

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION 846**

**TREATING CONCRETE BRIDGE DECKS WITH HMWM RESIN
September 9, 1997**

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846.01 DESCRIPTION. This work shall consist of preparing and treating the concrete wearing surfaces of bridge deck with a penetrating sealer in accordance with these specifications, in reasonably close conformity with the plans and the manufacturer's recommendation and as directed by the Engineer.

846.02 MATERIAL. The material used for treating the concrete shall meet Supplemental Specification 954, High Molecular Weight Methacrylate (HMWM) Resin.

846.03 LIMITATIONS. This work item shall not be performed during the period beginning November 1st and ending March 31st.

846.04 SURFACE PREPARATION. Roadway dirt and debris shall first be removed from the area of the deck to be treated. Surfaces to which the sealer is to be applied shall be swept, sandblasted then manual or power broom swept and blown with compressed air so that they shall be dry and free of dust and dirt. High pressure compressed air shall be used to blow all loose material from visible cracks. The cleaning equipment shall be fitted with suitable traps, filters, drip pans, driers and other devices to prevent oil and other foreign material from being deposited on the surface. Traffic shall not be allowed on the clean surface prior to application of the sealer. Existing pavement markings shall be removed according to Section 641.10 of the Specifications. All traces of asphalt or petroleum products and concrete curing seals shall be removed by the abrasive blasting prior to air sweeping.

846.05 INSTALLATION. A compatible promoter/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 °C (65-80°F). The system shall provide a resin gel time of not less than 40 minutes to not more than 1½ 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 °C (50°F) to 49°C (120 °F). 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 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 promoter and initiator, if supplied separate from the resin, shall not contact each other directly. Containers of promoter or initiators shall not be stored together in a manner that will allow leakage or spillage from one to contact the containers or materials of the other.

Machine application of the resin may be performed by using a two-part resin system utilizing a promoted resin for one part and an initiated resin for the other part. This two-part resin system may be combined at a spray bar through positive displacement atomization of the resin. Compressed air shall not be used to produce the spray.

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. Workman 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.

The surface to be treated shall be visibly dry and its temperature between 10 °C (120°F) prior to resin application. The resin may not be applied within 24 hours after a rain or when rain is forecast within 12 hours or when the ambient air temperature is below 10 °C (50 °F). The deck shall be pre-marked to control mixed material usage and to provide a rate of application of approximately 2.45m²/l (100 square feet per gallon). The exact rate shall be determined by the Engineer prior to commencing full-scale deck treatment operations.

Before using the material the Contractor shall submit to the Director copies of the manufacturer certified test data showing that material complies with the qualitative and quantitative requirements of this specification. The test data shall be developed by an independent approved testing laboratory, and shall include the brand name of the material, name of 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.