

SECTION 03922

DELAMINATION REPAIR

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Repair delaminated concrete areas.

1.2 PAYMENT PROCEDURES

- A. This item is included in other items of work.

1.3 RELATED SECTIONS

- A. Section 03055: Portland Cement Concrete.
- B. Section 03310: Structural Concrete.

1.4 REFERENCES

- A. AASHTO M 235: Epoxy Resin Adhesives.

1.5 ACCEPTANCE

- A. Rebuild the areas to original shape, $\pm 1/8$ inch.
- B. Remove and repair if the patching fails to bond. Department does not allow additional compensation for continual repair.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Repair Concrete:
 - 1. Portland Cement Concrete: Class AA(AE). Refer to Section 03055, Part 2.

2. Cement: Type II. Refer to Section 03055, Part 2.
 3. Aggregate: 3/4 inch maximum.
- B. Patching Concrete:
1. Use an approved patching concrete product from the Accepted Products Listing available at <http://www.dot.utah.gov/res>.
 2. Use only products for which vertical application is recommended by the manufacturer.
- C. Substrate Coating: Use a bonding agent or primer recommended by the particular patching concrete manufacturer.
- D. Epoxy Resin Adhesive: Type II. AASHTO M 235.
1. Use a class rating consistent with the application temperature.
 2. Choose from the Accepted Products Listing available at <http://www.dot.utah.gov/res>.
- E. Surface Sealing Material (Non-Penetrating Type): Choose an approved concrete epoxy sealer product from the Accepted Products Listing available at <http://www.dot.utah.gov/res>.

2.2 MIXER

- A. Use an approved type of small mixer to batch out the repair concrete when specifically approved by the Engineer.

PART 3 EXECUTION

3.1 PREPARATION

- A. Locate the repair areas: Sound the items requiring this work and mark the limits of delaminated areas for repair work in the presence of the Engineer.
- B. Remove concrete:
1. Remove all loose materials by dry sweeping.
 2. Clean by blowing with compressed air at 90 psi.
 3. Make ½ inch deep saw cuts in the sound concrete surrounding the damaged areas.
 4. Remove all damaged and shattered concrete.

- C. Cleaning:
 - 1. Remove all loose materials by dry sweeping.
 - 2. Clean by blowing with compressed air at 90 psi.
 - 3. Sandblast clean all exposed reinforcing steel and concrete surfaces before placing new concrete.

3.2 INSTALLATION

- A. Form Work
 - 1. Use forms and braces to place new concrete to the original dimensions.
 - 2. Vibration is required in the forms when the area between forms and existing concrete surface will allow use of vibrators.
- B. Use one type of repair concrete.
- C. Placing concrete when thickness to be placed is less than or equal to 3 inches:
 - 1. Use patching concrete.
 - 2. Coat the cleaned concrete using the manufacturer's recommended primer.
 - 3. Place patching concrete in layers not exceeding the manufacturer's recommended application thickness per layer.
 - 4. Apply the surface sealer recommended by the manufacturer.
 - 5. Consult the manufacturer's recommendations for finishing.
- D. Placing concrete when thickness to be placed is greater than 3 inches:
 - 1. Apply an epoxy-resin adhesive to the cleaned concrete surface of the repair area before placing the new concrete.
 - 2. Place the concrete and allow to cure following the requirements of Section 03310, articles, "Concrete Surface Finishing Classifications," "Concrete Surface Finishing," and "Concrete Surface Finishing Procedures."
 - 3. After the concrete has properly cured, sandblast the finished concrete surfaces and coat with a non-penetrating type epoxy sealer. Follow the manufacturer's procedure.
- E. Finished surfaces: Provide the look of one color.

END OF SECTION