



STANDARD SPECIFICATIONS PREFORMED NEOPRENE SEAL

I. GENERAL

- A. This specification covers Preformed Neoprene (Polychloroprene) joint seals of the open-cell compression type, intended for use in sealing joints in concrete pavements. It also covers the lubricant-adhesive used when installing the seal.
- B. Acceptable manufacturers of the Preformed Neoprene joint seal and the appropriate model of seal shall be:

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Models: "E" & "V" series

II. COMPOSITION AND MANUFACTURE

- A. The Preformed Neoprene compression seal shall be manufactured from a vulcanized elastomeric compound using polymerized chloroprene as the only base polymer. Neoprene shall make up at least 50% of the compound used in the manufacture of the seal.

III. SIZE AND SHAPE

- A. The size and dimensional tolerances of the seal shall be as shown in the drawings or as specified. Unless detailed in the drawings, the shape of the joint sealer shall include six individual cells for seals greater than .562 inches and than 1.50 inches in nominal width and be approved by the engineer prior to delivery to the job site.
- B. The material as delivered to the job site shall be accompanied by the manufacturer's certification stating it meets all requirements of ASTM D-2628. The owner will verify the certification by sampling and testing the material prior to delivery at the job site.

IV. IDENTIFICATION AND MARKING

- A. The seals shall be marked with the name or a suitable trademark of the manufacturer, lot number and catalog number at intervals of less than 4 feet. Also, on the top surface of the seal, a mark shall be placed at every one-foot interval.

V. PHYSICAL PROPERTIES

- A. The material shall conform to the physical properties prescribed below (ASTM D2628).

<u>Property</u>	<u>REQUIREMENTS</u>	<u>ASTM METHOD</u>
Tensile Strength, min psi	2000	D412
Elongation at break, min %	250	D412
Hardness, Type A Durometer	55 ± 5	D2240 a*
Oven Aging, 70 hrs. @ 212°F		D573
Tensile strength, loss, max., %	20 max.	
Elongation, loss, max., %	20 max.	
Hardness, Type A, points change	0 to +10	
Oil Swell, ASTM Oil IRM 903		D471
70 hrs @ 212°F		
Weight change, max., %	45 max.	
Ozone Resistance		D1149 b*
20% strain, 300 pphm, 70 hrs. @ 104°F	no cracks	
Low Temperature Recovery		D2628-81 sctn 9.2
72 hrs. @ 14°F, under		
50% deflection, min. %	88	
Low Temperature Recovery		D2628-81 sctn 9.2
22 hrs. @ -20°F, under		
50% deflection, min. %	83	
High Temperature Recovery		D2628-81 sctn 9.2
70 hrs. @ 212°F, under		
50% deflection, min. %	85	

*a The use of joint seal as the specimen source requires that more plies than specified in the procedure be used.

*b Test in accordance with procedure A of D 518.

Neoprene seal. This saw-cut will be made with a water-cooled diamond blade saw capable of holding a tolerance of $\pm 1/16$ ". The saw-cut shall be inspected for proper width, depth and the face of the joint must be at 90 degrees to the surface of the pavement. If spalling occurs due to the sawing operation, it shall be repaired with an approved elastomeric concrete prior to seal installation.

- B. Once the secondary saw-cut is made, the joint shall be immediately pressure washed with clean water and blown out with compressed air. Sandblasting will only be necessary if called for in the specification of the project.

XI. INSTALLATION

- A. The joint is now ready for installation of the Preformed Neoprene seal. The installation machine should be capable of installing the seal at the specified depth without cutting, nicking or twisting the seal. The installation machine will be self propelled and also must be capable of installing the seal with 4% or less stretch. Hand installation is not acceptable as the primary installation method.
- B. The lubricant-adhesive meeting ASTM D 2835 is used mainly to facilitate the installation of the Preformed Neoprene seal. The lubricant-adhesive must contain a minimum of 22% solids, be uniform, contain no lumps, have the correct viscosity and have a drying time between eight and twenty minutes. The containers of lubricant-adhesive should be labeled with the manufacturer's name, catalog number, lot number and manufacture date. Also, an MSDS must accompany all shipments for the safety of the user. The lubricant-adhesive will begin to thicken at 32°F. When sealing operations occur where the air temperature is below 32°F, the lubricant-adhesive must be stored in a heated warehouse until immediately prior to use.
- C. The proper installation sequence for preformed neoprene compression seals is to install the longitudinal seal first. After allowing the glue to dry (approximately 20 minutes), the longitudinal seal is cut with a sharp instrument or saw blade at the middle of the intersection of the transverse joint. Initially, only make one single cut. The material should retract, leaving enough room for the transverse sealant. The transverse joint seal is then installed through the cut in the longitudinal seal to form a tight intersection. The transverse seal should be installed in one continuous piece. The transverse seal will exert outward force on the end cut of the longitudinal seal to form a tight intersection.

XII. INSPECTION

- A. Stretching the seal during installation is the major cause of premature failure of the Preformed Neoprene seal. Inspecting for stretch should be done very early in the sealing process. The inspection involves loosely laying a piece of Preformed Neoprene seal the entire width of the pavement and cutting it at the

exact width of the pavement. The seal is then installed in the joint. Any excess amount of seal remaining at the end of the joint is due to stretch. The length of this excess is measured and a stretch percentage is calculated by dividing the excess length by the original length. Stretch greater than 4% is unacceptable. The depth of the seal shall be .1875 inches (\pm .0625) below the surface of the pavement or, in the case of a chamfered joint, it should be .125 inches (\pm .0625) below the bottom of the chamfer. The seal shall not be twisted or have any deformity that interferes with the seal making complete contact with the joint face.

XIII. MANUFACTURER'S TECHNICAL REPRESENTATIVE

A manufacturer's technical representative of the Preformed Neoprene compression seal must be on site for the first two days during its installation.