1. Section 072119   
   Foamed-In-Place Insulation
   1. PART 1  GENERAL
      1. REFERENCE STANDARDS
         1. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2021.
         2. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics; 2019.
         3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
         4. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2023.
         5. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.
      2. SUBMITTALS
         1. See Section 013000 - Administrative Requirements for submittal procedures.
         2. Product Data:  Provide product description, insulation properties, ​​and preparation requirements.
   2. PART 2  PRODUCTS
      1. MATERIALS
         1. Foamed-In-Place Insulation:  Medium-density, rigid or semi-rigid, ​closed cell​ polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
            1. Thermal Resistance:  R-value of 7.1, minimum, per 1-inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
            2. Water Vapor Permeance:  Vapor retarder; 2 perms, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.
            3. Water Absorption:  Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.
            4. Air Permeance:  0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
            5. Closed Cell Content:  At least 90 percent.
            6. Surface Burning Characteristics:  Flame spread/smoke developed index of 25/450, maximum, when tested in accordance with ASTM E84.
      2. ACCESSORIES
         1. Primer:  As required by insulation manufacturer.
   3. PART 3  EXECUTION
      1. APPLICATION
         1. Apply insulation in accordance with manufacturer's instructions.
         2. Apply insulation by spray method, to a uniform monolithic density without voids.
         3. Apply to achieve a thermal resistance ​R-value of See Drawings​.
2. END OF SECTION

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