



SECTION 1053

CONCRETE SEALER

1053.1 Scope. This specification covers concrete sealers for the protection of concrete against damage from de-icing chemicals.

1053.2 Manufacturer and Brand Name Approval. Prior to approval and use of concrete sealers, the manufacturer shall submit to Construction and Materials a certified test report from an approved testing laboratory showing specific test results conforming to the requirements of these specifications. The certified test report shall also contain the manufacturer’s name, product brand name, lot number and date of manufacture. Upon approval from the engineer of this certified report, further test will not be required, except as hereinafter noted, of that manufacturer for that brand name. Once approved, the manufacturer and brand name will be added to a qualified products list (QPL). New certified test results shall be submitted any time the manufacturing process or the sealer formulation is changed, and may be required by the engineer when sampling and testing of material offered for use indicates nonconformance to any of the requirement herein specified. ASTM and AASHTO specifications, when referenced, control only the physical and chemical properties of the material.

1053.3 Penetrating Concrete Sealer.

1053.3.1 The sealer shall be a alkyltrialkoxysilane, with low oligomer and polymer compound content. The chemical composition shall meet the following requirements:

Property	Specification
Purity	95% minimum monomer by weight
Solvent	Less than 5% by weight
Residue	Less than 2% by weight
Density	Per the manufacturer’s recommendation
Flash Point	ASTM D93: greater than 125 degrees F
Dry Time	ASTM D1640 Sec 7.5.1: One hour or less

1053.3.1.1 The ASTM D1640 test shall be performed on a concrete surface. This concrete shall be a mix design called for in [Sec 1053.3.2](#). The application rate shall be the same rate specified in [Sec 703](#).

1053.3.2 The sealer shall meet the following performance criteria based on a single application at the application rate specified in [Sec 703](#). MoDOT reserves the right to verify any qualification tests at their expense on any field application. Test specimens shall be produced using either the MoDOT Class B-2 concrete in accordance with Sec 501 or the concrete mix specified by the test being performed.

Test	Test Method	Duration	Max Absorption / CI
Water Immersion	ASTM C642	48 hours	0.5 percent by weight (mass)
Water Immersion	ASTM C642	50 days	1.5 percent by weight (mass)
Salt Water Ponding (based on non-abraded specimen)	AASHTO T259	90 days	80% min reduction in CI absorption & 0.50 lbs/cu yd CI at a depth of 1/2” - 1” max

1053.3.3 The sealer shall not permanently stain, discolor or darken the concrete. Application of the sealer shall not alter the surface texture or form a coating on the concrete surfaces.

1053.3.4 The sealer shall not leave residue on glass, painted metal or automobiles.

1053.3.5 The sealer shall not reduce the bond of pavement markings or reduce the skid resistance of the surface being sealed. Any sealer determined to have these adverse effects will be removed from the pre-qualified list.

1053.3.6 The sealer shall be delivered to the project in unopened containers with the manufacturer's label identifying the product and with the seal(s) intact. Each container shall be clearly marked by the manufacturer with the following information:

- (a) Manufacturer's name and address.
- (b) Product name.
- (c) Date of manufacture and expiration date.
- (d) Lot identification.
- (e) Storage requirements.