

MICHIGAN
DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
FOR
POLYURETHANE JOINT SEALANT FOR STRUCTURES

STM:JD

1 of 2

APPR:JAB:TGH:03-27-23

FHWA:APPR:03-29-23

a. Description. This work consists of sealing construction joints on structures with polyurethane or polyurethane hybrid sealants at the locations shown on the plans, or as directed by the Engineer. Perform all work in accordance with the standard specifications and standard plans, except as modified in this special provision.

b. Materials. Furnish a solid, round, closed-cell, polyethylene foam backer rod meeting the requirements of *ASTM D5249, for Type 1*. Select a polyurethane or polyurethane hybrid sealant based on the performance requirements in Table 1 or as approved by the Engineer.

Table 1: Polyurethane or Polyurethane Hybrid Sealant Requirements

Property	Test Method	Minimum Result
Movement capability, %	<i>ASTM C719</i>	+35/-35
Tensile strength, psi	<i>ASTM D412</i>	175
Tear strength, pli	<i>ASTM D624</i>	35
Ultimate elongation at break, %	<i>ASTM D412</i>	400
Hardness, Shore A	<i>ASTM C661</i>	25
Tack-free time, hrs	<i>ASTM C679</i>	6
Adhesion in peel, pli	<i>ASTM C794</i>	20

Ensure non-sag polyurethane and polyurethane hybrids meet *ASTM C920, Type S, Grade NS, Class 35, Use NT, M, A, O*. Self-leveling polyurethane and self-leveling polyurethane hybrids are prohibited.

Furnish a general certification per the MDOT's *MQAP Manual* to the Engineer that the materials meet the requirements specified herein.

c. Construction.

1. Joint Preparation. Immediately prior to application of the polyurethane or polyurethane hybrid sealant, clean joint faces by abrasive blasting to remove all materials that may interfere with the bonding or curing of the sealant. Ensure the prepared joint faces meet the *International Concrete Repair Institute 310.2R, Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays and Concrete Repair*, CSP 3. Use a vacuum or oil-free moisture-free air blast to remove all dust and other loose material. Remove any oil or other contamination after initial cleaning. Ensure there is no visible moisture present on the surface of the concrete at the time of application. Ensure that the fiber joint filler is

secure and installed at the proper elevation relative to the joint reservoir. Place backer rod to a depth of 1 inch or in accordance with the sealant manufacturer's recommendations.

2. Joint Sealing. Furnish the Engineer with manufacturer's recommended application procedures. Do not install sealant on concrete surfaces that are less than the age, specified by the manufacturer's recommendations. Recess the surface of the polyurethane or polyurethane hybrid sealant 1/2 inch. Install polyurethane or polyurethane hybrid sealant 1/2 inch thick. Do not place sealant if weather or surface conditions are such that the material cannot be properly handled, placed, and cured within the manufacturer's requirements and specified requirements of traffic control.

d. Measurement and Payment. Payment for sealing construction joints with polyurethane or polyurethane hybrid sealants in accordance with this special provision is considered included in other items of work in the contract.