

**SECTION 07 21 13**  
**THERMAL INSULATION**

06-01-2012

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

- A. This section specifies thermal insulation for buildings.

**1.2 RELATED WORK**

- A. Insulation in connection with roofing and waterproofing: Section 07 22 00, ROOF AND DECK INSULATION.

**1.3 SUBMITTALS:**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
1. Insulation, each type used
  2. Adhesive, each type used.
  3. Tape
- C. Certificates: Stating the type, thickness and "R" value (thermal resistance) of the insulation to be installed.

**1.4 STORAGE AND HANDLING:**

- A. Store insulation materials in weathertight enclosure.
- B. Protect insulation from damage from handling, weather and construction operations before, during, and after installation.

**1.5 APPLICABLE PUBLICATIONS:**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
- |              |  |
|--------------|--|
| C270-10..... | Mortar for Unit Masonry  |
| C516-08..... | Vermiculite Loose Fill Thermal Insulation  |
| C549-06..... | Perlite Loose Fill Insulation  |
| C552-07..... | Cellular Glass Thermal Insulation.   |
| C553-08..... | Mineral Fiber Blanket Thermal Insulation for<br>Commercial and Industrial Applications |
| C578-10..... | Rigid, Cellular Polystyrene Thermal Insulation   |
| C591-09..... | Unfaced Preformed Rigid Cellular<br>Polyisocyanurate Thermal Insulation                |
| C612-10..... | Mineral Fiber Block and Board Thermal<br>Insulation                                    |

C665-06.....Mineral Fiber Blanket Thermal Insulation for  
Light Frame Construction and Manufactured  
Housing

C728-05 (R2010).....Perlite Thermal Insulation Board

C954-10.....Steel Drill Screws for the Application of  
Gypsum Panel Products or Metal Plaster Base to  
Steel Studs From 0.033 (0.84 mm) inch to 0.112  
inch (2.84 mm) in thickness

C1002-07.....Steel Self-Piercing Tapping Screws for the  
Application of Gypsum Panel Products or Metal  
Plaster Bases to Wood Studs or Steel Studs

D312-00(R2006).....Asphalt Used in Roofing

E84-10.....Surface Burning Characteristics of Building  
Materials

F1667-11.....Driven Fasteners: Nails, Spikes and Staples.

## **PART 2 - PRODUCTS**

### **2.1 INSULATION - GENERAL:**

- A. Where thermal resistance ("R" value) is specified or shown for insulation, the thickness shown on the drawings is nominal. Use only insulation with actual thickness that is not less than that required to provide the thermal resistance specified.
- B. Where "R" value is not specified for insulation, use the thickness shown on the drawings.
- C. Where more than one type of insulation is specified, the type of insulation for each use is optional, except use only one type of insulation in any particular area.
- D. Insulation Products shall comply with following minimum content standards for recovered materials:

Material Type	Percent by Weight
Perlite composite board	23 percent post consumer recovered paper
Polyisocyanurate/polyurethane	
Rigid foam	9 percent recovered material
Foam-in-place	5 percent recovered material
Glass fiber reinforced	6 percent recovered material
Phenolic rigid foam	5 percent recovered material
Rock wool material	75 percent recovered material

The minimum-content standards are based on the weight (not the volume) of the material in the insulating core only.

**2.2 MASONRY FILL INSULATION:**

- A. Vermiculite Insulation: ASTM C516, Type II.
- B. Perlite Insulation: ASTM C549, Type IV.

**PART 3 - EXECUTION**

**3.1 INSTALLATION - GENERAL**

- A. Fill all cells in lower building, floor to structure.

**3.2 MASONRY FILL INSULATION:**

- A. Pour fill insulation in voids of masonry units from tops of walls, or from sill where windows or other openings occur.
- B. Pour in lifts of not more than 6 m (20 feet).

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*Replace Boilers - FCA D, Energy*  
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