

501.03.18 Sealing Joints.

- A) Requirements for Sealing All Joints.** Seal all joints as soon as practical and before opening the pavement, base, shoulders or any section of the pavement, base or shoulders to any traffic. Configure joint sealant according to the Standard Drawings.

Do not seal any joints until the Engineer inspects and approves them for sealing. Before applying the sealer, completely clean all joints of all loose scale, laitance, oils, greases, dirt, and other foreign substances, and remove all free water and loose particles by jetting with compressed air.

- B) Uses of Sealant Types.** Use any of the following sealant types for the indicated types of joints for JPC Pavement and Shoulders (For PCC base, use hot-poured elastic):

- 1) Preformed Neoprene Seals.
 - a) transverse and longitudinal sawed joints
 - b) expansion joints
- 2) Silicone Rubber Seals.
 - a) transverse and longitudinal sawed joints
 - b) transverse and longitudinal expansion joints
 - c) longitudinal and transverse construction joints
 - d) joints between pavement and shoulders and fixed objects such as box inlets, manholes, retaining walls, and concrete barriers
- 3) Self-Leveling Silicone Rubber Sealant.
 - a) resealing random cracks in JPC pavement, base, and shoulders
 - b) sealing joints between JPC pavement, base, and shoulders and asphalt pavement or shoulders
 - c) longitudinal and transverse construction joints
 - d) joints between pavement and shoulders and fixed objects such as box inlets, manholes, retaining walls, and concrete barriers; and sealing joints cut in asphalt overlays of JPC pavement, base, and shoulders for control of reflective cracking
- 4) Hot-Poured Elastic.

- a) longitudinal and transverse construction joints
- b) joints between pavement, base, and shoulders and fixed objects such as box inlets, manholes, retaining walls, and concrete barriers
- c) for applications where the Department allows self-leveling silicone joint sealant

C) Preformed Neoprene Seals. Seal and repair damaged seals according to Subsection 609.03.04 for preformed neoprene seals. Remove and replace all seals that are damaged, twisted, curled, improperly positioned, or stretched more than 5 percent.

Do not seal transverse joints in the pavement until all adjacent sawed longitudinal joints have been sealed. Install each transverse seal in one piece, without field or factory splicing, for the full length of the transverse joints.

Install continuous longitudinal joint seals for lengths no less than 50 feet except where intersected by transverse joint seals. Where the longitudinal joints intersect the transverse joints, either sever the longitudinal seal after installation or insert it deeper at junctions with transverse joints. Thoroughly coat all intersections between longitudinal and transverse seals with an additional application of Department approved lubricant adhesive so that the openings in the longitudinal seal are completely closed. Install continuous longitudinal seals through transverse construction joints sealed with hot-poured sealer.

When the Department requires partial width construction, the Department will allow cutting the transverse seal at the longitudinal construction joint, and installing it in part width. Thoroughly coat all intersections between the transverse and longitudinal seal with an additional application of approved lubricant adhesive so that the opening in the transverse seals is completely closed and sealed.

Trim all transverse seals flush with the edge of the pavement, base, or shoulder after installation.

D) Silicone Rubber Sealant. Seal joints according to the Contract and the written recommendations of the manufacturer. Place seals when the ambient temperature and the pavement temperature is 40 °F or higher.

Completely clean and dry joints, and ensure that they are frost free. Immediately after sawing, flush with a jet of water and use other tools as necessary to remove all cuttings. After flushing, blow the joint out with compressed air. When the surfaces are thoroughly dry and within 24 hours prior to sealing the joint, clean the joints by sandblasting followed by blowing out with compressed air. Sandblast in 2 passes, one for each joint face, with the nozzle held at an angle to the joint face and within one to 2 inches of the pavement. Direct the air blast following the sandblast in one direction to prevent recontamination of the joint. If cleaned joints are not sealed within 24 hours after sandblasting, reclean them by lightly sandblasting and blowing out again using compressed air.

Supply compressed air free of water, oil, or any other injurious substances.

Install foam back-up rods according to the Standard Drawings. When sealing 2 intersecting joints, first place a continuous foam back-up rod through the intersection. Either place this rod low at the intersection, and place the intersecting rod over it at the specified depth; or cut the intersecting rod, and place it against the first rod at the intersection.

When necessary, use additional air blasting to completely remove all moisture, dust, or debris that has accumulated in the joint after placing the back-up rod. Ensure that the joint is completely clean, dry, and frost-free immediately prior to placement of the sealant.

Install silicone rubber seals with an applicator having a built-in grooving tool. Install the seals by pushing, not pulling, the sealant ahead to form a uniform head. This pushing of the sealant will ensure that the joint is filled from the top of the backer rod to at least 3/8 inch below the pavement surface. Tool

the sealant so that it is forced against the joint faces and recessed below the pavement surface. Use the same tool for both application and grooving. Demonstrate satisfactory results during production and the Engineer may allow separate tools for application and grooving.

Seal joints as soon as practical after sawing and before allowing traffic, except construction traffic, on the pavement. Do not allow any traffic over the sealed joints for the period of time recommended by the manufacturer for proper adhesion or curing or for a longer period if the seals have not completely adhered or cured.

For each working day, the Engineer will remove 5 sample plugs at locations determined by the Engineer. The Engineer will test each plug for conformity to the geometry specified for the joint seals. If the test plugs do not conform, the Engineer will remove additional plugs and will identify the location of the joint from which each plug was removed. The Engineer will test each plug to determine if any joints are deficient. When joints are determined to be deficient, remove and rework those joints. After deficient joints have been reworked, the Engineer will remove sample plugs at locations determined by the Engineer. The Engineer will repeat the sampling and testing. Repair holes from sample plugs no later than the next working day.

- E) **Self-Leveling Silicone Rubber Sealant.** Install the self-leveling rubber sealant according to the manufacturer's instructions.
- F) **Resealing Joints.** Saw cut, and clean all joints to minimum widths or greater according to the specifications for each joint type. The minimum width for transverse joints before resealing is 3/4 inch and the minimum width for longitudinal joints is 1/2 inch. If the saw cut of an existing joint is not of sufficient width to clean the joint faces, resaw the joint to a width that will expose clean vertical faces of the joint. Perform all additional resawing of an existing joint to clean the faces of the joint and install seals appropriate for the resawed width. Clean joints before resealing according to the requirements for new seals. Install additional silicone rubber sealant following additional resawing of joints to clean faces, or install wider preformed neoprene seals following additional resawing of an existing joint to clean faces. Remove all debris and old joint sealer resulting from the sawing operation from the pavement before opening to public traffic.

When necessary, saw the pavement to the required depth at the pavement edge, extend the saw cut into existing asphalt shoulders. When edge drain construction is included in the Contract and edge drains are to be placed in the asphalt shoulder adjacent to the JPC pavement being saw cut and resealed, perform edge drain construction after sawing and sealing of the pavement so that sealing of cuts in the asphalt shoulder will not be necessary. When edge drain construction is not included in the Contract or an alternate construction sequence is specified, seal all saw cuts in the asphalt shoulders that will remain in the finished work using hot-poured elastic joint sealer or self-leveling silicone rubber sealant. Perform sealing of cuts in the asphalt shoulder as soon as practical after completing pavement sealing in the adjacent lane.

- G) **Temporary Seals.** When using temporary seals, firmly embed them in the joint. Place the material 1/4 inch below the pavement surface. Provide a material that is sufficiently strong and durable to resist intrusion of incompressible materials, and to allow complete removal after its usefulness has ended.

~~501.03.19 Surface Tolerances and Testing Surface.~~

- A) **~~Edge Slump.~~** ~~Prevent and correct the slumping of the pavement, base, or shoulder edges. Ensure that edge slump does not exceed 1/8 inch when the Plans indicate the edge of the pavement, base, or shoulder being constructed is to be abutted by subsequently constructed pavement, base, or shoulders, either by this Contract or future contracts. Ensure that edge slump does not exceed 1/4 inch~~