

SECTION 03700
CONCRETE RESTORATION

(Joint Sealing)

PART 1: GENERAL

1.01 Scope

a) Under this section the contractor shall furnish, install and inject permeable grout tubes where required - to repair (water-proof) vertical or horizontal joints in concrete structures.

1.02 Work Included

- a) Clean concrete surface
- b) Chisel out surface of joint in V-shape
- c) Installation of permeable grout tubes
- d) Cover grout tubes with hydraulic cement
- e) Injection of permeable grout tubes with sealing materials

1.03 Product Data

Submit manufacturers' instructions on placement of grout tubes and data on sealing materials.

1.04 Delivery, Storage & Handling

Materials shall be delivered in unopened, original packaging.

PART 2: PRODUCTS

2.01 Permeable Grout Tubes

Shall be composed of a 1.5mm reinforcing spiral, 35 micron inner fiber membrane and an outer protective synthetic membrane. The tube shall be completely permeable for the injected sealing materials and impermeable for cement particles. The tubes shall be equal to INJECTO as distributed by De Neef Construction Chemicals (US) Inc.

All materials shall be delivered to the site in undamaged, unopened packages bearing the manufacturers' original labels.

2.02 The Sealing Materials

a) General

The sealing materials shall be a polyurethane grout with accelerator system. All materials shall be delivered to the site in undamaged, unopened containers bearing the manufacturers' original labels.

b) Polyurethane Grout & Accelerator

The polyurethane grout shall have the ability to react with water and will expand up to three (3) times in volume.

The accelerator shall be able to control the reaction time from one minute (1 min.) to one hour (1 hr.).

After reaction, the polyurethane grout shall form a flexible, dense closed cell polyurethane foam.

The sealing material shall be Hydro-Active Flex LV or Hydro Active Injecto Grout of De Neef Construction Chemicals (US), Inc.

c) Mixing & Handling

Mixing and handling of the chemical grout and the accelerator, which are not toxic and non hazardous under normal conditions, shall be in accordance with the recommendations of the manufacturer and all applicable safety codes and shall be performed in such a manner as to minimize hazard to personnel. It is the responsibility of the contractor to provide appropriate protective measures to insure that chemicals or foam produced by said chemicals are under the control of the contractor at all times.

Plastic or metal mixing tanks shall be used. Tanks of concrete or wood should not be used.

Review M.S.D.S. prior to opening sealed pails or cans.

d) Pumps

Hand operated, air driven or electrical positive displacement pumps can be used. Pressure of 150 to 250 psi is adequate.

2.03 Hydraulic Cement

The hydraulic cement must be from the fast setting type and has to bond to the concrete surface to hold hydrostatic pressure of 75 psi when dry.

The material used as surface seal shall have adequate strength and adhesion to confine the sealing materials in the crack until the injected material has cured.

PART 3: EXECUTION

Injection of sealant through the grout tubes is required in all joints where any seepage occurs.

3.01 Preparation

-Chisel out the joint in a V-shape about one (1) inch width and one (1) inch deep.

-Clean V-joint and concrete surface of dirt, laitance, corrosion or other contamination prior to installation of the grout tubes to insure direct contact of tube with concrete surface.

3.02 Installation of Permeable Grout Tube

Grout tube shall be installed on face of V-shaped joint over the total length of the joint. The two plastic ends of the grout tube shall protrude out of two ends of the joint.

Hydraulic cement shall be installed on top of grout tubes and cover the total length and width of the joint, so no sealant will run out of surface of the joint when injected into the tube.

3.03 Injection of Sealing Material

After hydraulic cement has totally cured and can withhold a hydrostatic pressure of 75 psi, the grout tubes are injected with the sealing material (around 15 psi pressure).

Keep injecting material until it flows out of the other end of the grout tube. Crimp end of the grout tube and continue injecting sealing material until the pressure rises to 45 psi. Stop the injection and crimp injection end of grout tube.

Patch injection ports with cement.

End of Section