Foundation Insulation

R402.2.8 Basement walls.

Walls associated with conditioned basements shall be insulated from the top of the basement wall down to 10 feet (3048 mm) below grade or to the top of the footing, whichever is less. Foundation insulation shall be installed according to the manufacturer's installation instructions. Walls associated with unconditioned basements shall meet the requirements of this section unless the floor overhead is insulated in accordance with Sections R402.l.1 and R402.2.7 and the following requirements:

a. R-15 insulation for concrete and masonry foundations shall be installed according to R402.l.l.1 to R402.l.l.8 and a minimum of a R-10 shall be installed on the exterior of the wall. Interior insulation, other than closed cell spray foam, shall not exceed R-11. Foundations shall be waterproofed in accordance with the applicable provisions of the *International Residential Code* (IRC).

Exception: R-10 continuous insulation on the exterior of each foundation wall shall be permitted to comply with this code if the tested air leakage rate required in Section R402.4.1.2 does not exceed 2.6 air changes per hour and the total square feet between the finished grade and the top of each foundation wall does not exceed 1.5 multiplied by the total lineal feet of each foundation wall that encloses conditioned space. Interior insulation, other than closed cell spray foam, shall not exceed R-11. See footnote c to Table R402.2.l.

R402.1.1.3 Exterior nondraining foundation insulation requirements.

Any insulation assembly installed on the exterior of the foundation walls or on the perimeter of slabs-on-grade that does not permit bulk water drainage shall:

1. be made of water-resistant materials manufactured for that intended use;
2. be installed according to the manufacturer's installation instructions;
3. comply with either ASTM C578 or C1029, as applicable;
4. be covered with a 6-mil polyethylene slip sheet over the entire exterior surface; and
5. have a rigid, opaque, and weather-resistant protective covering to prevent degradation of the insulation's thermal performance. The protective covering shall cover the exposed exterior insulation and extend a minimum of 6 inches (152 mm) below grade. The insulation and protective covering system shall be flashed in accordance with IRC Section R703.8.

R402.1.1.4 Interior foundation insulation requirements.

Any insulation assembly installed on the interior of foundation walls shall meet the following requirements:

1. Masonry foundation walls shall be drained through each masonry block core to an approved interior drainage system.
2. If a frame wall is installed, it shall not be in direct contact with the foundation wall.
3. The insulation assembly shall comply with the interior air barrier requirements of Section R402.4.
4. The insulation assembly shall comply with Section R402.1.1.5, R402.l.1.6, or R402.l.1.7, as applicable.

R402.1.1.7 Fiberglass batt interior insulation.

Fiberglass batt insulation shall comply with the following:

1. The above-grade exposed foundation wall height shall not exceed 1.5 feet (457 mm).
2. The top and bottom plates shall be air sealed to the foundation wall surface and the basement floor.
3. A vapor retarder and air barrier shall be applied to the warm in winter side of the wall with permeance not greater than 1.0 in accordance with ASTM E96 procedure A and a permeance not less than 0.3 in accordance with ASTM E96 procedure B meeting the following requirements:
    a. the vapor and air barrier shall be sealed to the framing with construction adhesive or equivalent at the top and bottom plates and where the adjacent wall is insulated;
    b. the vapor and air barrier shall be sealed around utility boxes and other penetrations; and

c. all seams in the vapor and air barrier shall be overlapped at least 6 inches (152 mm) and sealed with compatible sealing tape or equivalent.