

## **CHEM LINK SOF<sup>®</sup>-CELL BACKER ROD**

### **DIVISION 7 - THERMAL AND MOISTURE PROTECTION**

#### **SECTION 07 91 00 PREFORMED JOINT SEALS**

#### **SECTION 07 91 23 BACKER RODS**

### **PART 1 – GENERAL**

#### **1.01 SUMMARY**

- A. Scope: Provide labor, material, equipment, related services, and supervision required, including, but not limited to, manufacturing, fabrication, and installation for backer rods as required for the complete performance of the work and as shown on the Drawings and as herein specified.
- B. Section Includes: The work specified in this Section includes, but shall not be limited to, non-gassing, non-exuding, non-absorbing, chemically inert, bi-cellular backer rods, designed for use with cold applied sealants.

#### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions, Division 1 - GENERAL REQUIREMENTS, and other applicable specification sections in the Project Manual apply to the work specified in this Section.

#### **1.03 REFERENCES**

- A. General: The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.
- B. ASTM (ASTM):
  1. ASTM C 717, "Terminology of Building Seals and Sealants."
  2. ASTM C 1016, "Standard Test Method for Determination of Water Absorption of Sealant Backing (Joint Filler) Material."
  3. ASTM C 1087, "Standard Test Method for Determining Compatibility of Liquid Applied Sealants with Accessories Used in Structural Glazing Systems."
  4. ASTM C 1253, "Standard Test Method for Determining the Out gassing Potential of Sealant Backing."
  5. ASTM C 1330, "Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants."
  6. ASTM D 1622, "Standard Test Method for Apparent Density of Rigid Cellular Plastics."
  7. ASTM D 1623, "Standard Test Method for Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics."

8. ASTM D 5249, "Standard Specification for Backer Material for Use with Cold- and Hot-Applied Joint Sealants in Portland-Cement Concrete and Asphalt Joints."
9. ASTM E 84, "Standard Test Method for Surface Burning Characteristics of Building Materials."
10. ASTM E 329, "Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction."

A. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD):

1. SCAQMD Rule #1168, "Adhesive and Sealant Applications," includes most recent amendments.

**1.04 SUBMITTALS**

- A. General: See Section 01 33 00 - SUBMITTAL PROCEDURES.
- B. Product Data: Submit product data showing material proposed. Submit sufficient information to determine compliance with the Drawings and Specifications.
- C. Test Reports: Submit product test reports from a qualified independent inspecting and testing agency showing compliance of backer rods with requirements, based on comprehensive testing of current product formulations within the last two years.
- D. LEED Submittals: Submittals that are required to comply with requirements for LEED certification include, but shall not be limited to, the following:
  1. Regional Materials: Provide product data for regional materials indicating location and distance from the Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Distance shall be within 500 miles (805 Km) of the Project Site. Include statement indicating cost for each regional material and, if applicable, the fraction by weight that is considered regional.
  2. Low Emitting Materials: Submit certification by the manufacturer confirming that products (i.e., adhesives, sealants, paints, coatings, etc.) meet or exceed the volatile organic compound (VOC) limits set by specific agencies or other requirements as outlined in Section 01 11 23 - LEED GREEN BUILDING RATING SYSTEM. VOC limits shall be clearly stated in the submittal.

**1.05 QUALITY ASSURANCE**

- A. Qualifications:
  1. Manufacturer Qualifications: Manufacturer shall be a firm engaged in the manufacture of backer rods of types and sizes required, and whose products have been in satisfactory use in similar service for a minimum of five years.

2. Installer Qualifications: Installer shall be a firm that shall have a minimum of five years of successful installation experience with projects utilizing backer rods similar in type and scope to that required for this Project.
  3. Inspecting and Testing Agency Qualifications: To qualify for acceptance, an independent inspecting and testing agency hired by the Contractor or manufacturer to test products shall demonstrate to the Architect's satisfaction that they are qualified according to ASTM E 329 to conduct testing indicated.
- B. Regulatory Requirements: Comply with applicable requirements of the laws, codes, ordinances, and regulations of Federal, State, and local authorities having jurisdiction. Obtain necessary approvals from such authorities.
1. Product shall meet all the requirements of the 1990 Clean Air Act.
  2. Product shall be a domestic end product as defined in the Buy American Act, Title 41 USC 10.
- C. Surface Burning Characteristics: Provide backer rods with the surface burning characteristics as indicated below, as determined by testing identical products per ASTM E 84, by Underwriters Laboratories, Inc. (UL), Intertek Testing Services (ITS), or other inspecting and testing agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable inspecting and testing agency.
1. Flame Spread: 25 or less.
  2. Smoke Developed: 65 or less.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to the Project site in supplier's or manufacturer's original wrappings and containers, labeled with supplier's or manufacturer's name, material or product brand name, and lot number, if any.
- B. Store materials in their original, undamaged packages and containers, inside a well ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

## **PART 2 – PRODUCTS**

### **2.01 MANUFACTURERS**

- A. SOF<sup>®</sup>-CELL backer rod, as supplied by Chem Link Inc, 353 E. Lyons St, Schoolcraft, MI 49087 Direct line 269-679-4440, is considered to conform to the requirements of this specification.
- B. Customer Service 800-826-1681
- C. Technical Service 800-826-1681
- D. All substitutions must be approved in writing by Architect, engineer and building owner prior to acceptance.

## 2.02 MATERIALS

### A. LEED Requirements:

1. Regional Materials: Provide a minimum of [10 percent (based on cost)] [and an additional 10 percent beyond Credit MR 5.1 (total of 20 percent, based on cost)], of building materials that are regionally extracted, processed, and manufactured.
2. Low Emitting Materials: Use adhesives, sealants, paints, coatings, etc., that comply with the specified limits for VOC content when calculated according to SCAQMD Rule #1168. See Section 01 11 23 - LEED GREEN BUILDING RATING SYSTEM for VOC content limits.

### B. Bi-Cellular Backer Rods: Provide cylindrical, flexible sealant backings composed bi-cellular material per Type B, ASTM C 1330 and ASTM C 717 for use as gasket or sealing material, for use with cold-applied sealants.

1. Benefits: Backer rod shall limit the depth of the sealant and shall prevent excessive sealant use. It shall help sealant assume optimum shape factor to prolong sealant service life and shall act as a barrier to the flow of sealant through the joint.
2. Applications: Common applications include, but shall not be limited to, expansion and contraction joints, window glazing, curtain walls, construction partitions, parking decks, bridge construction, modular home gasketing, and log home chinking.
3. Physical Properties:
  - a. Density: 1.8 lb/ft<sup>3</sup> (28 kg/m<sup>3</sup>) to 2.5 lb/ft<sup>3</sup> (40 kg/m<sup>3</sup>), average, per ASTM D 1622.
  - b. Outgassing (Number of Bubbles): Less than 1, per ASTM C 1253.
  - c. Compression Recovery: Greater than 90 percent minimum, per ASTM D 5249.
  - d. Compression Deflection: 5 psi (0.35 kgf/cm<sup>2</sup>), per ASTM D 5249.
  - e. Tensile Strength: 38 psi (2.67 kgf/cm<sup>3</sup>) minimum, per ASTM D 1623.
  - f. Water Absorption: Less than 0.03 g/cc, per ASTM C 1016 Procedure B.
  - g. Form: Round foam rod.
  - h. Temperature Limits: -45 °F (-43 °C) to 160 °F (71 °C).
4. Basis of Design: Product specified is "SOF<sup>®</sup> CELL" as supplied by Chem Link, Inc. Items specified are to establish a standard of quality for design, function, materials, and appearance. Equivalent products by listed manufacturers are acceptable. The Architect will be the sole judge of the basis of what is equivalent.

**PRODUCT IS AVAILABLE IN THE FOLLOWING FORM:**

DIMENSIONS	UNIT	LENGTH/UNIT	UNIT WEIGHT	UNIT DIMENSION
3/8 inch (10 mm)	Carton	1400 feet (427 m)	7 pounds (3.0 kg)	15 inches (381 mm) by 15 inches (381 mm) by 18 inches (457 mm)
5/8 inch (16 mm)	Carton	550 feet (168 m)	7 pounds (3.0 kg)	15 inches (381 mm) by 15 inches (381 mm) by 18 inches (457 mm)
7/8 inch (22 mm)	Carton	330 feet (101 m)	7 pounds (3.0 kg)	15 inches (381 mm) by 15 inches (381 mm) by 18 inches (457 mm)
1-1/8 inch (29 mm)	Carton	120 feet (38 m)	7 pounds (3.0 kg)	15 inches (381 mm) by 15 inches (381 mm) by 18 inches (457 mm)

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

- A. Verification of Conditions: Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Architect, of any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected. Beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

**3.02 PREPARATION**

- A. Just prior to placing the backer rod, clean joints per the sealant manufacturer's recommendations. Thoroughly remove any concrete form release agents, curing compound residue, laitance, foreign materials, etc. To ensure a good sealant bond, joints shall be clean and dry when the new sealant is installed. Air compressors used for this purpose shall be equipped with traps for removal of oil and moisture.

**3.03 INSTALLATION**

- A. Install backer rods in accordance with reviewed product data, manufacturer's written recommendations, and as indicated on the Drawings. Install backer rods at the depth recommended by the sealant manufacturer with a blunt tool. Do not puncture, over compress, or stretch backer rod during insertion. Do not use with hot applied sealants. Tests for outgassing of cold applied sealants shall be made in accordance with ASTM C 1253 Test Method C. Sealant compatibility shall be confirmed by the sealant manufacturer. Compatibility characteristics of sealants in contact with sealant backings shall be determined by ASTM C 1087 Test Method C.
  - 1. Size Selection: Proper size selection is important as it controls the depth of the sealant bead. It shall be oversized (25 percent to 50 percent) to fit tightly into the joint and function as a bond breaker to prevent back-side adhesion of the sealant.

2. Compatibility: Bi-cellular polyolefin foam is basically an inert material; and therefore, it is compatible, both physically and chemically, with virtually all known cold applied sealants, including, but not limited to, self leveling types.

**3.04 PROTECTION**

- A. Provide final protection and maintain conditions in a manner acceptable to the Installer that shall ensure that the backer rods shall be without damage at time of Substantial Completion.

**END OF SECTION**