

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**STRUCTURE REPAIR
WITH LATEX MODIFIED CONCRETE**

C&T:JFS

1 of 2

C&T:APPR:LMR:RDT:12-18-01

a. Description. This work consists of furnishing and placing latex modified concrete to repair the prepared portion of bridge substructure and/or superstructure.

b. Materials. The materials will meet the requirements specified in the designated section of the Standard Specifications and as specified herein:

Portland Cement, Type 1	901
Fine Aggregate, 2NS	902
Coarse Aggregate, 26A	902
Latex Admixture	903
Admixtures	903
Water	911

Repair Concrete Mix Requirements.-(lb/cyd)

Portland Cement, Type I	658
Mix Water, Net	168
Latex Admixture	140
Fine Aggregate, Dry	1348
Coarse Aggregate, Dry	1458

Concrete air-entrainment and slump will be as follows:

Entrained Air	4.5 ± 1.5 percent
Slump	1 - 6 inches

In addition to the requirements of Section 902 of the Standard Specifications, the 26 A coarse aggregate will be 100 percent crushed material. The 26 A aggregate will have a maximum absorption of 2.50 percent according to ASTM C127.

c. Construction Details.

Equipment.- The Contractor will supply latex modified concrete that has been prepared in a continuous mixer (mobile mixer).

Equipment for producing concrete by continuous mixing will conform to ASTM C 685. The Contractor will be required to demonstrate that the equipment is properly calibrated for yield and proportions by certification or by field tests. Use of this equipment will be permitted provided that a satisfactory product is obtained as determined by the Engineer.

The Contractor must supply hand held vibrating equipment capable of consolidating the repair concrete.

d. Preparation, Placement, and Cure of the Repair Concrete. Preparation of the bridge substructure and/or bridge superstructure repair areas will be according to Subsection 712.03.F and 712.03.O of the Standard Specifications except as modified below. Mixing, placing, finishing, and curing concrete patches will be according to Subsection 712.03.O of the Standard Specifications, except as modified below.

No more than 48 hours will elapse from time of air blast cleaning of substrate to placement of repair concrete. The substrate will be clean and free of dust, laitance, and other loose material.

One hour prior to placing the deck patch, the prepared deck area will be pre-wetted with a uniform spray application of water. For patches on bridge decks, the repair area will be primed with a grout or slurry. With a stiff bristle brush, broom the grout or slurry into the repair surface immediately prior to placing the patching mixture. Water collecting in depressions will be blown out with clean, oil free, compressed air. Place the patching mixture into the prepared area, vibrate and finish the concrete with a wood float. After finishing, the patched surface will be textured to give a surface which matches the deck surface adjacent to the patch.

For patches on surfaces other than decks, the patch concrete will be placed and vibrated within forms in uniform layers.

Immediately after placement of the repair concrete apply a layer of wet burlap to the exposed concrete surface. This burlap will be soaked in water for a minimum of 12 hours prior to its use. Place plastic sheeting securely over the burlap to protect the top surfaces from evaporation. For a minimum of the first 48 hours, the concrete will be kept continuously damp by the curing system. Concrete forms and wet burlap will serve to wet cure the concrete and will remain in place for at least 48 hours after placement of the Latex Modified Concrete. After 48 hours of cure, the plastic sheeting, the wet burlap, and concrete forms will be removed, and the repair concrete will be allowed to air cure for another 48 hours for a total of 96 hours of cure.

e. Temperature Limitations. Refer to the Standard Specifications for temperature limitations.

f. Strength Requirements. Strength requirements will be as specified in Table 701-1 of the Standard Specification for Grade D concrete.

g. Measurement and Payment. This section covers measurement and payment for the substructure and/or superstructure repair.

Contract Item (Pay Item)	Pay Unit
Patching Concrete, LM	Cubic Yard

Payment for the **Patching Concrete, LM** includes furnishing, placing, consolidating, finishing, and curing (96 hour) the repair concrete.

The **Patching Concrete, LM** material will be measured and paid for by the theoretical yield of the design mix and documented by the ticket printout. Deductions will be made for material wasted

C&T:JFS
or rejected.

3 of 3

12-18-01