value.

1.6 PRODUCT DELIVERY, HANDLING AND STORAGE (continued)

- .2 Store materials in a dry area protected from the elements. Store components off the ground and under cover and in accordance with manufacturers written instructions.

1.7 PROTECTION

- .1 Temporarily protect installed insulation from damage and action of the elements until it is permanently concealed or protected.
- .2 Protect polystyrene insulation from sunlight.

1.8 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard and packaging material in appropriate on site bins for recycling in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 INSULATION

- .1 Below slab-on-grade (horizontal applications): high density extruded, polystyrene to CAN/ULC-S701, Type 4, thickness 50 mm for below slab applications, shiplapped edges.
 - .1 Acceptable material:
 - .1 High Load-40 (275 kPa) by Dow Chemical Canada Inc.
 - .2 Foamular 400 (275 kPa) by Owens Corning Canada Inc.
 - .3 GreenGuard Type IV 25 PSI Insulation Board by Green Guard.
 - .4 or approved equal.
- .2 Exterior wall insulation (metal stud space of exterior walls): mineral wool semi-rigid board, type 1, class 1 to CAN/ULC-S701, density of 45 kg/m³ (2.8 lb/cu.ft.), thickness as indicated.
 - .1 Acceptable materials:
 - .1 Roxul Acoustic Fire Batt (AFB) by Roxul Inc.
 - .2 Thermafire SAFB Insulation by Thermafire Inc.
 - .3 MinWool Sound Attenuation Fire Batts by Industrial Insulation Group (IIG) Safety.
 - .4 or approved equal.

2.2 ACCESSORIES

- .1 Insulation clips: impale type, perforated 50 x 50 mm cold rolled carbon steel 0.80 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self locking type.
- .2 Impale clip adhesive: as recommended by impale clip manufacturer.

2.2 ACCESSORIES (continued)

- .3 Adhesive (for polystyrene): to CGSB 71-GP-24 as recommended by perimeter insulation manufacturer.
- .4 Fastening devices: stainless, cadmium plated or hot dipped galvanized steel.

PART 3 – EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 EXAMINATION

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

3.3 PREPARATION

- .1 Clean substrates as required. Remove ridges and deposits from concrete surfaces.

3.4 INSTALLATION GENERAL

- .1 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .2 Do not install insulation until air barrier and transition membranes are complete and approved by Departmental Representative.
- .3 Provide under this Section all thermal insulation required except where it is specified to be part of other Sections. Where no particular type of insulation is indicated provide rigid fibrous type.
- .4 Where insulation is interrupted by construction elements, neatly fit insulation around such elements and pack spaces around elements with same insulation.
- .5 Install continuous uniform thermal insulation to maintain continuity of thermal protection to building elements and spaces.
- .6 Fit insulation tight around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other protrusions.

3.4 INSTALLATION GENERAL (continued)

- .7 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures.
- .8 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.
- .9 Offset both vertical and horizontal joints in multiple layer applications.
- .10 Do not enclose insulation until it has been inspected and approved by Departmental Representative.

3.4 BELOW-SLAB INSULATION

- .1 Provide below slab insulation below new concrete slab on grade for replacement emergency generator and associated electrical equipment. Refer to drawings.

3.5 EXTERIOR WALL INSULATION – STEEL STUD SPACE OF EXTERIOR WALLS

- .1 Install exterior wall semi-rigid thermal insulation boards over impale clips in stud space of exterior wall assembly at location where existing emergency generator is removed and where shown on drawings.
- .2 Place insulation against interior face of exterior sheathing, tightly fitted at joints and between steel studs. Leave no voids or gaps.
- .3 Install insulation with impale clip method. Provide minimum six (6) impale clips, one in each corner and two near centre of each insulation board. Cut off fastener spindle 3 mm. beyond disk.
- .4 All butt joints shall be brought into tight contact to ensure a monolithic thermal barrier. Any cutting or fabricating shall be made of the largest module possible of insulation to reduce the number of joints.

3.6 CLEANING

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

END OF SECTION