



GENERAL GROUT INJECTION SPECIFICATION

1.0 GENERAL REQUIREMENTS

1.1 SCOPE

- a) Furnish all labor, materials, tools and equipment, and perform all operations necessary for water fix with injection grouting work.
- b) Operation of drilling test and grout holes and the injection of grouting shall proceed as indicated in the sequence of work.
- c) Injection of grout is for filling of voids and for the repair of water leaking cracks. The contractor will provide the temporary lighting required for the inspection.
- d) Holes will be drilled as required and grout injected at cracks. A grout will be injected under such pressure so as not to damage the existing structure.

1.2 QUALITY ASSURANCE

- a) Components shall be installed in accordance with manufacturers' specifications and as indicated on the Contract Drawings.
- b) The work of this section shall be performed by a firm with a minimum of three (3) years experience installing this type of materials and be authorized by the manufacturer.

2.0 MATERIALS

2.1 CHEMICAL GROUT

1.GENERAL

The sealing materials shall be a polyurethane grout and accelerator system marketed under the names of Hydro-Active[®]Flex LV, Hydro Active Flex SLV with accelerator Hydro-Active[®]Flex Cat supplied by De Neef[®] Construction Chemicals, Inc. or approved equal. All materials shall be delivered to the site in undamaged, unopened containers bearing the manufacturer's original labels. Grouting shall be performed in accordance with manufacturers' recommendations. Grouts shall be non-flammable and non-toxic.



2. CHEMICAL GROUT

The grouting compound shall be a hydrophobic polymer of the isocyanate type which is applied to a defective joint by use of a packer or injection port.

When the grout is mixed with about 0.5% to 10% of accelerator, the mixture will react when it comes in contact with moisture, will expand 10 to 15 times its original volume and cure to a polyurethane foam.

3.ACCELERATOR

The accelerator shall be based on tertiary amines, and be able to control the reaction time from one (1) minute to thirty (30) minutes depending on the amount of accelerator and the temperature of the grout.

3.0 CONSTRUCTION METHODS

3.1 DRILLING HOLES

The Contractor shall, where required by inspection or ordered, drill holes in the existing structures for grout work.

3.2 CHEMICAL GROUT

a) STORAGE

Immediately upon receipt at the site of the work, all chemical grouting materials shall be stored in a secured, dry, weather-tight structure. All basic chemical grout shall be furnished in containers acceptable for use in the work. A sufficient quantity of basic chemical grout and other components shall be stored at or near the site of the work to insure that grouting operations will not be delayed by shortages.

b) MIXING AND HANDLING

Mixing and handling of the chemical grout and the accelerator, 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 control of the contractor at all times. Plastic or metal mixing tanks shall be used. Tanks of concrete or wood should not be used.



C) PUMPS

Hand operated, air driven or electrical positive displacement pumps can be used. One to five gallons per minute delivery is normally satisfactory. Pumps must be flushed with washing agent for at least two minutes before and after the grouting operation.

3.3 PROCEDURES

Remove loose, disintegrating and porous concrete at leaking cracks. Drill hole near crack intersecting leaking crack inside wall or roof. Insert 1/2 inch diameter packer with 1/8 inch diameter opening into the hole. Cover crack with quick setting cement, letting water come out through packer. In case water does not come through packer, drill another hole near crack so that water comes through packer in the new hole. Inject chemical grout under sufficient pressure to fill the crack and seat the leak. For dry cracks, first inject water through packer, then inject chemical grout.

3.4 SAFETY PRECAUTIONS

To prevent any over-exposure to the hazardous chemicals used for chemical grout the following precautions shall be observed in strict compliance.

- a) Each employee who works with the products of the chemical grout must wear chemical goggles, face shields, NBR gloves (Edmont or equal), foul weather gear and boots.
- b) A pressurized source of water, such as a garden type sprayer, must be provided at the work site, the use of which should be restricted only for first aid in the event the chemicals should contact an employees' skin.
- c) A portable eye wash unit must also be provided near the work site for immediate use in an emergency.

End of Section

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