

Section 07200
Roof/Ceiling Thermal
Insulation

Part 1 General

1.01 Summary

- A. Provide glass fiber thermal insulation for (roof) (ceiling) assembly as indicated in building plans.

1.02 Materials Provided in Other Sections

- A. Section 03500-Cementitious Decks
- B. Section 05300-Metal Decking
- C. Section 07410-Preformed Roof and Wall Panels
- D. Section 07500-Membrane Roofing
- E. Section 07610-Metal Roofing
- F. Section 09120-Ceiling Suspension Systems
- G. Section 09500-Acoustical Treatment
- H. Section 09545-Special Ceiling Finish Panels

1.03 References

- A. American Society for Testing and Materials (ASTM).
 - 1. E 84 Test Method for Surface Burning Characteristics of Building Materials.
 - 2. E 96 Test Method for Water Vapor Transmission of Materials
 - 3. E 136 Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
 - 4. C 177 Test Method for Steady-State Thermal Transmission Properties by means of the Guarded Hot Plate
 - 5. C 423 Test Method for Sound Absorption and the Sound Absorption Coefficient by the Reverberation Room Method
 - 6. C 518 Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter
 - 7. C 553 Standard Specification for Mineral Fiber Blanket and Felt Insulations
 - 8. C 612 Standard Specification for Mineral Fiber Block and Board Thermal Insulation
 - 9. C 665 Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

1.04 Submittals

- A. Product Data: Submit Owens-Corning product literature, samples and installation instructions for specified insulation.

1.05 Delivery

- A. Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.
- B. Label insulation packages to include material name, production date and/or product code.
- C. Deliver and store materials under provision of Section (01600) (01620).

1.06 Limitations

- A. Do not use unfaced insulation in exposed applications where there is potential for skin contact and irritation.
- B. Kraft and standard foil facings will burn and must not be left exposed. The facing must be installed in substantial contact with the unexposed surface of the ceiling finish material. Protect facing from any open flame or heat source.

Part 2 Products

2.01 Manufacturer

- A. Owens-Corning.

2.02 700 Series Insulation

- A. Type: 701 Unfaced glass fiber thermal insulation complying with ASTM C 553, Type III and ASTM C 665, Type I.
- B. Type: 711 Unfaced glass fiber thermal insulation complying with ASTM C 553, Type III and ASTM C 665, Type I.
- C. Type: 703 Unfaced, FRK (foil) faced or ASJ (white) faced glass fiber thermal insulation complying with ASTM C 612, Type 1A and 1B.
- D. Type: 705 Unfaced, FRK (foil) faced or ASJ (white) faced glass fiber thermal insulation complying with ASTM C 612, Type 1A and 1B.
- E. Size: R-Value_____
When tested in accordance with ASTM C 518.
Thickness_____ Width_____ Length_____
- F. Vapor Retarder Perm Rating:
 - 1. FRK (foil) facing Perms Maximum 0.02
 - 2. ASJ (white) facing Perms Maximum 0.02When tested in accordance with ASTM C 1136.
- G. Surface Burning Characteristics:
Maximum flame spread: 25
Maximum smoke developed: 50
When tested in accordance with ASTM E 84.
- H. Noise Reduction Coefficient: NRC____
When tested in accordance with ASTM C 423 on a Type A mounting.
- I. Dimensional Stability:
Linear shrinkage less than 0.1%

2.03 Flame Spread 25 Insulation

- A. Type: FRK (foil) or PSK (white) faced glass fiber thermal insulation complying with ASTM C 665, Type III, Class A.
- B. Size:
 - Metal Frame Insulation**
R-Value_____
 - When tested in accordance with ASTM C 518.
 - Thickness_____ Width_____ Length_____
 - Wood Frame Insulation**
R-Value_____
 - When tested in accordance with ASTM C 518.
 - Thickness_____ Width_____ Length_____
 - Special Application Insulation**
R-Value_____
 - When tested in accordance with ASTM C 518.
 - Thickness_____ Width_____ Length_____
- C. Vapor Retarder Perm Rating:
 - FRK (foil) facing Perms Maximum 0.10
 - PSK (white) facing Perms Maximum 0.10
 - When tested in accordance with ASTM E 96.
- D. Surface Burning Characteristics:
 - Maximum flame spread: 25
 - Maximum smoke developed: 50
 - When tested in accordance with ASTM E 84.
- E. Combustion Characteristics:
 - Classified non-combustible by model building codes.
 - Not required to be covered. May be left exposed.
- F. Dimensional Stability:
 - Linear shrinkage less than 0.1%

2.04 Sonobatts® Insulation

- A. Type: Unfaced glass fiber insulation complying with ASTM C 665, Type I.
- B. Type: Kraft faced glass fiber insulation complying with ASTM C 665, Type II, Class C.
- C. Size: R-Value_____
- When tested in accordance with ASTM C 518.
- Thickness_____ Width_____ Length_____
- D. Vapor Retarder Perm Rating:
 - Kraft-facing Perms Maximum 1.00
 - When tested in accordance with ASTM E 96.
- E. Surface Burning Characteristics:
 - 1. Unfaced Insulation
 - Maximum flame spread: 10
 - Maximum smoke developed: 10
 - 2. Kraft Faced Insulation
 - Maximum flame spread: Not Rated

Maximum smoke developed: Not Rated

When tested in accordance with ASTM E 84.

Kraft facings on this insulation will burn and must not be left exposed. The facing must be installed in substantial contact with the unexposed surface of the ceiling finish material. Protect facing from any open flame or heat source.

F. Combustion Characteristics:

Unfaced insulation passes ASTM E 136.

G. Dimensional Stability:

Linear shrinkage less than 0.1%

2.05 Thermal Batt Insulation

A. Type: Unfaced glass fiber thermal insulation complying with ASTM C 665, Type I.

B. Type: Kraft-faced glass fiber insulation complying with ASTM C 665, Type II, Class C.

C. Type: Foil-faced glass fiber thermal insulation complying with ASTM C 665, Type III, Class B and C.

D. Size:

Metal Frame Insulation

R-Value_____

When tested in accordance with ASTM C 518.

Thickness_____ Width_____ Length _____

Wood Frame Insulation

R-Value_____

When tested in accordance with ASTM C 518.

Thickness_____ Width_____ Length _____

E. Vapor Retarder Perm Rating:

1. Foil-facing Perms Maximum 0.50

2. Kraft-facing Perms Maximum 1.00

When tested in accordance with ASTM E 96.

F. Surface Burning Characteristics:

1. Unfaced Insulation

Maximum flame spread: 10

Maximum smoke developed: 10

2. Foil-Faced Insulation

Maximum flame spread: 75

Maximum smoke developed: 150

When tested in accordance with ASTM E 84.

3. Kraft Faced Insulation

Maximum flame spread: Not Rated

Maximum smoke developed: Not Rated

Kraft and standard foil facings on this insulation will burn and must not be left exposed. The facing must be installed in substantial contact with an

approved roof/ceiling construction material. Protect facing from any open flame or heat source.

- G. Combustion Characteristics:
Unfaced Insulation Passes ASTM E 136.
- H. Dimensional Stability:
Linear shrinkage less than 0.1%

2.06 Quiet Zone Acoustic Batts

- A. Type: Kraft faced glass fiber acoustical insulation complying with ASTM C 665, Type II, Class C.
- B. Size:
Thickness___ Width___ Length___
- C. Surface Burning Characteristics:
 - 1. Maximum flame spread: Not Rated
 - 2. Maximum smoke developed: Not Rated
When tested in accordance with ASTM E 84.
Kraft facing on this insulation will burn and must not be left exposed. The facing must be installed in substantial contact with the unexposed surface of the ceiling finish material. Protect facing from any open flame or heat source.
- D. Sound Transmission Class: STC___
- E. Dimensional Stability:
Linear Shrinkage less than 0.1%

2.07 Other Materials

Provide materials, not specifically described but required for a complete and proper installation of the work in this section.

Part 3 Execution

3.01 Inspection and Preparation

- A. Examine the areas and conditions under which work of this section will be installed. Verify that adjacent materials are dry and ready to receive insulation. Verify mechanical and electrical services within the above ceiling space have been tested and inspected.
- B. Provide written report listing conditions detrimental to performance of work in this section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 Installation - General

- A. Comply with manufacturer's instructions for particular conditions of installation in each case.
- B. Under Roof Decks
Apply insulation directly to the interior surface of the underside of roof deck with appropriate spindle or prong-type anchors.
- ◇ Fasten anchors to deck by welding the pin to metal and then impale the insulation, or by using pre-attached heads and welding them through the insulation.
 - ◇ Fasten anchors to deck with adhesive. Follow manufacturer's recommendations for surface preparation and adhesive pattern.
 - ◇ Impale insulation on anchor and secure with washer. Select pin lengths to ensure tight fit. Protect pin tips where subject to human contact. See manufacturer's diagram for impaling pin pattern.
- C. Between Open Web Bar Joists
Wire up insulation under roof decks by running 16 or 18 gauge wire diagonally or perpendicular to the insulation every 18 to 24 inches.
- D. Between Wood Roof Rafters
Staple insulation to the bottom face of the roof rafter at 8 to 12 inch intervals. Staple the first flange on inside face of roof rafter. Staple every 6-8" apart with a staple within 1" of each end of the batt. Position batt in cavity and staple the other flange to the adjoining rafter.
- E. Over Suspended Ceilings
Install insulation over ceiling panels. Butt insulation together tightly to prevent thermal leaks.

3.03 Installation - Vapor Retarders

Maintain vapor retarder integrity by tightly abutting adjacent insulation. Repair punctures or tears in vapor retarder facing by taping. Follow tape manufacturer's application recommendations.

3.04 Material Storage and Protection

Protect insulation from damage and from becoming wet before, during and after installation.

END OF SECTION