

## 10-1. \_\_ SEAL JOINT

This work shall consist of cutting grooves for seals at transverse and longitudinal weakened plane joints, routing grooves along random cracks, and placing sealing material in the grooves, as shown on the plans, as specified in these special provisions, and as directed by the Engineer.

Attention is directed to "Order of Work" of these special provisions regarding the sequence of sealing joints and installing edge drains.

Grooves for transverse and longitudinal joints shall be cut, to the dimensions shown on the plans, with concrete saws equipped with diamond blades. Each groove shall be cut in one pass of the saw.

Grooves for sealing random cracks shall be routed by any method that will produce a groove of the approximate shape and dimensions shown on the plans. The Engineer will mark random cracks that are to be routed and sealed.

Joint sealant shall conform to the requirements in ASTM Designation: D 3405 as modified in conformance with the following:

- A. Joint sealant shall be a mixture of paving asphalt and ground rubber. Ground rubber shall be vulcanized or a combination of vulcanized and devulcanized materials ground so that 100 percent will pass a 2.36-mm sieve. The mixture shall contain not less than 22 percent ground rubber, by mass. Modifiers may be used to facilitate blending.
- B. The sealant shall have a Ring and Ball softening point of 57°C minimum, when tested in conformance with the requirements in AASHTO Designation: T 53.
- C. The material shall be melted and applied to cracks and joints at temperatures below 204°C. When heated, the material shall readily penetrate grooves 6 mm wide or wider.
- D. The penetration of the material at 25°C, 150g, 5s as specified in Section 4.2 of ASTM Designation: D 3405 shall not exceed 120.
- E. The resilience recovery of the material shall be a minimum of 50 percent when tested at 25°C as specified in Section 4.5 of ASTM Designation: D 3405.

Each lot of joint sealant shipped to the project site, whether as specified herein or conforming to the requirements in ASTM Designation: D 3405, as modified herein, shall be accompanied by a Certificate of Compliance as provided in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications and shall be accompanied with storage and heating instructions and precautionary instructions for use.

Prior to placing the bond-breaker or, in the case of random cracks, sealant, the joint or routed crack, shall be cleaned by blast cleaning or by hand methods and then cleaned with high pressure air jets to remove residue and foreign materials from the groove. Joint and routed crack surfaces shall be dry at the time the sealant is applied.

A bond-breaker of a shape and material recommended by the manufacturer of the sealant, or as approved by the Engineer, shall be placed in the groove of transverse or longitudinal joints as shown on the plans.

Joint-sealant materials shall be heated and placed in conformance with the manufacturer's written instructions and the details shown on the plans. Joint-sealant materials shall not be placed when the pavement surface temperature is below 10°C.

The finished joint sealant shall be bonded to the faces of the joint groove. There shall be no separation or opening between the sealant and the faces of the joint groove. There shall be no crack, separation or other opening in the sealant.

Seal transverse joint, seal longitudinal joint, and rout and seal random cracks will be measured by the meter.

The contract prices paid per meter for seal transverse joint, seal longitudinal joint, and rout and seal random cracks shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in sealing joints and routing and sealing random cracks, including sawing grooves and routing cracks as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.