

ITEM SPECIAL - STRUCTURE, MISC.: SEALING CONCRETE WEARING SURFACE CONSTRUCTION JOINTS WITH HMWM RESIN:

A. DESCRIPTION

THIS ITEM SHALL CONSIST OF THE LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE APPLICATION OF SEALER TO NEW CONCRETE WEARING SURFACE CONSTRUCTION JOINTS IN ACCORDANCE WITH THESE SPECIFICATIONS, IN REASONABLY CLOSE CONFORMITY WITH THE PLANS AND THE MANUFACTURER'S RECOMMENDATIONS AND AS DIRECTED BY THE ENGINEER.

THIS WORK ITEM SHALL NOT BE PERFORMED DURING THE PERIOD BEGINNING NOVEMBER 1ST AND ENDING MARCH 1ST.

B. MATERIALS

THE MATERIAL USED FOR TREATING THE CONSTRUCTION JOINTS SHALL BE A LOW VISCOSITY, NON-FUMING, HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) RESIN CONFORMING TO THE FOLLOWING:

1. VISCOSITY SHALL BE LESS THAN 25 CPS (BROOKFIELD VISCOMETER, MODEL RVT WITH UL ADAPTER OR MODEL LVF, #1 SPINDLE AND UL ADAPTER AT 25 DEGREES CELSIUS (77 DEGREES FAHRENHEIT) ASTM D1824)
2. DENSITY SHALL BE GREATER THAN 1.0 KG/L (8.4 LBS/GAL) AT 25 DEGREES CELSIUS (77 DEGREES FAHRENHEIT) ASTM D2849)
3. FLASH POINT SHALL BE GREATER THAN 93 DEGREES CELSIUS (200 DEGREES FAHRENHEIT) (PENSKEY-MARTENS CC) ASTM D 93)
4. VAPOR PRESSURE SHALL BE LESS THAN 1.0 MM HG AT 25 DEGREES CELSIUS (77 DEGREES FAHRENHEIT) (ASTM D323)
5. TG (DSL) SHALL BE GREATER THAN 58 DEGREES CELSIUS (135 DEGREES FAHRENHEIT) (ASTM D 3418)
6. SHELF LIFE SHALL BE 1 YEAR MINIMUM AT MANUFACTURER'S RECOMMENDED ENVIRONMENTAL CONSIDERATIONS.
7. GEL TIME SHALL BE GREATER THAN 40 MINUTES - 100 G MASS (ASTM D2471) (THIN FILM)
8. PERCENT SOLIDS SHALL BE GREATER THAN 90% BY WEIGHT
9. BOND STRENGTH SHALL BE GREATER THAN 1500 PSI (ASTM 882)

THE RESIN MAY BE OBTAINED FROM ONE OF THE FOLLOWING SUPPLIERS:

3M COMPANY 3M CENTER ST. PAUL, MN 55144-1000 PHONE: 1-612-733-7119	SIKA CORPORATION 201 POLITO AVENUE LYNDHURST, NJ 07071 PHONE: 1-201-933-8800
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ADHESIVE ENGINEERING COMPANY CONCRETE 2075 1411 INDUSTRIAL ROAD SAN CARLOS, CA 94070 PHONE: 1-415-592-7900	TRANSCO INDUSTRIES, INC. 20 JONES STREET NEW ROCHELLE, NY 10801 PHONE: 1-914-636-1000
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A COMPATIBLE PROMOTOR/INITIATOR SYSTEM CAPABLE OF PROVIDING THE SAME PHYSICAL QUALITIES OF THE HARDENED RESIN AS IF PROMOTED/INITIATED WITH 2% COBALT NAPHTHANATE (6%) AND 2% CUMENE HYDROPEROXIDE SHALL ALSO BE PROVIDED. MATERIALS SHALL BE STORED AT 18-27 DEGREES CELSIUS (65-80 DEGREES FAHRENHEIT). THE SYSTEM SHALL PROVIDE A RESIN SET TIME OF NOT LESS THAN 40 MINUTES TO NOT MORE THAN 1-1/2 HOURS AT THE TIME AND TEMPERATURE OF APPLICATION. THE GEL TIME SHALL BE ADJUSTED TO COMPENSATE FOR THE CHANGE IN TEMPERATURE THROUGHOUT THE DAY. THE TEMPERATURE OF THE SURFACES TO BE TREATED MAY RANGE FROM 10 DEGREES CELSIUS (50 DEGREES FAHRENHEIT) TO 50 DEGREES CELSIUS (120 DEGREES FAHRENHEIT). THE CONTRACTOR SHALL ARRANGE TO HAVE A TECHNICAL REPRESENTATIVE ON SITE TO PROVIDE MIXING PROPORTIONS, EQUIPMENT SUITABILITY, AND SAFETY ADVICE TO THE CONTRACTOR AND ENGINEER. ANY CONFLICT BETWEEN THESE PROVISIONS AND REPRESENTATIVE'S ADVICE SHALL BE RESOLVED AT THE JOB SITE. THE TECHNICAL REPRESENTATIVE SHALL REMAIN AT THE JOB SITE UNTIL SUCH TIME AS HE AND THE ENGINEER AGREE THAT THE CONTRACTOR IS QUALIFIED IN ALL ASPECTS OF THE APPLICATION OF THE SEALER.

THE PROMOTOR AND INITIATOR, IF SUPPLIED SEPARATE FROM THE RESIN, SHALL NOT CONTACT EACH OTHER DIRECTLY. CONTAINERS OF PROMOTERS OR INITIATORS SHALL NOT BE STORED TOGETHER IN A MANNER THAT WILL ALLOW LEAKAGE OR SPILLAGE FROM ONE TO CONTACT THE CONTAINERS OR MATERIAL OF EACH OTHER.

BEFORE USING THE MATERIAL THE CONTRACTOR SHALL SUBMIT TO ODOT'S BUREAU OF TESTING COPIES OF THE MANUFACTURER'S CERTIFIED TEST DATA SHOWING THAT THE MATERIAL COMPLIES WITH THE QUALITATIVE AND QUANTITATIVE REQUIREMENTS OF THE SPECIFICATION. THE TEST DATA SHALL BE DEVELOPED BY AN INDEPENDENT APPROVED TESTING LABORATORY, AND SHALL INCLUDE THE BRAND NAME OF THE MATERIAL, NAME OF THE MANUFACTURER, NUMBER OF THE LOT TESTED AND DATE OF MANUFACTURE. WHEN THE MATERIAL HAS BEEN APPROVED BY THE DIRECTOR, FURTHER TESTING BY THE MANUFACTURER WILL NOT BE REQUIRED UNLESS THE FORMULATION OF MANUFACTURING PROCESS HAS BEEN CHANGED, IN WHICH CASE NEW CERTIFIED TEST RESULTS WILL BE REQUIRED. THE MANUFACTURER SHALL CERTIFY THAT THE FORMULATION IS THE SAME AS THAT FOR WHICH DATA HAS BEEN SUBMITTED. THE STATE RESERVES THE RIGHT TO SAMPLE AND TEST DELIVERED LOTS FOR COMPLIANCE.

C. APPLICATION

APPLICATION OF THE CONSTRUCTION JOINT SEALER MATERIAL SHALL BE IN STRICT ACCORDANCE WITH THE SUPPLIER'S CURRENT PUBLISHED INSTRUCTIONS AND/OR SPECIFIC INSTRUCTIONS OF THE MANUFACTURER'S TECHNICAL REPRESENTATIVE AND AS FOLLOWS. THE CONSTRUCTION JOINT AREA TO BE TREATED SHALL REMAIN DRY FOR A MINIMUM OF 8 HOURS AND ABOVE 10 DEGREES CELSIUS (50 DEGREES FAHRENHEIT) PRIOR TO APPLICATION. CONSTRUCTION JOINTS SHALL BE DIRECTLY SEALED WITH HMWM RESIN APPLIED WITH PLASTIC SQUEEZE BOTTLES, CAULKING OR OTHER EQUIPMENT CAPABLE OF DELIVERING A NARROW RESIN STREAM AND APPROVED BY THE ENGINEER. ADDITIONAL APPLICATION OF MATERIAL TO THE CONSTRUCTION JOINT AREA CAN BE ANTICIPATED IF THE INITIAL APPLICATION DISSIPATES FULLY INTO THE CONSTRUCTION JOINT. IN THESE AREAS, A SECOND COAT WILL BE REQUIRED AFTER THE FIRST COAT HAS STARTED TO CURE.

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PREVENT ANY RESIN FROM FLOWING INTO LANES OPEN TO TRAFFIC.

CLEANING AND FLUSHING OF EQUIPMENT, TOOLS, ETC. SHALL BE DONE WITH AN APPROPRIATE SOLVENT, AS APPROVED BY THE ENGINEER. IN SUCH A MANNER TO MINIMIZE PERSONAL AND ENVIRONMENTAL HAZARDS. WORKMEN SHOULD BE ADVISED THE RESIN WILL SOFTEN GUM RUBBER SOLES, AND A FACE-MASK SHOULD BE USED TO PROTECT FROM ACCIDENTAL SPLASHES. CLOTHING AND LEATHER SATURATED WITH RESIN WILL HARDEN AND BECOME USELESS.

A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER OR SUPPLIER MUST BE PRESENT ON SITE PRIOR TO STARTING APPLICATION.

E. RESTRICTIONS

TRAFFIC AND EQUIPMENT SHALL NOT BE PERMITTED ON THE SEALED CONSTRUCTION JOINTS UNTIL THE HMWM IS TACK FREE AND A MINIMUM OF 6 HOURS HAVE ELAPSED SINCE APPLICATION. THE RESIN SHALL BE PROTECTED FROM MOISTURE FOR NOT LESS THAN 4 HOURS AFTER PLACEMENT. BARRELS ARE NOT CONSIDERED EQUIPMENT.

F. METHOD OF MEASUREMENT

SEALING CONCRETE CONSTRUCTION JOINTS WITH HMWM RESIN SHALL BE MEASURED AS THE ACTUAL LENGTH IN LINEAR FOOT OF CONSTRUCTION JOINT SEALED.

G. BASIS OF PAYMENT

PAYMENT SHALL BE INCLUDED WITH ITEM 848-MICRO SILICA CONCRETE OVERLAY USING HYDRODEMOLITION (1 1/4 INCH THICK).