

ITEM 601.20 01 M - SURFACE TREATMENT FOR PAVEMENTS Type 2, Traffic Grade

DESCRIPTION

Install a coarse surface treatment at the locations noted in the plans and in the color and texture as specified in the contract documents.

MATERIALS

The binder/aggregate system used must be evaluated by the Department 45 days prior to use. Submit to the Department product data and MSDS sheets on the proposed system and samples of the system displaying the colors and textures specified in the contract plans. Aggregate samples shall be submitted to the Materials Bureau for approval. Provide additional quality assurance samples of aggregate and binder components during installation, for testing at a minimum rate of 1 sample per 100 square meters, or as directed by the Engineer and submit for testing.

The surface treatment must meet the following requirements:

Binder:

- Composed of a two component epoxy or other polymer binder system.
- Resist deterioration when exposed to sunlight, gasoline, oil, salt, water or adverse weather conditions.
- Shelf life of 1 year after manufacture.
- Be compatible with and provide a firm bond to the surface it is being applied to (asphalt or concrete).
- Be compatible with and provide a firm bond to the aggregates being applied to the surface.
- Not contain 0.1% or more of any chemical listed by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or regulated by the US Occupational Safety and Health Administration (OSHA) as a carcinogen
- Comply with the volatile organic compound (VOC) requirements for traffic marking coatings as set forth in the NYS Department of Environmental Conservation's Regulation, 6NYCRR, Part 205, "Architectural Surface Coatings".
- The Manufacturer shall certify that the binder meets the following physical requirements:

EPOXY BINDER REQUIREMENTS		
Property	Requirement	Test Method
Ultimate Tensile Strength	14 Mpa min.	ASTM D638
Compressive Strength	11 Mpa min.	ASTM D695
Peak Exothermic Temperature	65°C min.	ASTM D2471
Water Absorption	Less than 0.25%	ASTM D570
Shore Hardness	70 min.	ASTM D2240
Bleed Test	Little trace	Swab test visual 7 days @ RT
Cure Rate	3.5 hours max.	Thin Film @ 25°C

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Aggregates:

- Traffic Grade aggregates must meet Section 401-2.02 B. Coarse Aggregate Type F2 Conditions.
- Be clearly labeled and in a dry and clean condition upon delivery to the job site.
- Be maintained and stored in a dry and clean condition prior to use

CONSTRUCTION DETAILS

Follow all exposure, respiratory and personal protective equipment controls, handling and safety precautions and spill and disposal procedures as identified by materials safety data sheets (MSDS), labels and other manufacturer's recommendations for the products used. Provide the Engineer copies of all applicable MSDS sheets and safety literature.

Prepare surface and apply material according to manufacturer's recommendations and this specification. Use a manufacturer recommended primer if required.

Weather Limitations. Do not apply binder material on a wet surface, when the ambient and/or surface temperature is below 10°C or above 35°C, or when anticipated weather conditions would prevent the proper construction of the surface treatment as determined by the manufacturer.

Surface Preparation. A manufacturer's representative must be on site to provide technical assistance during surface preparation, material placement and during any necessary remedial work.

Clean existing surfaces by use of mechanical sweepers, high pressure air or other methods approved by the Engineer prior to use. Blastcleaning, shotblasting or use of mechanical abrading equipment may be required to clean highly contaminated surfaces. Receiving surfaces must be clean, dry and free of all dust, oil, debris and any other material that might interfere with the bond between the epoxy binder material and existing surfaces. Surfaces may need to be washed with a mild detergent, rinsed and dried using a hot compressed air lance. Remove any existing pavement markings as deemed necessary by the manufacturer. Adequate cleaning of all surfaces will be determined by the Engineer and the manufacturer's representative.

Apply masking as necessary at the perimeter of the area to be treated. Utilities, drainage structures, curb and any other structure within and adjacent to the treatment location shall be protected against the application of the surface treatment materials. Cover and protect all existing joints, pavement markings and utilities prior to placement. Pavement joints must be maintained and protected. Damaged and/or contaminated joints shall be restored to an acceptable working condition to the satisfaction of the Engineer.

Clean and fill all cracks in the placement area prior to treatment.

Installation. Place the surface treatment in accordance with manufacturer's recommended methods at the thicknesses and details as shown in the contract documents. Mix the binder components (A & B) at the proportions specified by the binder manufacturer using a method which produces an evenly mixed, homogenous product. Mixing may be done using a low speed high torque drill fitted with a helical stirrer or with an automated system.

A preliminary layer of epoxy may be required to properly fill in open pavement surfaces.

Evenly spread the binder with serrated edge squeegees or with an automated system.

The mixed components may be machine or hand applied onto the cleaned surface at the coverage rate specified by the manufacturer.

Use an automated binder mixing and spreading system for single placement areas greater than 500 Square meters.

Uniformly distribute the binder over the section to be treated and within the temperature range specified. Proceed in such a manner that will not allow the binder material to chill, set up, dry, or otherwise impair retention of the aggregate. Care must be taken when applying binder to sloped surfaces, uniform thickness must be maintained over the entire placement area.

Machine applied distributing equipment shall include accurate measuring devices and/or calibrated containers and thermometers for measuring the binder temperature prior to placement.

Immediately apply the appropriate aggregate at the rate recommended by the manufacturer to achieve the required density and texture. No exposed "wet spots" of binder shall be visible once the aggregate is placed.

Protect all utilities, drainage structures, curb and any other structure within/ adjacent to the treatment location, against the application of the surface treatment materials. Any damage shall be repaired to the satisfaction of the Engineer.

Curing. Allow the treatment to cure in accordance with manufacturer recommendations, approximately 3 hours at an ambient temperature of 20°C, remove the excess aggregate by hand or suction sweeping before opening to traffic. Additional sweeping may be necessary after the system fully cures.

Acceptance Evaluation.

Within 90 days after construction of the surface treatment, or prior to contract acceptance, whichever comes first, the Department will evaluate that the aggregate coverage is complete and there is no exposed binder visible. Areas containing exposed binder will be repaired according to manufacturer's recommendations at no additional cost to the State.

METHOD OF MEASUREMENT

This work shall be measured as the number of square meters of surface treatment material satisfactorily installed as shown in the contract documents, or as directed by the Engineer.

BASIS OF PAYMENT

The unit price bid per square meter shall include the cost of all labor, materials and equipment necessary to complete the work.

Payment will be made under:

Item No.	Item	Pay Unit
601.20 01	Surface Treatment for Pavements Type 2, Traffic Grade	Square Meter