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Guide Specification

FOAMED-IN-PLACE INSULATION

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SPEC NOTE: This guide specification is intended for use when specifying the Staycell[®] HYBRID Spray Polyurethane Foam Insulation System for projects located in the United States.

DISCLAIMER: The manufacturer has reviewed the product information contained in this guide specification. The information is organized and presented to assist the specification writer working on a construction project to select the appropriate products and to save time in writing the project Section. The specification writer is responsible for product selection as well as the use and application of this information and should contact the manufacturer to ensure that all options are available and that the associated specification information is valid and correct.

SECTION 07 21 19

FOAMED-IN-PLACE INSULATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

Staycell[®] HYBRID Spray Polyurethane Foam Insulation System consisting of:

- A. Staycell[®] 265 spray polyurethane foam insulation applied as base layer on specified substrates.
- B. Staycell ONE STEP[®] 255 spray polyurethane foam insulation applied onto the Staycell[®] 265 base layer, which provides the exposed surface.

1.02 REFERENCES

- A. ASTM C 518-04 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter
- B. ASTM D 1621-04a Standard Test Method for Compressive Properties of Rigid Cellular Plastics
- C. ASTM D 1622-03 Standard Test Method for Apparent Density of Rigid Cellular Plastics
- D. ASTM D 1623-03 Standard Test Method for Tensile and Tensile Adhesion Properties for Rigid Cellular Plastics
- E. ASTM D 6226-05 Standard Test Method for Open Cell Content of Rigid Cellular Plastics
- F. ASTM E 2178-03 Standard Test Method for Determining Air Permeance
- G. ASTM E 84-08 Standard Test Method for Surface Burning Characteristics of Building Materials
- H. UL 1715 - 97 Fire Test of Interior Finish Material
(revisions thru 2004)

1.03 SUBMITTALS

A. Informational submittals for both products

1. Manufacturer's published data sheets.
2. Shop drawings on sheet metal, accessories or other fabricated items, if required.
3. Two samples 4 inch by 4 inch of the HYBRID System.
4. Applicator certification from Preferred Solutions, Inc.
5. Manufacturer's installation instructions.
6. Field quality control procedures to be utilized by Applicator to assure proper installation of the products.
7. Material Safety Data Sheets (MSDS).
8. ASTM E-84 test reports from a testing laboratory accredited by the International Accreditation Service, Inc. showing products have a flame spread of 25 or less and smoke developed rating of 350 or less.
9. UL 1715 test report from a testing laboratory accredited by the International Accreditation Service, Inc. showing the HYBRID System complies with all acceptance criteria of the test method without thermal barriers or ignition barriers or any other fire protective surface.
10. Evidence that the products are manufactured under an approved quality control program with inspections conducted by an inspection agency accredited by the International Accreditation Service, Inc.

1.04 QUALITY ASSURANCE

Authorized Applicator of Manufacturer: Applicator shall be a designated Authorized Applicator of Preferred Solutions, Inc., Cleveland, Ohio. Such designation certified in writing by Preferred Solutions, Inc. shall be submitted by the applicator.

1.05 MATERIALS DELIVERY AND STORAGE

- A. Materials shall be delivered in the manufacturer's original, tightly sealed containers or unopened packages, all clearly labeled with the manufacturer's name, product identification, safety information, fire ratings as shown on a label issued by an accredited inspection agency and batch or lot numbers where appropriate.
- B. Containers shall be stored out of the weather, direct sun and in compliance with manufacturer's recommendations.

1.06 FIELD CONDITIONS

A. Ambient Conditions

1. Do not apply the products when substrate has surface moisture. For optimal results substrate temperature should be at least 50° F. For colder temperature applications contact PSI for more information.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Staycell[®] 265 spray polyurethane foam insulation having the following minimum properties:

1. Insulation Value (ASTM C-518): R-6.7 per inch @ 1" – 3.49"
R-6.9 per inch @ 3.5" – 12"
2. Compressive Strength (ASTM D-1621): 25 psi
3. Density (ASTM D-1622): 2.0 pcf
4. Tensile Strength (ASTM D-1623): 61 psi
5. Closed Cell Content (ASTM D-6226): 97%
6. Air Leakage (ASTM E-2178): <.005 L/s/m² @ 75Pa
7. Water Vapor Permeance (ASTM E-96): 1.40 perms @ 1 "
.70 perms @ 2"
.47 perms @ 3"
.35 perms @ 4"
8. Fire Ratings:
ASTM E-84 (tested at 4 inch thickness): Flame spread index: 25
Smoke developed index: 350
9. Manufacturer: Preferred Solutions, Inc., Cleveland, OH

B. Staycell ONE STEP[®] 255 spray polyurethane foam insulation having the following minimum properties:

1. Insulation Value (ASTM C-518): R-5.5 per inch
2. Compressive Strength (ASTM D-1621): 22 psi
3. Density (ASTM D-1622): 2.2 pcf
4. Tensile Strength (ASTM D-1623): 28 psi
5. Closed Cell Content (ASTM D-6226): 90%
6. Air Leakage (ASTM E-2178): .007L/s/m² @ 75Pa
7. Fire Ratings:
ASTM E-84 (tested at 4 inch thickness): Flame spread index: 25
Smoke developed index: 300
8. Manufacturer: Preferred Solutions, Inc., Cleveland, OH

C. Staycell[®] HYBRID Spray Polyurethane Thermal Insulation System

The specified Staycell[®] HYBRID System shall comply with the 2003, 2006 and 2009 editions of the International Building Code and International Residential Code based upon compliance with the UL 1715 fire test standard.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Inspect existing conditions to ensure they are suitable for work to begin. Do not proceed until unacceptable conditions are corrected.
- B. Ensure items such as hangers for piping and ductwork are installed before work begins.

3.02 PREPARATION

- A. All substrates shall be free from surface moisture prior to the application of the foam insulation.
- B. Loose paint and other surface materials which are easily removable shall be removed by broom brushing, vacuuming, air blowing or similar procedures.

3.03 APPLICATION

- A. Polyurethane foam insulation:
 - 1. The foam components (A) and (B) shall be applied in accordance with the manufacturer's instructions.
 - 2. The foam shall be sprayed within the manufacturer's guidelines for temperature, humidity and other atmospheric conditions.
 - 3. Base layer (Staycell[®] 265 foam insulation) shall be sprayed onto the specified substrates at an **average ____ inch thickness** where shown on the applicable drawings.
 - 4. Top layer (Staycell ONE STEP[®] 255 foam insulation) shall be sprayed onto the Staycell[®] 265 **at a minimum one-half inch (1/2") thickness for ceiling/underside of roof deck applications and a minimum one-inch (1") thickness for wall applications.**
 - 5. The full thickness of each foam product applied on any given surface shall be completed in one day.
 - 6. Any damage or defects to the foam products shall be repaired.

3.04 QUALITY ASSURANCE

- A. Daily records: The applicator shall keep daily records as to the square feet of surface sprayed each day, quantities of all materials used and thickness tests performed. One thickness test shall be conducted on every 500 square feet of covered surface. Such records shall be provided upon request.
- B. Installed product evaluation: In addition to verifying the thickness of all installed products, the following characteristics shall also be provided:
 - 1. The cellular structure shall be uniform and not be soft or spongy.
 - 2. The foam shall not have areas with hard or brittle sections or improperly proportioned materials.

3.05 SAFETY REQUIREMENTS

- A. Applicator shall comply with all provisions of MSDS Sheets for the product.
- B. Ventilation, if necessary, shall be provided to assure fresh air is brought into the area being sprayed. Such air shall be exhausted to the outside of the building by utilizing existing fans or by supplemental ventilation.
- C. Proper disposal of waste materials and containers must be done in compliance with the manufacturer's guidelines and federal, state and local regulations.

3.06 CLEAN-UP

- A. At the completion of the project, applicator shall clean up and remove from the site all material containers, waste materials and debris.

END OF SECTION