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# SECTION 07 21 00 THERMAL NSULATION

**PART 1 GENERAL**

* 1. SUMMARY
     1. Section Includes:
        1. Blown-in fiberglass insulation.
     2. Related Sections:
        1. Section 06 10 00 - ROUGH CARPENTRY: Wood framing.
        2. Section 07 26 00 - VAPOR RETARDERS: Vapor retarder materials.
        3. Section 07 27 00 - AIR BARRIERS: Air seal materials to adjacent insulation.
        4. Section 07 92 00 - JOINT SEALANTS: Rod and sealant at control and expansion joints.
        5. Section 07 80 00 - FIRE AND SMOKE PROTECTION: Insulation installed in conjunction with firestopping or smoke containment systems.
        6. Section 09 20 00 - PLASTER AND GYPSUM BOARD: Wall and ceiling finish and thermal barrier.
  2. REFERENCES STANDARDS
  3. ASTM C518 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
  4. ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
  5. ASTM C764 Standard Specification for Mineral Fiber Loose-Fill Thermal Insulation.
  6. ASTM C1104 Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
  7. ASTM C1149 Standard Specification for Self-Supported Spray Applied Cellulosic Thermal Insulation
  8. ASTM C1304 Standard Test Method for Assessing the Odor Emission of Thermal Insulation Materials.
  9. ASTM C1338 Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings.
  10. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
  11. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
  12. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750°C.
  13. ASTM E970 Standard Test Method for Critical Radiant Flux of Exposed Attic Floor Insulation Using a Radiant Heat Energy Source.
  14. ASTM G21 Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
  15. CIWMB Section 01350 Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers
  16. SUBMITTALS

1. General: Submit listed submittals in accordance with provisions of [Section 01300 Administrative Requirements].
2. Product Data: Submit manufacturer’s product data defining product characteristics, performance criteria, product limitations.
3. Samples: Submit manufacturer’s standard selection and verification samples.
4. Quality Assurance/Control Submittals: Submit the following:
   1. Test Reports: Upon request, submit [Fire] [Sound] [And] [Thermal] test reports from recognized test laboratories.
   2. Certificates: Submit manufacturer’s certificate that products meet or exceed specified requirements.
5. Manufacturer’s Installation Instructions, including:
   1. Information on required environmental conditions for proper installation.
   2. Proper storage and handling requirements.
   3. Installation methods.
   4. QUALITY ASSURANCE
6. Obtain building insulation through a single source.
7. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.
8. Ensure installer is a certified JM Spider Plus insulation contractor.
9. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies.].
   1. [Code agency name].
      1. [Report or approval number].
10. Mock-Ups: [Specify requirements for mock-up.].
    1. Subject to acceptance by owner, mock-up may be retained as part of finish work.
    2. If mock-up is not retained, remove and properly dispose of mock-up.
11. Preinstallation Meetings: [Specify requirements for meeting.].
    1. DELIVERY, STORAGE & HANDLING
12. General: Comply with [Division 1 Product Requirement Section].
13. Delivery: Deliver materials in manufacturer’s original, unopened, undamaged containers with identification labels intact.
14. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
    1. FIELD CONDITIONS
15. Do not install insulation when temperature or weather conditions are detrimental to successful installation.

# PART 2 PRODUCTS

* 1. BLOW-IN FIBER GLASS INSULATION
     1. Manufacturer: Johns Manville, a Berkshire Hathaway Company

1. JM Spider™ Plus Custom Insulation System

* + - * 1. Thermal Resistance (R-Value) (ASTM C 518): [Specify R-value].
        2. Combustion Characteristics (ASTM E136): Pass.
        3. Critical Radiant Flux (ASTM E970): 0.11 Btu/ft2 × s (0.12 W/cm2) or greater.
        4. Smoldering Combustion (ASTM C 1149): Pass
        5. Water Vapor Sorption (ASTM C1104): 5% or less.
        6. Odor Emission (ASTM C1304): Pass.
        7. Corrosiveness (ASTM C665, 13.8): Pass.
        8. Fungi Resistance (ASTM C1338): Pass.
        9. Prove through documentation that product passes CIWMB Section 01350 for indoor air quality.
        10. Thickness: [Specify thickness.].
        11. Flame Spread (ASTM E84): 25, maximum.
        12. Smoke Developed (ASTM E84): 50, maximum.
        13. Material Standards: ASTM C1014 and ASTM C764.
    1. Insulating Materials:
       1. General: Provide insulating materials that comply with requirements and referenced standards.
          1. Loose-fill: Provide required thickness and density per manufacturer’s instructions to achieve indicated R-value.
  1. ACCESSORIES
     1. Fiberglass blowing system consisting of vacuum fan and generator, water tank, blowing and vacuum hoses, high-pressure water pump and hose, blowing nozzle attachments, and wall scrubber
        1. JM Spider Plus Insulation Delivery System is compatible with most fiber glass blowing machines, ensure compatibility prior to installation.

# PART 3 EXECUTION

* 1. EXAMINATION:
     1. Do not begin installation until substrates have been properly prepared.
     2. Verify that all exterior and interior wall, partition, and floor/ceiling assembly construction has been completed to the point where the insulation may correctly be installed.
     3. Verify that mechanical and electrical services in ceilings, walls and floors have been installed and tested and, if appropriate, verify that adjacent materials are dry and ready to receive insulation.
     4. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
  2. PREPARATION

1. Clean surfaces thoroughly prior to installation.
2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   1. INSTALLATION
      1. Install in accordance with manufacturer's instructions.
      2. Verify fiberglass blowing machine is compatible with JM Spider™ Plus insulation.
      3. Ensure a minimum installed density of 1.5pcf is achieved in vertical applications and 1.8pcf is achieved in overhead applications.
      4. Use proper fluid delivery system (water or air depending on application) and maintain recommended moisture application volume.
      5. Place loose-fill insulation into spaces and onto surfaces as shown, by machine blowing to comply with ASTM C1015. Level horizontal applications to uniform thickness as indicated. Hold insulation back from air vents, flues and heat-generating appliances.
      6. Water Piping Coordination: If water piping is located on inside of insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
      7. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise shown or required to make up total thickness.
   2. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.
      3. Comply with the instructions and recommendations of the building insulation manufacturer.

# END OF SECTION