

## SECTION 072100

### THERMAL INSULATION – RIGID INSULATION

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Provide thermal insulation including the following:

1. Underslab insulation.
2. Foundation insulation.
3. Foundation insulation with drainage channels.
4. Foundation insulation with concrete face.
5. Rainscreen insulation outboard of sheathing.

##### 1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Warranty: Submit manufacturer's standard limited warranty against defects in manufacturing.

##### 1.3 QUALITY ASSURANCE

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Mock-Ups: Provide mock-up as required by Architect to demonstrate quality of workmanship.

#### PART 2 PRODUCTS

##### 2.1 MANUFACTURER

- A. Underslab Insulation, Basis-of-Design: DuPont Styrofoam Brand Highload XPS Insulation or equal by Owens Corning Foamular NGX, Kingspan GreenGuard.
1. Description: Closed cell foam insulation.
  2. Thermal Resistance, R-Value: 5.0 per inch.
  3. Compressive Strength, ASTM D1621: [40 psi (ASTM C578 type VI)] [60 psi (ASTM C578 Type VII)] [100 psi (ASTM C578 Type V)] compressive strength.
  4. Water Absorption, ASTM C272: 0.1 percent.
  5. Fire Performance, ASTM E84 Class A: Flame spread index 25, smoke developed index 450.
  6. Related Performance Properties: As published in manufacturer's data sheets.
- B. Foundation Insulation, Basis-of-Design: DuPont Styrofoam Brand Square Edge Insulation, or equal by Owens Corning Foamular NGX, Kingspan GreenGuard.
1. Description: Closed cell foam insulation.
  2. Thermal Resistance, R-Value: 5.0 per inch at 75 degrees F mean temperature.
  3. Compressive Strength, ASTM D1621: 25 psi compressive strength.
  4. Water Absorption, ASTM C272: 0.1 percent.
  5. Fire Performance, ASTM E84 Class A: Flame spread index 25, smoke developed index 450.
  6. Related Performance Properties: As published in manufacturer's data sheets.
  7. Application: Polystyrene compatible adhesive, with caulk or mastic at top of board to prevent water

infiltration behind the board.

- C. Foundation Insulation with Drainage Channels, Basis-of-Design: T.Clear ThermaDRY or equal by Owens Corning.
1. Description: Insulating drainage panels consisting of insulation and geotextile facer facing backfill.
  2. Manufacturer's Type and Compressive Strength, ASTM D1621: [Type 750 (25 psi).] [Type 1250 (40 psi).] [Type 1750 (60 psi).]
  3. Insulation: Extruded polystyrene (XPS) insulation with vertical and horizontal drainage channels.
  4. Thickness: 2 inches with square edge.
  5. R-Value, ASTM C518: 9.4.
  6. Related Performance Properties: As published in manufacturer's data sheets.
  7. Attachment: Manufacturer's recommended adhesive and backfill.
  8. Drainage: Subsurface tile and gravel bed drainage system as detailed on the Drawings.
- D. Foundation Insulation with Concrete Face, Basis-of-Design: T.Clear WallGUARD.
1. Description: Prefinished exterior perimeter foundation or wall insulation consisting of closed cell Styrofoam extruded polystyrene insulation with a factory applied 5/16 inch (8mm) thick latex-modified concrete facing.
  2. Compressive Strength, ASTM D1621: 40 psi.
  3. Thickness: 3 inches thick (R-15ci)
  4. R-Value, ASTM C518: 5.0 per inch.
  5. Edge Treatment: Tongue and groove along the 4 foot edge.
  6. Fire Performance, ASTM E84: Flame spread index 5, smoke developed index 135.
  7. Related Performance Properties: As published in manufacturer's data sheets.
  8. Attachment: Manufacturer's recommended galvanized steel mounting clips.
- E. Rainscreen Insulation Outboard of Sheathing, Basis-of-Design: Rockwool Cavityrock or equal by Owens Corning, Thermafiber RainBarrier, or Johns Manville, Cladstone.
1. Description: Non-structural, unfaced, semi-rigid mineral wool insulation board that is water-resistant and non-combustible.
  2. Thermal Resistance, R-Value: 4.2 at 1 inch; similar for other thicknesses.
  3. Edge Treatment: Square edge
  4. Density, ASTM C303: 6.0 pcf (nominal)
  5. Reaction to Moisture (Water Vapor Sorption), ASTM C1104: 0.16 vol% maximum.
  6. Fire Performance, ASTM E84 Class A: Flame spread index less than 25, smoke developed index less than 450.
  7. Wall Assembly Burn Testing: NFPA 285, compliant in proposed wall assemblies.
  8. Related Performance Properties: As published in manufacturer's data sheets.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections. Provide full thickness in one layer over entire area, tightly fitting around penetrations.
- B. Restore damaged components. Clean and protect work from damage during construction.

END OF SECTION