

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SUPPLEMENTAL SPECIFICATION

Section 451—Patching Portland Cement Concrete Pavement (Spall Repair)

Delete Subsection 451.3.05 and substitute the following:

451.3.05 Construction

A. Concrete Patching

Patch concrete one lane at a time, safely and rapidly to minimize inconvenience to the traveling public.

1. Accomplish the work with other operations in progress within an area if possible.
1. Complete the work before the grinding operation begins, if grinding is specified.
2. Remove and replace completed concrete patches that contain cracks, shrinkage, compression failures, or are damaged by construction or traffic before Final Acceptance at no additional cost to the Department.

B. Placing Patching Material

Use Repair Method 1 unless the State Materials Research Engineer gives written approval to use Repair Method 2. Use Repair Method 1 when the average daily temperature is 50 °F (10 °C) or above. Use of Repair Method 2, if approved, is limited to the manufacturer's written recommendations.

For the following repair methods, begin the placement when the surface within the repair area is dry and thoroughly free of contaminants.

Ensure that the finished surface including joints meets a surface tolerance of 1/8 in (3 mm) per 10 ft (3 m).

Use approved measures as necessary to keep pavement surfaces adjacent to this operation free of excess grout and other materials. Unless otherwise specified, complete the patching operations and open the lanes to traffic before sunset each day.

1. Repair Method 1: Twenty-four Hour Accelerated Strength Concrete

Use this method as follows:

- a. Completely coat the concrete surface areas within the repair area with a film of Type II epoxy approximately 10 to 20 mils (0.25 to 0.50 mm) thick.

- a. Mix the concrete on site in a portable mixer. Obtain approval for the mix design and mixing method from the laboratory. The material must meet a slump range of 1.0 in. (25mm) to 3.0 in. (75mm).
- b. Deposit the concrete in the repair area while the epoxy is still tacky. Vibrate it to form a dense, homogeneous mass of concrete that completely fills the patch area.
- c. Screed the concrete to the proper grade and do not disturb it until the water sheen disappears from the surface.
- d. Cover the concrete with wet burlap or membrane curing compound. Allow the curing to continue for at least three hours. The Engineer may require longer curing to ensure sufficient concrete strength development before opening to traffic.

2. Repair Method 2: Rapid Setting Patching Material for Portland Cement Concrete Pavement (Type I, II, IV, and V)

- a. In addition to the requirements outlined in [Subsection 451.3.03.A, "Removing and Preparing the Repair Area,"](#) prepare the surfaces in the repair areas according to the manufacturer's written recommendations.
- b. Perform the patching material handling, mixing, placing, consolidating, screeding, and curing according to the manufacturer's written instructions as approved by the laboratory.
- c. Continue curing for at least one hour and until opening the section to traffic.

C. Special Requirements

The following special requirements apply to this work:

1. If repairing adjacent to an unstable shoulder, place a form the full depth of the repair area to maintain a true, straight shoulder joint and to prevent the patching material from intruding onto the shoulder area.
2. After curing the patching material, remove the form and repair the shoulder at no cost to the Department.
3. During sandblasting, protect traffic in the adjacent lanes.
4. After the sandblasting operations:
 - d. Thoroughly clean the area to be repaired with compressed air.
 - e. Remove sand from the sandblasting operation from the roadway and shoulders.
5. Do not "over-cut" the pavement beyond marked areas whenever possible.
6. Remove saw slurry and other contaminants from the over-cutting.
7. Repair the over-cuts by filling full-depth with an approved low-viscosity epoxy compound using a Type II epoxy adhesive specified in [Section 886](#). Make these repairs as soon as possible, but not after the joint is resealed.
8. Re-establish original transverse and longitudinal joints by sawing and sealing the joints with silicone that meets the requirements of [Subsection 833.2.06](#), the Plan details, and [Section 461](#).

Re-establish the joints within 60 days after placing the patch. Ensure that re-established joints are at least 3/8 in (10 mm) wide.

