

SECTION 07210  
THERMAL INSULATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing thermal insulation.
- B. Related Sections:
  - 1. Roof board insulation directly under roof membrane is specified in Section 07220.
  - 2. Firestopping insulation is specified in Section 07840.

1.02 SUBMITTALS

- A. Product Data: Manufacturer's specifications for each type of insulation required.

1.03 QUALITY ASSURANCE

- A. Thermal Conductivity: Where insulation is indicated or specified by "R" value, provide thickness required to achieve indicated value. Use aged and settled values for thermal resistance factors (R-values), tested in accordance with ASTM C518 at 75-deg. F. and 50-percent relative humidity for at least 6-months.
- B. Fire Ratings: Comply with fire-resistance and flammability ratings specified.
- C. Insulation shall be certified by the manufacturer to comply with California standards for insulating materials.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation from physical damage and from becoming wet or soiled. Comply with manufacturer's recommendations for handling, storage and protection during installation.

1.05 TESTING AND INSPECTIONS

- A. Inspect insulation for proper installation. Correct defects such as voids, gaps or insulation compressed behind pipes before accepting work.
- B. Conduct blower door tests to measure air infiltration rate.

PART 2 - PRODUCTS

2.01 BATT AND BLANKET INSULATION

- A. Faced Mineral/Glass Fiber Blanket/Batt Insulation:
  - 1. Approved Manufacturers: Johns Manville "Thermal-SHIELD Free FSK-25", Owens Corning "Fiberglas FS25" or equal.
  - 2. Material: Thermal insulation produced by combining mineral-glass fibers with thermosetting resins to comply with ASTM C665, Type III, Class A, foil-scrim-kraft vapor retarder membrane on one face.
  - 3. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50 when tested in accordance with ASTM E84.
  - 4. Thickness: As required for R-19 in walls and R-30 on underside of slabs where roof insulation is not used. Size batts to fill stud cavity.

## 2.02 BOARD INSULATION

- A. Extruded Polystyrene Board Insulation: Extruded polystyrene board insulation complying with ASTM C578, Type V.
1. Approved Manufacturers: Dow "Styrofoam Brand High Load", Owens Corning "Foamular 1000" or approved equal.
  2. Compressive Strength, ASTM D1621: 100-psi.
  3. Flexural Strength, ASTM C203: 100-psi.
  4. Water Absorption, ASTM C272: 0.1-percent by volume.
  5. Water Vapor Permeance, ASTM E96: 0.8-perms.
  6. Dimensional Stability, ASTM D2126: 3.5-percent linear change.
  7. Thickness: As indicated.
  8. Surface Burning Characteristics: Maximum flame-spread and smoke development values of 5 and 165 when tested in accordance with ASTM E84.
  9. Provide at exterior concrete walls.

## 2.03 MISCELLANEOUS MATERIALS

- A. Mechanical Anchors: Miracle Adhesive Corp. "Stuck-Up", Stic-Klip Mfg. Co. "Stic-Klip" or approved equal. Provide protective covers or an approved unpointed clip for areas under 7'-0" above the floor.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. General:
1. Comply with manufacturer's instructions for installation conditions.
  2. Do not install insulation until building is sufficiently enclosed or protected against absorption of moisture by the insulation, and do not install insulation unless supporting framing and construction is in a thoroughly dry condition.
  3. Install snugly between framing members with ends snugly fitted between units and against adjacent construction.
  4. Carefully cut and fit insulation around pipes, conduit, and other obstructions and penetrations.
  5. Where door, window and skylight frames occur in framing, cut additional strips of insulation and hand-pack as required to fill voids in and around such frames.
  6. Use insulation free of ripped backs and edges.
- B. Thermal Insulation:
1. Install with foil facing to building interior.
  2. Install to completely fill typical and odd spaces in framing where required, other than providing air space as specified.
  3. Tape joints and ruptures in vapor retarder to ensure airtight installation.
- C. Horizontal Insulation:
1. Install insulation over insulation fasteners. Where required, install insulation fasteners prior to application of sprayed-on fireproofing.
  2. Space fasteners and secure in a full bed of adhesive as recommended by manufacturer.

3. Lay out insulation for minimum of joints, and with no single pieces less than 24-inches wide nor less than 48-inches long, unless otherwise approved.
4. Offset intermediate end joints in adjacent panels not less than 48-inches.
5. Do not install insulation until clip adhesive is set.
6. Install insulation fully bearing against substrates, with tightly fitted joints.
7. Install fastener caps firmly against insulation face without compressing the material. Bend clip prongs flat against caps.

3.02 PROTECTION

- A. Protect installed insulation and vapor barriers from harmful exposures and from physical damage.

END OF SECTION