SECTION 07210

BUILDING INSULATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing thermal insulation.

B. Related Sections:

1. Firestopping insulation is specified in Section 07840.
2. Acoustical insulation is specified in Section 09820.
3. Painting is specified in Section 09900.

1.02 REFERENCE STANDARDS

A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC).

1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SUBMITTALS

A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.

B. Product Data:

1. Recycled Content: Furnish product data on post-consumer recycled content and post-industrial recycled content as a percentage of the full product composite.
2. Regional Materials: Furnish product data or letter stating the location (closest city, state) where product was manufactured (final processing or assembly) and, if available, the location where raw materials were harvested, extracted or recovered (mine, quarry, plantation, forest, recycling recovery center, etc.).

1.04 QUALITY ASSURANCE

A. Thermal Conductivity: Where insulation is indicated by "R" value, provide thickness required to achieve indicated value.

B. Fire Ratings: Comply with fire-resistance and flammability ratings specified.

1.05 ENVIRONMENTAL QUALITY ASSURANCE

A. Applicable LEED Credits: Refer to Section 01352.

1. Credit MRc4 – Recycled Content.
2. Credit MRc5 – Regional Materials.

1.06 INDOOR AIR QUALITY

A. Hermetically seal insulation products within wall, floor and ceiling cavities with appropriate barrier.

B. Protect ducts and HVAC system from loose insulation particulates.

C. Provide temporary ventilation of building areas where building insulation is being installed.

1.07 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.

PART 2 - PRODUCTS

2.01 BATT/BLANKET INSULATION

A. Faced Mineral/Glass Fiber Blanket/Batt Insulation: Formaldehyde-free 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.

1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50 when tested in accordance with ASTM E84.

2. Approved Manufacturers: Johns Manville "Foil-Faced Batts" or approved equal.

3. Thickness: As required for LTTR R21 in exterior walls and LTTR R30 at roofs.

4. Environmental Requirements: Glass fiber insulation shall have a post-consumer recycled content of 25-percent minimum; mineral wool insulation shall have a minimum 50-percent post industrial metallurgical slag; in accordance with California mandated requirements for post-consumer recycled glass and mineral requirements.

5. Where indicated, provide insulation with Lamtec Corporation "WMP-50" polypropylene/scrim/core/metalized polyester film facing. Insulation facing shall have a maximum flame spread and smoke developed values of 5 and 30 when tested in accordance with ASTM E84 / UL723. Film facing will be field painted black as specified in Section 09900.

2.02 MISCELLANEOUS MATERIALS

A. Mechanical Anchors: Miracle Adhesive Corp. "Stuck-Up", Stic-Klip Mfg. Co. "Stic-Klip" or approved equal.

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.

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.

4. Insulation shall be supported between joists with wire supports or by lacing wire across joists.

C. Horizontal Concealed Insulation:

1. Install insulation over insulation fasteners.

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.

3.03 WASTE MANAGEMENT

A. Plan and coordinate the insulation work to minimize the generation of offcuts and waste. Reuse insulation scraps to the maximum extent feasible.

B. Separate and recycle waste materials to the maximum extent possible.

END OF SECTION

SECTION 07262

SHEATHING PAPER

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing sheathing paper.

B. Related Sections:

1. Gypsum sheathing is specified in Section 06163.
2. Modified bituminous sheet membrane flashing is specified in Section 07656.
3. Window and door flashing is specified in Section 07657.
4. Metal lath and accessories are specified in Section 09207.

1.02 SUBMITTALS

A. Product Data: Manufacturer's product data and installation instructions.

B. Warranty.

1.02 QUALITY ASSURANCE

A. Comply with CBC Section 1404.2.

1.03 JOB CONDITIONS

A. Surfaces to receive sheathing paper shall be free from projecting nails, wires, or other conditions that might damage paper.

B. Surfaces to be covered shall be dry, and shall have dried in fair weather not less than 3-days following wetting by rain, frost, or otherwise.

1.04 WARRANTY

A. Warrant sheathing paper to be free from defects in materials and workmanship for a period of 10-years from Date of Substantial Completion. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Sheathing Paper:

1. Approved Manufacturer: Fortifiber Corporation "Super Jumbo Tex" or approved equal.
2. Material: Grade D Kraft paper having a 60-minute water permeance rating, complying with UBC Standard 14-1.
3. Water Vapor Transmission: 75 grams; 11-perms (MVT), ASTM E96.
4. Water Resistance: >60 minutes, ASTM D779.
5. Tensile Strength: 70-lb./inch, ASTM D828.

B. Fastenings:

1. Nails, staples, or tie wire, suitable for framing or backing.

2. Pressure-sensitive tape and/or adhesive may be utilized where appropriate and effective.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL

A. Installation Types: Double-layer installation over gypsum or plywood sheathing.

B. Openings, Penetrations and Metal Flashing Underlayment where Indicated: Flash with specified waterproof flashing membrane material.

C. Utilize sheathing paper in longest lengths practical to minimize joints.

D. Horizontal Joints: Lap paper not less than 2-inches.

E. Wall Corners: Wrap paper to overlap not less than 12-inches each side of corner.

F. Intermediate Vertical Joints:

1. Lap paper not less than 6-inches.

2. In adjacent sheets, offset joints not less than 48-inches.

3. In alternate sheets, offset joints not less than 24-inches.

4. Do not locate any two joints at same vertical alignment.

G. Lap paper over head flashings and base screeds and under sill flashings. Treat penetrations and other details as necessary for adequate weather protection.

H. Secure paper to maintain in place until covered by other materials.

I. When complete, sheathing paper shall be reasonably flat, without excessive warps and bulges, and free from unnecessary holes, cuts, tears, and other damage and defects.

3.02 DOUBLE-LAYER INSTALLATION

A. Install a one-half-width sheet, and overlay with a first full-width sheet, with bottom edge of both sheets placed at lowest level on wall to be sheathed.

B. Install a second full-width sheet with bottom edge placed 2-inches below line of top edge of first one-half-width sheet.

C. Install a third full-width sheet with bottom edge placed 2-inches below line of top edge of first full-width sheet.

D. Similarly, proceed upward to top of wall as required, finishing with a partial-width sheet as needed.

3.03 OPENINGS

A. Individually flash each opening head, jamb, and sill using waterproof flashing membrane specified in Section 07657.

END OF SECTION

SECTION 07264

UNDERSLAB VAPOR BARRIER

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing moisture barrier under concrete slabs-on-grade.

B. Related Sections:

1. Concrete is specified in Section 03300.

1.02 SUBMITTALS

A. Product Data: Include independent laboratory test results showing compliance with ASTM and ACI Standards. Include manufacturer's installation instructions for placement, seaming, and pipe boot installation.

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Protect products against damage during field handling and installation.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Vapor Barrier Sheeting: Stego Industries LLC "Stego Wrap 15-mil Class A" or approved equal.

1. Water Vapor Permeance: 0.012-perms, ASTM E96 and ASTM F1249.
2. Water Vapor Barrier: Meets or exceeds Class A, ASTM E1745.
3. Thickness: Not less than 15-mils.
4. Tensile Strength: 76.6 lbf./inch, ASTM D882.
5. Puncture Resistance: 2445 grams, ASTM D1709.

B. Sealing Material: High density polyethylene tape with pressure sensitive adhesive, minimum 4-inches wide.

C. Pipe Boots: Construct from vapor barrier sheeting material and pressure sensitive tape in accordance with manufacturer's instructions.

PART 3 - EXECUTION

3.01 INSPECTION

A. Below-grade and grading work and items penetrating moisture barrier shall be complete prior to start of installation.

3.02 INSTALLATION REQUIREMENTS

A. Vapor Barrier Sheeting:

1. Install in accordance with manufacturer's instructions and ASTM E1643.
2. Unroll with the longest dimension parallel with the direction of the pour.

3. Lap vapor barrier over footings and seal to foundation walls.

4. Overlap joints 6-inches and seal with pressure sensitive tape.

5. Seal penetrations, including pipes, with pipe boot.

6. Penetrations through vapor barrier sheeting except for reinforcing steel and permanent utilities are not permitted.

7. Repair damaged areas by cutting patches of vapor barrier sheeting, overlapping damaged area 6-inches and taping all four sides with pressure sensitive tape.

END OF SECTION