

**M-1**

**DIVISION 7 - THERMAL AND MOISTURE PROTECTION**

**Section 07900 Joint Sealers**

**Elastomeric and non-Elastomeric sealant**

**Part 1 - General**

**1.01 Summary**

A. This specification describes the sealing of vertical joints/cracks with a one-component, gun-grade, elastomeric sealants.

B. Related Sections:

1. Section 033000 – Cast-In-Place Concrete.
2. Section 042100 – Masonry Assemblies Unit Masonry.
3. Section 079513 – Expansion Joint Cover Assemblies.
4. Section 076 00 – Flashing and Sheet Metal Flashing and Trim.
5. Section 084100 – Aluminum Entrances and Storefronts.
6. Section 088100 – Glass Glazing.
7. Section 321213 – Asphalt Paving.
8. 321313 – Concrete Paving

**1.2 SYSTEM DESCRIPTION**

A. Design Requirements:

1. Design number of joints and joint widths for maximum of plus or minus 25 percent movement.
2. Design depth of sealant to be 1/2 width of joint.
  - a. Maximum Depth: 1/2 inch (13 mm).
  - b. Minimum Depth: 1/4 inch (6 mm).
  - c. Maximum Recommended Width: 2 inches (50 mm)

B. Performance Requirements: ASTM C 920, Type S, Grade NS, Class 12.5, Use T, NT, M, A, G and O.

**1.02 Quality Assurance**

A. Manufacturer Qualifications: Company regularly engaged in manufacturing and marketing of products specified in this

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

**1.03 Delivery, Storage, and Handling**

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain or excessive heat until ready for use.

#### **1.04 Job Conditions**

- A. Environmental Conditions: Do not apply material if precipitating or if such conditions appear to be imminent. Minimum application temperature 40°F (5°C) and rising.
- B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified coating.
- C. Do not apply to joints that have frost present.

#### **1.05 Submittals**

- A. Submit two copies of manufacturer's literature, to include: Product Data Sheets.
- B. Material Safety Data Sheets (MSDS).
- C. Samples:
  - 1. Color Selection: For each color choice, manufacturer's sample bead consisting of strips of actual products showing all colors available.
  - 2. Verification: 2 sets of each type and color of joint sealant required. Install joint sealant Samples in 1/2 inch wide joints formed between two 6 inch long strips of material matching appearance of exposed surfaces adjacent to joint sealants.
  - 3. Submit laboratory tests or data validating product compliance with performance criteria specified.
  - 4. Contractor to submit list of references from 5 projects similar in scope to this Project. Include contact name and phone number of person charged with oversight of each project.

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

- C. Comply with Section 016000.
- D. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number. Provide Material Safety Data Sheets for each product.
- E. Store products in a location protected from environmental damage including but not limited to, physical damage, construction activity, precipitation, and direct sunlight.
- F. It may be helpful to condition products to approximately 60 degrees F (16 degrees C) to 70 degrees F (21 degrees C) for use.
- G. Take appropriate precautions and care as stated on Material Safety Data Sheet.

#### **1.07 Warranty**

- A. Provide a written warranty from the manufacturer against defects of materials for a period of five (5) years, beginning with date of substantial completion of the project.
- B. Warranty Exclusions: Failure resulting from excessive movement, concrete shrinkage, structural cracks or defects, faulty construction, faulty design, faulty materials (other than joint sealants), improper installation, misuse of structure, settlement, or accident, fire, or other casualty or physical damage.

## **Part 2 - Products**

### **2.01 Manufacturers**

- A. **M-1**, as manufactured 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. Polyether sealant:
  - 1. The joint sealant shall be a one-component, gun grade, non sag, polyether-base material. It shall be applicable in, vertical, and overhead joints. The sealant shall cure under the influence of atmospheric moisture to form an elastomeric joint material.
  - B. Any primers, as required, recommended by the manufacturer of the specified product, approved by the engineer and or manufacture.
  - C. Backer rod or bond breaker tape, as approved by the manufacture and engineer.
  - D. Materials shall comply to: ASTM C920, Type S, Grade NS, Class 12.5, Use T, NT, M, A, G, and O; Canadian Specification CAN/CGSB-19.13-M87, Classification MCG-2-25-A-N, No. 81026;
  - E. USDA compliant for use in meat and poultry areas

### **2.04 Colors**

- A. Sealant Colors: Selected by Architect from manufacturer's color chart.

### **2.05 Performance Criteria**

- A. Properties of the uncured polyether sealant:
  - 1. Initial Cure (Tack-Free Time): TT-S-00230C - Refer to data sheet
  - 2. Consistency: non-sag
  - 3. Color: 4 standard colors
- B. Properties of the cured polyether sealant:
  - 1. Tensile Properties (ASTM D-412) at 21 days
    - a. Tensile Stress: 300-psi min.(1.37 MPa)
    - b. Elongation at Break: Data sheet says 300%
  - 2. Shore A Hardness (ASTM D-2240) at 21 days: 50+/- 5
  - 3. Adhesion in Peel (TT-S-00230C, ASTM C 794)
  - 5. Service Range: -40°F to 170° F (-40° to 77° C)
  - 6. The sealant shall conform to Federal Specification TT-S-00230C, Type II, Class A.
  - 7. The sealant shall conform to ASTM C-920, Type S, Grade NS, Class 12.5.
  - 8. The sealant shall be non-staining.

**Note: Tests were performed under laboratory conditions using production material and ideal curing conditions.**

## **Part 3 - Execution**

### **3.01 Surface Preparation**

- A. The joint and adjacent substrate must be clean, dry, sound and free of surface contaminants. Remove all traces of the old sealant, dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means, i.e. – sandblasting, grinding, etc., as approved by the manufacture and engineer. Blow joint free of dust using compressed air line ensuring that no oil or contaminates corrupt the surface or by brushing the joint to a clean surface.

### **3.02 Application**

- A. Joints:
  - 1. Placement Procedure: Prime substrate as required based upon the recommendations of the manufacturer and engineer, when field testing indicates need, and when the joints will be subject to immersion after cure.

2. Install approved backer rod or bond breaker tape in all joints subject to thermal movement to prevent three sided adhesion and to set the depth of the sealant at a maximum of 1/2 in., measured at the center point of the joint width. Approval of the backer rod or bond breaker tape shall be made by the manufacture and engineer.

3. Joints shall be masked to prevent discoloration or application on unwanted areas, as directed by the engineer.

If masking tape is used, it shall not be removed before tooling, yet must be removed before the initial cure of the sealant. Do not apply the masking tape until just prior to the sealant application.

4. Install sealant into the prepared joints when the joint is at the mid-point of its expansion and contraction cycle. Place the nozzle of the gun, either hand, air, or electric powered, into the bottom of the joint and fill entire

joint. Keep the tip of the nozzle in the sealant; continue with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the joint.

5. Adhere to all limitations and cautions for the polyether sealant as stated in the manufacturer's printed literature.

B. Cracks:

1. For best performance sealant should be gunned into crack to a minimum of a 1/4" in depth. Place the nozzle of the gun, either hand, air or electric powered, into the bottom of the crack and fill entire crack. Keep the tip of the nozzle in the sealant. Continue with a steady flow of sealant proceeding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the crack.

2. Adhere to all limitations and cautions for the polyether sealant as stated in the manufacturer's printed literature.

### **3.03 Cleaning**

A. The uncured polyether sealant can be cleaned with isopropyl alcohol. The cured polyether sealant can be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

**End of Section**