SECTION 07 21 19

FOAM-IN-PLACE BUILDING INSULATION

Display hidden notes to specifier. (Don't know how? [Click Here](https://www.arcat.com/sd/display_hidden_notes.shtml))

*Copyright 2013 - 2016 ARCAT, Inc. - All rights reserved*

\*\* NOTE TO SPECIFIER \*\* ICP Adhesives & Sealants Inc. ; Polyurethane Foam Products.  
This section is based on the products of ICP Adhesives & Sealants Inc. , which is located at:  
2775 Barber Rd.  
Norton, OH 44203  
Tel: 330-753-4585  
Fax: 330-753-5199  
Email: [request info (info@fomo.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=ICP+Adhesives+%26+Sealants+Inc.+&coid=32583&rep=&fax=330-753-5199&message=RE:%20Spec%20Question%20(07211fpi):%20%20&mf=)  
Web: <https://www.icpgroup.com>   
 [ [Click Here](https://www.arcat.com/arcatcos/cos32/arc32583.html) ] for additional information.  
ICP Adhesives & Sealants, Inc. (ICP) a division of ICP Group, is a leading manufacturer of low pressure one- and two-component polyurethane foam sealant and adhesive products in pressurized, disposable, and refillable packaging. Our pressurized polyurethane foam adhesives offer leading products for adhering and securing roofing tile, single ply fleece back membranes and insulation across a range of compatible substrates, in both new and reroof applications. Our low pressure one- and two-component polyurethane foam sealants, adhesives, pour-in-place and spray foams offer performance, enhanced results and experience for contractors and contribute to a better environment.  
We are pleased to announce that ICP has received UL GREENGUARD Children & Schools Certification for low chemical emissions on 14 of our products. This prestigious certification helps identify products that contribute to the creation of healthier indoor environments and further demonstrates ICP's commitment to product stewardship.  
Disclaimer: The manufacturer has reviewed the product information contained in this specification. The specification writer is responsible for product selection as well as application, should questions arise, the specification writer should contact the manufacturer to ensure that all options are available and the information associated is correct and valid.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Low pressure foam sealants and adhesives of the following types:
       1. Sealant foams.
       2. Spray foams.
       3. Adhesive foams.
       4. Pour-In-place foams.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 07 26 00 - Vapor Retarders.
    2. Section 07 27 26 - Fluid-Applied Membrane Air Barriers .
    3. Section 07 21 26 - Blown Insulation.
    4. Section 07 32 26 - Plastic Roof Tiles
    5. Section 07 50 00 - Membrane Roofing.
    6. Section 07 91 26 - Joint Fillers.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Architectural Manufacturers Association (AAMA) 812 - Voluntary practice for assessment of single component aerosol expanding polyurethane foams for sealing rough openings of fenestration installations.
    2. ASTM International (ASTM):
       1. ASTM C423 - Standard test method for sound absorption and sound absorption coefficients by reverberation room method.
       2. ASTM C518 - Standard test method for steady state thermal transmission properties by means of the heat flow meter apparatus.
       3. ASTM C1620 - Standard specification for aerosol polyurethane and aerosol latex foam sealants.
       4. ASTM D1621 - Standard test method for compressive properties of ridged cellular plastics.
       5. ASTM D1622 - Standard test method for apparent density of rigid cellular plastics.
       6. ASTM D2842 - Standard test method for water absorption of rigid cellular plastics.
       7. ASTM D3498 - Standard specifications for adhesives and field gluing plywood to lumber framing for floor systems.
       8. ASTM D6464 - Standard specification for expandable foam adhesives for fastening gypsum wallboard to wood framing.
       9. ASTM E72 - Standard test methods of conducting strength tests of panels for building construction.
       10. ASTM E84/UL 723 - Standard test method for surface burning characteristics of building materials.
       11. ASTM E90 - Standard test method for laboratory measurement of airborne sound transmission loss of building partitions and elements.
       12. ASTM E96 - Standard test methods for water vapor transmission of materials.
       13. ASTM E283 - Standard test method for determining rate of air leakage through exterior windows, curtain walls, and doors under specified pressure differences across the specimen.
       14. ASTM E2178 - Standard test method of air permeance of building materials.
       15. ASTM G21 - Standard practice for determining resistance of synthetic polymeric materials to fungi.
       16. ASTM D1623 - Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
       17. ASTM D2126 - Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
    3. CAN/ULC S711.1 - Standard for thermal insulation - bead-applied two component polyurethane air sealant foam part 1: material specification.
    4. Consumer Product Safety Commission (CPSC):
       1. CPSC 16CFR-1201 - Safety Standard for Architectural Glazing Materials.
    5. ICC-ES AC377 - Acceptance criteria for spray applied foam plastic insulation.
    6. NFPA 286 - Standard methods of fire tests for evaluating contribution of wall and ceiling interior finish to room fire growth.
    7. UL94 - Standard for safety of flammability of plastic materials for parts in devices and appliances.
    8. UL 2818 - GREENGUARD GOLD certification program for chemical emissions of building materials, finishes, and furnishings.
    9. 33 CFR 183.114 Subpart F Title 33 Code of Federal Regulations - navigation and navigable waters - specification requirements for flotation.
    10. Miami-Dade County, FL Building Code Compliance Office Protocol:
        1. TAS 101 - Test Procedure for Static Uplift Resistance of Mortar or Adhesive Set Tile Systems.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including.
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
  2. QUALITY ASSURANCE

\*\* NOTE TO SPECIFIER \*\* Handi-Foam, Handi-Fill, Handi-Flow, Handi-Seal, Handi-Stick and Polyset are for professional use only.

* + 1. Installer Qualifications:
       1. For professional use only.
       2. Provide qualified installers, familiar with the application and products being used per manufacturer's guidelines.
  1. ENVIRONMENTAL REQUIREMENTS
     1. Comply with manufacturer's recommended temperature and substrate requirements during application and curing of the product. Substrate must be clean, dry, firm, free of loose particles and free of dust, grease and mold release agents. Protect surfaces not to be foamed.
     2. Provide adequate ventilation where the product is being applied to help control worker exposure to airborne contaminants.
     3. Consult the manufacturer's Safety Data Sheets, product stewardship guidelines and operating instructions before use.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Store in a dry location. Comply with manufacturers operating and technical instructions for storage, handling and personal protection information prior to and during product installation.
     2. Do not store full tanks above 100 degree F (38 degree C). Storage of partial or used tanks above 90 degree F (32 degree C) for extended periods may reduce the shelf life of the product. Avoid long-term storage in direct sunlight or near sources of heat.
  3. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: ICP Adhesives & Sealants Inc. , which is located at: 2775 Barber Rd.; Norton, OH 44203; Tel: 330-753-4585; Fax: 330-753-5199; Email: [request info (info@fomo.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=ICP+Adhesives+%26+Sealants+Inc.+&coid=32583&rep=&fax=330-753-5199&message=RE:%20Spec%20Question%20(07211fpi):%20%20&mf=); Web: <https://www.icpgroup.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. SEALANT FOAMS

\*\* NOTE TO SPECIFIER \*\* Handi-Foam® Sealants are designed to seal and fill small cracks, gaps and voids. Handi-Foam sealants are a closed cell, single component foam. It is applied with a straw applicator or a professional dispensing unit. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Sealant.
       1. ASTM C518: 4.7/inch.
       2. ASTM E2178: .00028 cfm/ft2.
       3. UL 723 Classified #R13919 Flame Spread 25 Smoke Developed 50 (12.5 percent).
       4. ASTM E283: less than .0025 cfm/ft2.
       5. ULC Classified - File #R13919 CAN/ULC S102 Flame Spread 15 Smoke Developed 25 (12.5 percent).
       6. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Handi-Foam® Sealants are designed to seal and fill small cracks, gaps and voids. Handi-Foam sealants are a closed cell, single component foam. It is applied in a cylinder to be used with a brass nozzle or convertible gun. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Cylinder 40 Series.
       1. ASTM C518: 5.0/inch.
       2. ASTM E283: less than .0025 cfm/ft2.
       3. UL 723 Classified #R13919 Flame Spread 5 Smoke Developed 10 (12.5 percent).
       4. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Handi-Foam® Window & Door low pressure one-component polyurethane foam sealant is a closed cell, low pressure build window and door foam sealant. Handi Foam Window & Door complies with AAMA Doc. 812 and will not bow or distort windows or doors. Formulated with Dry Seal Technology®, Handi-Foam Window & Door is designed to resist moisture and mold problems. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Window and Door.
       1. Standards and Compliance:
          1. Shall comply with AAMA (American Architectural Manufacturers Association) specification for low pressure build (doc. #812).
          2. UL 723 Classified Flame Spread 25 Smoke Developed 50 (3/4 inch bead).
          3. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Handi-Foam® Fireblock Sealants are designed to seal, fill, bond and stop air infiltration. Handi-Foam is more effective than traditional fireblock materials at blocking flames and smoke.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Fireblock.
       1. Standards and Compliance:
          1. UL 723 Classified #R13919 Flame Spread 25 Smoke Developed 50 (12.5 percent)
          2. E814 - Modified.
          3. ULC Classified - File # R13919 CAN/ULC S102 Flame Spread 15 Smoke Developed 25.
          4. Conforms to NFPA 286.
          5. Evaluated per UL-ER13919-01. Fireblocking shall be used to slow the passage of flame and smoke in the event of a fire in residential construction. Product shall be orange colored foam allowing easy identification by code officials.
          6. Fireblocking shall be provided as required by the International Residential Code, Section R602.8 to be provided type V residential fire block.
          7. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Handi-Foam Fireblock West is designed to effectively seal, fill, bond and stop air infiltration in even hottest and driest climates of the Western United States. Handi-Foam is more effective than traditional fireblock materials at blocking flames and smoke. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Fireblock West.
       1. Standards and Compliance:
          1. UL 723 Classified #R13919 Flame Spread 25 Smoke Developed 50 (12.5 percent).
          2. E814 - Modified.
          3. Conforms to NFPA 286.
          4. Evaluated per UL-ER13919-01. Fireblocking shall be used to slow the passage of flame and smoke in the event of a fire in residential construction. Product shall be orange colored foam allowing easy identification by code officials.
          5. Shall comply with AAMA (American Architectural-Manufacturers Association) specification for low pressure build (doc. #812).
          6. Fireblocking shall be provided as required by the International Residential Code, Section R602.8 to be provided type V residential fire block.
          7. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.
  1. SPRAY FOAMS

\*\* NOTE TO SPECIFIER \*\* Handi-Foam® Quick Cure SPF is designed to fill and insulate large voids and surfaces. They are dispensed using the patented Handi-Gun® Dispensing Unit for accurate and precise applications. Available in a variety of sizes. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Quick Cure.
       1. Performance:
          1. ASTM C518 - Aged R Value: 6/inch.
       2. ASTM D1622 - Density 1.75 pcf.
       3. Standards and Compliance:
          1. ASTM E84 Class 2 (B) Flame Spread 75 Smoke Developed 450.
          2. Contains a non-flammable HFC propellant.
       4. ASTM E283 - Air permeability: .003 cfm.ft2 at 1 inch thickness.
       5. ASTM E96 - Water vapor transmission: 1.99perms/1inch at 1.88perms/2.5inches.
       6. UL94 Plastics flammability: HF-1.
       7. ASTM G21 - Fungi resistance: Pass, with no growth.
       8. ASTM D1621 - Compressive strength: 27psi.
       9. ASTM D1623 - Tensile strength: 29psi (wood).
       10. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Handi-Foam® E84 Class 1 SPF is designed to fill and insulate large voids and surfaces. They are dispensed using the patented Handi-Gun® Dispensing Unit for accurate and precise applications. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam E-84 Class 1.
       1. Performance:
          1. ASTM C518 - Aged R Value: 6/inch.
       2. ASTM D1622 - Density: In place 2.1 pcf, free-rise 1.75 pcf.
       3. Standards and Compliance:
          1. ASTM E84 Class 1 (A) Flame Spread 20 Smoke Developed 400 at 2" thickness.
          2. ASTM D1621 - Compressive strength 26 psi.
          3. ASTM D1623 - Tensile strength when testing with OSB 20psi, CMU 25psi, and steel 22psi.
          4. ASTM E96 - Water vapor transmission: 1.57 perms/inch, 1.44 perms/2 inches, 1.00 perm/3 inches.
          5. ASTM E283 - Air permeability: .003 cfm/ft2 (0.02 l/s/m2) at 1inch thickness.
          6. ASTM G21 - Fungi Resistance: Pass, with no growth.
          7. CCMC 13455-L obtained by meeting the requirements of CAN/ULC S711.1 Standard for thermal insulation. Bead-Applied Two Component Polyurethane Air Sealant Foam Part 1: Material Specification.
          8. ICC-ES AC377 - ESR-2717.
          9. NFPA 286 for use in roof/wall junctions in attic/wall penetrations at 2" thickness x 6" wide with unlimited length without a thermal barrier. Also in accordance with NFPA 286 for foam to be used in duct joint sealing applications in residential construction without an ignition barrier.
          10. ASTM D2842 - Water Absorption: 2.5 percent.
          11. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Ideal for repairing polyurethane roofs. Designed for application where higher compressive strengths are required. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Roof Patch.
       1. Performance:
          1. ASTM C518 - Aged R Value: 6/inch.
          2. ASTM D1623-Compressive Strength: 40 PSI.

\*\* NOTE TO SPECIFIER \*\* High expansion, open cell SPF. Use where moisture is not a concern or where structural rigidity is not required. For use in sound deadening. Do not use in "flash and batt" applications. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Foam Sound Barrier.
       1. Performance:
          1. ASTM E90: STC 35 at 3.5 inches (76 mm) thick.
          2. ASTM C423: NRC 0.70 at 3 inches (76 mm) thick.
          3. ASTM C518 - R Value: 3.7/inch.
          4. ASTM D1622 - Density: 0.75pcf.
          5. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* High expansion, open cell SPF. Use where moisture is not a concern or where structural rigidity is not required. Do not use in "flash and batt" applications. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Low Density.
       1. Performance:
          1. ASTM D1622 - Density: .75pcf.
          2. ASTM C518 - R-Value: 3.7/inch.
          3. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.
  1. ADHESIVE FOAMS

\*\* NOTE TO SPECIFIER \*\* Handi-Stick® Polystyrene Construction was formulated for compatibility with all polystyrene applications including ICFs, architectural foam shapes and foam boards. Handi-Stick Polystyrene Construction polyurethane foam adhesive will not degrade polystyrene, unlike many other solvent based adhesives. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Stick PCA.
       1. Performance:
          1. 3-minute open time.
       2. Standards and Compliance:
          1. Meets or exceeds the adhesive, tensile and sheer strength requirements of ASTM D6464: Tensile strength 29psi; shear 48psi.
          2. ASTM E84 Flame Spread 5 Smoke Developed 5 (12.5 percent).
          3. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

\*\* NOTE TO SPECIFIER \*\* Handi-Stick Subfloor® polyurethane foam adhesive allows for easy dispensing compared to racheting a caulk gun when applying subfloor. This product provides permanent adhesion to wet, dry and frozen lumber and contains no VOCs or solvents. Handi-Stick Subfloor reduces fastener use, nail pops and squeaks, and is especially easy to apply in cold temperatures. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Stick Subfloor.
       1. Performance:
          1. 20-minute open time.
       2. Standards and Compliance:
          1. ASTM D3498 - Meets or exceeds.
          2. ASTM E72 - Meets or exceeds.
          3. UL 723 Classified #R13919 Flame Spread 5 Smoke Developed 0 (8.3 percent).

\*\* NOTE TO SPECIFIER \*\* Handi-Stick® Adhesives are designed to create an extremely strong, permanent bond between various types of building materials. Handi-Stick Adhesives offer extensive cost and labor savings over traditional adhesives. Handi-Stick Adhesives can be applied with a professional dispensing unit. Handi-Stick Adhesives are available in specific formulations, along with General Use for multiple applications. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Stick General Use.
       1. Performance:
          1. 5-minute open time.
       2. Standards and Compliance:
          1. UL723 Classified #R18615 Flame Spread 5 Smoke Developed 0 (8.3 percent).

\*\* NOTE TO SPECIFIER \*\* Handi-Stick® Architectural Foam Shapes polyurethane foam adhesive is formulated for use with architectural foam shapes and mouldings of all sizes. It provides a quick, powerful bond to almost any surface and is easy to apply.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Stick Architectural Foam Shape Adhesive.
       1. Performance:
          1. 3-minute open time.
       2. Standards and Compliance:
          1. ASTM E84 Flame Spread 5 Smoke Developed 40 (12.5 percent).
          2. ASTM D6464 - Tensile strength 31psi; shear 45psi.

\*\* NOTE TO SPECIFIER \*\* Polyset CR-20 Polyurethane Foam Insulation Adhesive is specifically designed to adhere a variety of insulation boards, cover boards as well as fleece back membranes to various substrates in both new and recover applications. It can also be used to adhere insulation board to insulation board where multiple layers are required. The adhesive is applied in a bead form directly to an approved substrate. The insulation board is placed onto the adhesive. A chemical cure takes place several minutes after application, depending on temperature and weather conditions.

* + 1. Product: ICP Adhesives and Sealants, Inc. Polyset CR-20 Polyurethane Foam Insulation Adhesive.
       1. Performance:
          1. 1-10 minute open time bead application.
          2. 1-10 minute open time spatter application.
       2. Listings and Approvals:
          1. Factory Mutual (FM).
          2. Underwriters Laboratories (UL).
          3. Florida Building Code (FBC)
          4. Miami Dade County (NOA).

\*\* NOTE TO SPECIFIER \*\* 2-Component Roof Tile Adhesive Polyset® AH-160 is specifically designed to adhere a variety of concrete and clay roof tiles to various compatible substrates in both new and reroof applications. The adhesive is applied in a previously determined paddy placement location directly to a compatible underlayment surface. The roof tile is placed onto the adhesive paddy. A chemical cure takes place several minutes after application, depending on temperature and weather conditions.

* + 1. Product: ICP Adhesives and Sealants, Inc. Polyset AH-160 2-Component Roof Tile Adhesive.
       1. Performance:
          1. 1-2 minute open time.
       2. Listings and Approvals:
          1. Florida Building Code (FBC)
          2. Miami-Dade County (NOA).
          3. ICC ES ESR-1709.
          4. Texas Department of Insurance - TDI RC-22.

\*\* NOTE TO SPECIFIER \*\* Polyset RTA-1 Roof Tile Adhesive is specifically designed to adhere a variety of concrete and clay roof tiles to various compatible substrates in both new and reroof applications. The adhesive is applied in a previously determined paddy placement location directly to a compatible underlayment surface. The roof tile is placed onto the adhesive paddy prior to skinning over. A moisture cure takes place several minutes after application, depending on temperature and weather conditions. This product may be used for field tile or hip and ridge installations.

* + 1. Product: ICP Adhesives and Sealants, Inc. Polyset RTA-1 Roof Tile Adhesive.
       1. Performance:
          1. 1-5 minute open time.
       2. Listings and Approvals:
          1. Florida Building Code (FBC)
          2. Miami-Dade County (NOA).

\*\* NOTE TO SPECIFIER \*\* Handi-Flow® Pour-in-Place foams are polyurethane foams specifically designed to fill and insulate large voids and blind cavities. Handi-Flow products are dispensed using the patented Handi-Gun® Dispensing Unit for accurate and precise applications. Handi-Flow Pour-in-Place Foams are available in a variety of sizes, from disposable kits to large refillable systems. Delete if not required.

* 1. POUR-IN-PLACE FOAMS

\*\* NOTE TO SPECIFIER \*\* This product is designed as a slow curing, pour-in-place foam, providing mold filling application advantages. Best suited for OEM type applications where more environmental controls (temperature, fixturing, etc.) are available. Average tack-free time of 2-4 minutes. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Flow Cavity Fill.
       1. Standards and Compliance:
          1. ASTM C518 - 5.6/inch.

\*\* NOTE TO SPECIFIER \*\* This product is designed as a slow curing, pour-in-place foam, providing mold filling application advantages. Recommended for boat floatation, block filling, insulating live wells, bait wells, and coolers. Excellent strength and sound deadening qualities. Average tack-free time 1.5 minutes. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Flow Slow Rise.
       1. Standards and Compliance:
          1. ASTM C518: 5.9/inch.
          2. Shall meet the Coast Guard specification requirements for flotation in Title 33 Code of Federal Regulations, paragraph 183.114.
          3. Meets the requirements for DIN 4102-1 for a "B2" building material.

\*\* NOTE TO SPECIFIER \*\* Handi-Flow Channel Fill PIP is specifically designed for filling cavities,  
hollow tubing, framing, channels, or casings where a longer reaching, slower curing and expanding polyurethane foam system is required. Channel Fill is powered by High Flow Technology, an industry first polyurethane foam category, taking traditional Pour-In-Place foams and adding the ability to flow great distances through intricate voids to completely fill complex cavities. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Flow Channel Fill.
       1. Performance:
          1. ASTM C518 - Aged R-value: 7.2/inch.
       2. Standards and Compliance:
          1. ASTM E84 Testing was conducted using a system of 6 inches of Channel Fill and 3/16 inch steel channels/tubes - Flame Spread 0, Smoke Developed 85.
          2. ASTM G21 - passes, no growth.
          3. ASTM E96 - Water-Vapor Transmission: 0.49 perms/2 inches.

\*\* NOTE TO SPECIFIER \*\* Handi-Fill Wall Seal, is a pour-in-place foam used for insulating/retrofitting wall cavities with minimal or no insulation. Wall Seal is powered by High Flow Technology, an industry first polyurethane foam category, taking traditional Pour-In-Place foams and adding the ability to flow great distances through intricate voids to completely fill complex cavities. Delete if not required.

* + 1. Product: ICP Adhesives and Sealants, Inc. Handi-Fill Wall Seal.
       1. Standards and Compliance:
          1. Handi-Fill Wall Seal PIP conforms to the requirements of ASTM E84 as a "Class 1 (A)" material. Tested at 4" thickness. Flame Spread 10 Smoke Developed 450.
          2. ASTM C518 - Aged R-value: 3.4/inch.
          3. ASTM D1622 - Density: In-place 1.00pcf; free-rise 0.75pcf.
          4. UL 2818 - UL GREENGUARD GOLD for low chemical emissions.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Substrate shall be clean, dry, firm, free of loose particles and free of dust, grease and mold release agents.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install in accordance with manufacturer's instructions.
      2. Product shall be installed according to local code.
      3. Follow ambient and substrate temperature range recommendations when applying the product.
   4. PROTECTION
      1. Protect installed products until completion of project.
      2. For exterior applications, provide a coating or painting for protection from UV radiation.
      3. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION