CHEMICAL GROUTING

Guide Specification

PART 1 - GENERAL

1.01 SCOPE OF WORK
This section governs all work, materials and testing required for the chemical grouting of concrete defects. Concrete structures with active leaks shall be repaired as indicated in the Plans and Specifications.

1.02 DESCRIPTION
The Contractor shall be responsible for furnishing all labor, materials, equipment, and testing required for the completion of chemical grouting of Concrete Structures defects in Accordance with the Contract Documents.

1.03 MANUFACTURER'S RECOMMENDATIONS
All Materials, additives, mix ratios, and procedures needed for the grouting process shall be in accordance with manufacturer's recommendations. Manufacture must provide material data sheets and M.S.D.S sheets.

1.04 TANKS AND STRUCTURES
Structures to be grouted are concrete construction.

PART 2 - PRODUCTS
All products are to from the same Manufacturer

2.01 GROUTING MATERIALS
Chemical grout shall be a Polyurethane based material designed for use in a wet environment. Material must be capable of with standing movement cased by thermal cycle changes and or settling of the structure.

Grouting Materials: BY Parson Environmental Products, Inc.
Polyurethane Chemical Grout
HYDRO GROUT
MULTI GROUT
PERMA-SEAL

Injection Accessories
OAKUM ROPE
INJECTION PORTS
PARSON QUICK PLUG
PARSON RPM
The following properties shall be exhibited by the grout.

1. Documented service of satisfactory performance in similar usage.
2. Controllable reaction times and shrinkage through the use additives supplied by the manufacturer. The minimum set time shall be established by so that adequate grout travel is achieved.
3. Resistance to chemicals; to most organic solvents, mild acids and alkali.
4. The chemical shall be essentially non-toxic in a cured form.
5. The material shall be able to withstand freeze/thaw and moving load conditions.

2.02 ADDITIVES
Additives may be utilized for catalyzing the reaction, lowering the freezing temperature of the chemical, and minimizing dehydration of the materials.

2.03 MATERIAL IDENTIFICATION
The Contractor shall completely identify the types of grout, mortar, and sealant used and provide case histories of successful use or provide proper documentation on the choice of grouting materials based on chemical and physical properties, ease of application, and expected performance, to the satisfaction of the Engineer.

2.04 MIXING AND HANDLING
Mixing and handling of chemical grout, which may be toxic under certain conditions shall be in accordance with the recommendations of the manufacturer and in such a manner to minimize hazard to personnel. It is the responsibility of the Contractor to provide appropriate protective measures to ensure that chemicals or gels are handled by authorized personnel in the proper manner. All equipment shall be subjected to the approval of the Engineer. Only personnel authorized by the Manufacturer and thoroughly familiar with the handling of the grout material and additives shall perform the grouting operations.

PART 3 - EXECUTION

3.01 GENERAL
Polyurethane grouting shall not be started until any structural repairs are complete if needed.

3.02 PRELIMINARY REPAIRS
A. The Contractor shall seal all voids and cracks larger than approximately one-half (1/2) inch in Width. All cracked or deteriorated material shall be removed from the area to be patched and replace with a waterproof quick setting mortar such as PARSON QUICK PLUG, in accordance with manufacturer's specifications.
B. The Contractor shall perform the necessary assessments prior to starting the job.

3.03 TEMPERATURE
Normal grouting operations shall be performed in accordance with manufacturers recommendations.
3.04 GROUTING MATERIAL USAGE

Grouting of concrete structure a manhole may include, wall, pipe seals, expansion joints, wall to flattop joint, and/or bench/trough. The Engineer will direct areas of the structure designated to be grouted. If entire structure is scheduled for grouting, it shall include wall, pipe seals, floors, and bench/trough. Pipe seal grouting shall include all pipe seals in the specified areas.

3.05 DRILLING AND INJECTION

A. Injection holes shall be drilled through the structure at locations as per industry standards

B. Grout shall be injected with the proper pump and pressures as with suitable ports and packers. Injection pressure shall not cause damage to the manhole structure or surrounding surface. Grout shall be injected through the lowest holes first until rejection or grout is visible at the next port or on the surface. This procedure shall be repeated until the Structure is sealed.

C. Grout travel shall be verified by observation of grout to defects or adjacent injection holes. Provide additional injection holes, if necessary to ensure grout travel.

D. Injection holes shall be cleaned with a drill and patched with a waterproof quick setting mortar such as PARSON QUICK PLUG or PARSON RPM.