

SECTION 07 21 23
LOOSE-FILL INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section covers loose fill insulation and all necessary blocking to install insulation over ceilings and in wall spaces where shown.
- B. Install insulation in sufficient thickness to provide thermal resistance "R" values of "R" 30 above ceilings and "R" 19 in wall space.

1.2 SUBMITTALS

- A. Manufacturer's Literature:
 - 1. Submit current copies of the insulation manufacturer's printed fact sheet literature, including descriptive data, insulation characteristics, and instructions for installation and protection of insulation.
 - 2. Submit copy of "Bag Label".

1.3 STORAGE

- A. Inspect materials delivered to the site for damage and unload and store with a minimum of handling.
- B. Establish storage spaces in dry locations, not subject to open flames or sparks, and permitting easy access for inspection and handling.

1.4 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by the basic designation only. Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.
- B. American Society of Testing and Materials (ASTM):
 - C612-10 Mineral Fiber Block and Board Thermal Insulation
 - C728-13 Perlite Thermal Insulation Board

- C739-11 Cellulosic Fiber Loose-Fill Thermal Insulation
- C755 Selection of Water Vapor Retarders for Thermal Insulation
- C764-11 Mineral Fiber Loose-Fill Thermal Insulation
- C930-12 Potential Health and Safety Concerns Associated with Thermal Insulation Materials and Accessories
- C1015-06(2011)e1 Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation
- D4397-10 Polyethylene Sheeting for Construction, Industrial, and Agriculture Applications
- E96/E96M-12 Water Vapor Transmission of Materials
- C. National Fire Protection Associations (NFPA):
 - 211-13 Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances
- C. Scientific Certification Systems (SCS Global): SCS Indoor Advantage certification.
- D. UL Environment, GREENGUARD (ULE GREENGUARD): The GREENGUARD Product Guide (online)

1.5 SAFETY PRECAUTIONS

- A. Provide installers with dust/mist respirators, training in their use, and protective clothing.
- B. Consider other safety concerns and measures as outlined in ASTM C930.

PART 2 - PRODUCTS

2.1 LOOSE FILL INSULATION

- A. Cellulosic or Wood Fiber Loose Fill: ASTM C739.
- B. Mineral Fiber Loose Fill: ASTM C764, Type I or II.
- C. Prohibited Materials:
 1. Asbestos-containing materials.
 2. Urea Formaldehyde-containing materials.
 3. Ammonium Sulfate-containing materials.

2.2 BLOCKING

- A. Wood, metal, mineral fiber or perlite boards or other materials approved by the RE/COR.
- B. Mineral Fiber Board: ASTM C612, Type IB.
- C. Perlite Board: ASTM C728.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Where possible, inspect attic(s) and wall(s) to receive insulation for conditions which will adversely affect the execution of the work or create a safety hazard. Report unsatisfactory conditions to the RE/COR.
- B. Do not install insulation until unsatisfactory conditions have been corrected.
- C. Follow ASTM C1015 and check for the following:
 - 1. Defects in electrical fixtures, equipment, wiring, junction boxes, receptacles, and switches that will cause hazards.
 - 2. Openings through which the loose fill insulation material may escape.
 - 3. Air ducts which appear to have joints that are not secure or sealed.

3.2 PREPARATION

- A. Prior to the installation of insulation, provide blocking as specified herein and in accordance with ASTM C1015.
- B. Install blocking around ceiling access-panel(s), and vents if the level to which the unsettled insulation will be installed exceeds their height. Cover openings into the attic with temporary blocking to prevent insulation from falling into the opening, including spaces enclosed by blockings.
- C. Install blocking around heat producing devices with minimum clearances as specified herein.
 - 1. Install blocking 50 mm (two inches) above the height of the finished insulation installation and in a manner that ensures

that devices which may require maintenance or servicing remain accessible after the insulation is installed.

2. Minimum clearances for blocking around heat producing devices to be as follows:
 - a. Masonry chimneys for equipment and incinerator(s) operating at a temperature of not more than 800 degrees C (1500 degrees F): 100 mm (Four inches) from the outside face of the masonry.
 - b. Vents, chimney and vent connectors, and chimneys other than masonry chimneys: Minimum clearances as required by NFPA 211.

3.3 INSTALLATION

B. Insulation:

1. Install insulation in accordance with ASTM C1015 and the requirements specified.
2. Do not install insulation until the requirements specified in the INSPECTION and PREPARATION paragraphs have been carried out and any defects which were identified have been corrected and their cause eliminated.
3. Pneumatic installation of thermal insulation must comply with OSHA. Supply and utilize the personnel protective equipment and engineering controls necessary for a safe effective installation. Use only pneumatic equipment in accordance with the manufacturer's instructions.
4. Install the insulation allowing it to settle to its natural density. Do not tamp or rod the insulation.
5. Install insulation in sufficient depth to provide the thermal value specified after settlement of the insulation. To obtain a minimum "R" value of 30 or as shown, install insulation to a minimum thickness of 12.25 inches) or as shown, using the number of bags per 1000 squares feet as shown on the manufacturer's "Bag Label".
6. For pneumatic installations, use the least air pressure meeting the manufacturer's instructions.

7. Do not blow the insulation into electrical devices and vents which open into the attic and other spaces to be insulated.
8. Fit the attic side of access panels with perlite or mineral fiber insulation boards.

C. Post Installation Procedures:

1. In accordance with ASTM C1015.
2. Remove temporary blockings over vent openings in attic(s).

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