QPL 23: CONCRETE WATERPROOFING

SECTION A: NON-PENETRATING TYPE SEALERS (NON-TRAFFIC BEARING)

GENERAL

This evaluation procedure outlines the Department's approval process for the use of non-penetrating type sealers used in waterproofing non-traffic bearing concrete.

SPECIFICATIONS

- AASHTO T259 – Standard Method of Test for Resistance of Concrete to Chloride Ion Penetration
- AASHTO T260 – Standard Method of Test for Sampling and Testing for Chloride Ion in Concrete and Concrete Raw Materials

PROCEDURES

A completed Product Evaluation Form, safety data sheet (if applicable), product data information, a sample of the product being tested, and manufacturer's recommended mixing instructions must be submitted to the Division of Materials and Tests.

A six-inch by twelve-inch hardened portland cement concrete cylinder will be used as a test specimen. The six-inch by twelve-inch concrete cylinder will be sawed in half at an angle of ninety degrees from the twelve-inch axis. The concrete surface shall be abraded using sandblasting techniques. Next place a dam around the top edge of the concrete cylinder. The submitted product will be applied to the concrete surface as recommended by the manufacturer and allowed to cure. The concrete specimen will be covered with a 3% solution of NaCl to a depth of one-half inch and maintained for ninety days in accordance with AASHTO T 259.

After ninety days of exposure the specimen shall be allowed to dry and then the surface shall be wire brushed until all salt crystal buildup is completely removed. A test sample will be taken at the one-half to one-inch depth from each end of the test cylinder. The untreated end of the test cylinder will be the control. The chloride content of each sample shall be determined in accordance with the procedure in AASHTO T 260. The amount of NaCl absorbed into the test cylinder will be determined by subtracting the control from the sample taken from the area treated with the submitted product and covered with a 3% solution of NaCl.

The maximum amount of chloride ion penetration allowed is 1.0 pound per cubic yard of concrete.

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SECTION B: PENETRATING TYPE SEALERS

GENERAL

This evaluation procedure outlines the Department's approval process for the use of penetrating type sealers for waterproofing concrete.

SPECIFICATIONS

- AASHTO T259 – Standard Method of Test for Resistance of Concrete to Chloride Ion Penetration
- AASHTO T260 – Standard Method of Test for Sampling and Testing for Chloride Ion in Concrete and Concrete Raw Materials

PROCEDURES

A completed Product Evaluation Form, MSDS sheets, if applicable, product data information, a sample of the product being tested, and manufacturer's recommended mixing instructions must be submitted to the Division of Materials and Tests.

A six-inch by twelve-inch hardened Portland cement concrete cylinder will be used as a test specimen. The six-inch by twelve-inch concrete cylinder will be sawed in half at an angle of ninety degrees from the twelve-inch axis. The concrete surface shall be abraded using sandblasting techniques. Next place a dam around the top edge of the concrete cylinder. The submitted product will be applied to the concrete surface as recommended by the manufacturer and allowed to cure. The concrete specimen will be covered with a 3% solution of NaCl to a depth of one-half inch and maintained for ninety days in accordance with AASHTO T 259.

After ninety days of exposure the specimen shall be allowed to dry and then the surface shall be wire brushed until all salt crystal buildup is completely removed. A test sample will be taken at the one-half to one-inch depth from each end of the test cylinder. The untreated end of the test cylinder will be the control. The chloride content of each sample shall be determined in accordance with the procedure in AASHTO T 260. The amount of NaCl absorbed into the test cylinder will be determined by subtracting the control from the sample taken from the area treated with the submitted product and covered with a 3% solution of NaCl.

The maximum amount of chloride ion penetration allowed is 1.0 pound per cubic yard of concrete.

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ITEM NO.	PAY ITEM	PAY UNIT
502-08.05	WATERPROOFING CNC PVMT JOINTS (12"WIDTH)	L.F.
502-08.06	WATERPROOFING CNC PVMT JOINTS (20"WIDTH)	L.F.
605-01	WATERPROOFING, CLASS I	S.Y.
605-01.01	WATERPROOFING (TYPE A) (AREA)	S.Y.
605-01.02	WATERPROOFING (TYPE C) (AREA)	S.Y.
605-01.05	WATERPROOFING (TYPE E) (AREA)	S.Y.
605-01.75	WATERPROOFING BRIDGE DECK	S.Y.
605-02	WATERPROOFING, CLASS II	S.Y.
605-03	WATERPROOFING RAILROAD BRIDGE DECK	S.Y.
605-04	WATERPROOFING CNSTR JOINTS (R/R STR.)	S.Y.
605-07	WATERPROOFING	S.Y.

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SECTION C: NON-PENETRATING COAL TAR EPOXY SEALERS

NO LONGER ACTIVE

QPL 23: CONCRETE WATERPROOFING

SECTION D: EPOXY-URETHANE THIN OVERLAY SYSTEMS FOR BRIDGE DECKS (1/2 INCH THICKNESS OR LESS)

GENERAL

This evaluation procedure outlines the Department's approval process for polymer-modified cementitious, epoxy urethane and low modulus epoxy materials applied as thin overlays on bridge decks used to seal the decks and improve skid resistance.

SPECIFICATIONS

- AASHTO MP35 – Standard Specification for Thin Overlay Treatments Using a Binder Resin System and Aggregate for Concrete Surfaces
- AASHTO Designation PP xxx-19 – Standard Practice for the Application of Thin Overlay Treatments Using a Binder Resin System and Aggregates for Concrete Surfaces
- AASHTO Product Evaluation & Audit Solutions (formerly NTPEP) Review – AASHTO Product Evaluation & Audit Solutions - Home

PROCEDURES

A completed Product Evaluation Form, safety data sheets (if applicable), product data information and a sample of the product being tested must be submitted to the Division of Materials and Tests.

For Epoxy-Urethane Thin Overlay Systems:

- Use deck pretreatment/primer per manufacturer's recommendation.
- Apply two lifts of an epoxy-urethane copolymer and aggregate.
- Apply overlay mechanically using metered equipment; hand mixing is not permitted.

AGGREGATE GRADATIONS

Flintrock Products Grade 65-8 Blend	
Sieve Size	Percent Passing
No. 4	100
No. 6	79-83
No. 8	30-40
No. 10	15-25
No. 16	0-3
No. 20	0-2
No. 30	0-1

Washington Rock Quarries, Inc. 9820 Blend	
Sieve Size	Percent Passing
No. 4	100
No. 6	60-85
No. 8	15-25
No. 10	--
No. 16	0-5
No. 20	--
No. 30	0-0.2

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ITEM NO.	PAY ITEM	PAY UNIT
406-04.01	POLYMER MODIFIED EPOXY PAVEMENT OVERLAY	S.Y.
617-04.01	TYPE 1 THIN EPOXY OVERLAY (EPOXY-URETHANE)	S.Y.
617-04.02	TYPE 2 THIN EPOXY OVERLAY (LOW-MOD EPOXY)	S.Y.
617-04.03	POLYMER MODIFIED EPOXY OVERLAY SYSTEM	S.Y.
617-04.04	TYPE 2 EPOXY BINDER (LOW-MOD EPOXY)	GAL.
617-04.05	AGGREGATE FOR EPOXY OVERLAY	LB.
617-04.06	BRIDGE DECK PREP FOR EPOXY OVERLAY	S.Y.
619-01.01	POLYMER MODIFIED CONC (VARIABLE DEPTH)	C.Y.
629-01	EPOXY POLYMER CONCRETE OVERLAY	S.Y.
629-01.01	EPOXY POLYMER CONC OVERLAY (VARBLE DPTH)	C.Y.