



**Corrosion
Engineering™**

AN ERGONARMOR COMPANY

TECHNICAL INFORMATION

CES-338

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CORROSION ENGINEERING SPECIFICATIONS FOR INSTALLATION

PRESSURE GROUTING BETWEEN STEEL SHELL AND BRICK LINING OF STRONG SULFURIC ACID TOWERS

1. GENERAL

- 1.1 This is a procedure which has been used for pressure grouting, using a potassium silicate grout, of voids between brick linings and the outer shells of strong sulfuric acid towers, gas inlets, and tanks. This procedure should only be undertaken using the components noted below, as the stoichiometric ratio of the acid hardener must be matched to the baume of the specific silicate solution, to insure a mortar set at such fluid consistencies.

2. PROCEDURE

- 2.1 Drill ½" diameter holes in the steel and tap and thread ½" threaded nipples into the openings. These holes should be located on approximately 2' centers.
- 2.2 Attach a gate valve plus a "T" connection.
- 2.3 Attach a pressure gauge on one side of the "T" connection.
- 2.4 Attach a Moyno (peristaltic) type grout pump to the other side of the "T" connection.
- 2.5 Blow any dirt out of the holes, using an air lance attached to the "T" connection.
- 2.6 Inspect the inside of the tower, inlet, or tank to ensure any open gaps in the brickwork are filled, i.e., used wood wedges or other suitable material to seal and keep the grout from escaping as it is pumped in behind the lining.

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- 2.7 The potassium silicate grout shall be pumped until a back pressure of approximately 80 psi is shown on the pressure gauge.
- 2.8 Close the "T" valve and allow the grout to set up.
- 2.9 After the grout has set, remove the assembly and insert a pipe cap onto the couplings and tighten securely.
- 2.10 If a void is definitely known to exist, place the connections no greater than 6" from the known location of the void.
- 2.11 For the potassium silicate grout material, use of Corrosion Engineering, HB[®] Powder and CORLOK[®] Solution, mixed in an appropriate ratio of 1.75 parts powder (by weight) with 1 part solution (by weight). This ratio may be varied. However, it is desirable to incorporate as much of the powder into the mix as is possible, and still be able to adequately pump the grout into position. The more powder that can be incorporated into the pumpable mix, the faster the initial set and curing of the installed grout will be.
- 2.12 The grout operation should begin along the bottom row of attached couplings, and as it fills up the void, it will reach the next level of pipe nipples. Leaving the gate valves in an open position above level where the pressure grouting is being undertaken will allow the installer to readily know when the grout has reached this level. When this is observed, close the valve and move the hose to the next horizontal coupling and continue. The procedure will continue until the job is completed.
- 2.13 Please refer to Product Information Data Sheets CE-281, "CORLOK B Mortar", and CE-207, "HB Mortar" for further information.
- 2.14. Corrosion Engineering acid proof mortar components and mixes of them present a number of hazards. Read before using and follow the hazard information, precautions, and first aid directions on the individual product labels and Material Safety Data Sheets.

3. DISCLAIMER

- 3.1 The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, Corrosion Engineering expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; NO WARRANTY OF FITNESS

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- 3.2 Please contact Corrosion Engineering for specific recommendations at +1-610-833-4000 or fax +1-610-833-3040.

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