SECTION 07200 - INSULATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Insulation work includes:
   1. Insulation under slabs on grade.
   2. Foundation wall insulation.
   3. Board-type wall insulation, concealed.
   4. Sound attenuating batts specified in section 09250.
   5. Roof deck insulation specified in section 07500.
   6. EIFS insulation specified in section 07240.
   7. Batt insulation at tilt-up concrete walls, Southern Prototype wall sections and Thru-Wall clay masonry wall sections.

1.02 QUALITY ASSURANCE

A. Comply with code required fire-resistance, flammability and insurance ratings.

B. Construction assemblies shall achieve minimum aged "R" values as follows:
   1. Roof: See Sections 07510, 07520, 07530 or 07535 as applicable. Insulation applied to back of suspended ceiling system is prohibited. Batt insulation shall not be attached to nor suspended below the roof deck. Required "R-value" shall be achieved in the construction above the roof deck.
   2. Walls - R-10 minimum. Install vapor retarders where required by state or local codes.

PART II - PRODUCTS

2.01 MATERIALS

A. Bead board insulation is not acceptable.

B. Extruded Polystyrene Board Insulation (cavity wall & foundation): Rigid, closed-cell, board complying with ASTM C-578 Type IV with the following properties:
   1. Compressive Strength: 25 psi minimum.
   2. Flexural Strength: 50 lbs/in.^{2} min. (ASTM C 203).
   3. Thermal Resistance: 5 year aged R-values of 5.4 and 5.0 min. °F-ft^2 - h/Btu^2 /inch at 40°F and 75°F respectively (ASTM C 518).
   4. Water Absorption: max. 0.1% by volume (ASTM C 272).
   5. Water Vapor Permeance: 1.1 perm-inch max.

6. Dimensional Stability: 2% max. linear change (ASTM D 2126).

7. Flame Spread: 5 (ASTM E 84).

8. Smoke Developed: 45 to 165 (ASTM E 84).

9. Size: manufacturer's standard lengths and widths.

C. Extruded Polystyrene Board Insulation (Z-furring): Rigid, closed-cell, board complying with ASTM C-578 Type X with the following properties:

1. Compressive Strength: 15 psi minimum.

2. Flexural Strength: 40 lbs/in.^{2} min (ASTM C 203).

3. Thermal Resistance: 5 year aged R-values of 5.4 and 5.0 min. °F-ft^2-h/Btu^2/inch at 40°F and 75°F respectively (ASTM C 518).

4. Water Absorption: max. 0.1% by volume (ASTM C 272).

5. Water Vapor Permeance: 1.1 perm-inch max.

6. Dimensional Stability: 2%max. linear change (ASTM D 2126).

7. Flame Spread: 5 (ASTM E 84).

8. Smoke Developed: 45 to 165 (ASTM E 84).

9. Size: 23-7/8" manufacturer's standard lengths.

D. Glass Fiber Batt Insulation: Inorganic (non asbestos) fibers formed into semi-rigid batts; ASTM C665, Type III, Class B, reflective foil faced, with the following properties:

1. Water vapor permeance $\leq$ 0.05 perms per ASTM E 96.

2. Water vapor sorption, 0.5% max. by weight ASTM C1104, R-value 11.

3. Flame-Spread Rating/Smoke Developed: Provide rating of 25/50 respectively, ASTM E 84.

4. Fire-Resistance Ratings: Where units are included in rated wall/ceiling/floor construction, provide mineral wool units, which have been tested and rated as required for the indicated assembly.

2.02 AUXILIARY INSULATING MATERIALS

A. Polyethylene Vapor Retarder: Film of thickness shown on drawings with vapor transmission rating of 0.2 perms.

PART III - EXECUTION

3.01 INSTALLATION

A. Extend insulation full thickness over entire area to be insulated. Cut and fit tightly around obstructions.

B. Set vapor barrier faced insulation units with vapor barrier to warm side of construction, except as otherwise shown. Do not obstruct ventilation spaces, except for firestopping.

C. Rigid board insulation shall be installed only in concealed locations.

3.02 VAPOR RETARDERS

A. Extend vapor retarders to extremities of areas to be protected. Secure in place. Extend vapor barriers to cover miscellaneous voids in insulated substrates.

B. Repair punctures and tears in vapor retarders before concealment by other work.

END OF SECTION