

10-1. __ REPAIR SPALLED JOINTS

This work shall consist of removing unsound or damaged concrete from spalled areas shown on the plans and filling the area with a fast-setting patching concrete in conformance with these special provisions.

The outline of each area, as marked by the Engineer, shall be cut with a diamond bladed saw to a minimum depth of 37.5 mm. Unsound and damaged concrete between the saw cut and the joint shall be removed by methods that will not damage the concrete that is to remain in place. The area shall be blast cleaned before placing the patch.

A bond-breaker, 4.75 mm to 6 mm thick, consisting of either corrugated cardboard with a 0.15-mm polyethylene covering or expanded polystyrene material, shall be placed full depth along the joint.

Fast-setting patching concrete shall be one of the following:

- A. Equal parts of pea gravel and fine aggregate mixed with Type II portland cement and calcium chloride. The mix shall contain not less than 500 kg of cement and 15 kg \pm 0.5-kg of calcium chloride per cubic meter and water to produce a penetration of not more than 37.5 mm as determined by California Test 533, or
- B. a premixed magnesium phosphate concrete with up to 13.5 kg of pea gravel per 22.5 kg of premixed concrete or
- C. a premixed modified high-alumina cement patching compound with up to an equal amount of pea gravel.

If portland cement concrete is used, an epoxy adhesive conforming to the provisions in Section 95-2.03, "Epoxy Resin Adhesive for Bonding New Concrete to Old Concrete," of the Standard Specifications, Type II, shall be applied to the surface of the area to be patched. The area to be patched shall be dry when the epoxy is placed. Portland cement concrete patch material shall not be placed if the ambient temperature is below 10°C. Portland cement concrete patch shall be cured for a minimum of 4 hours, before opening to public traffic, using a curing compound in conformance with the provisions in Section 90-7.01B, "Curing Compound Method," of the Standard Specifications.

Magnesium phosphate concrete shall be placed on a dry surface. The concrete shall air cure with no curing medium applied. The repaired area shall be protected from public traffic for at least one hour after the concrete sets.

High alumina cement patching compound may be placed on a dry or damp surface. Curing, if any, shall be in conformance with the manufacturer's instructions. The repaired area shall be protected from public traffic for at least one hour after the cement sets.

Repairing spalled joints will be measured by the square meter of the actual areas marked by the Engineer.

The contract price paid per square meter for repair spalled joints shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in saw-cutting the outline of the patch areas, removing unsound concrete, blast cleaning the area, placing bond breakers, applying epoxy resin adhesive, placing, finishing and curing patching concrete, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.