Repair—Don't Replace—Cracked Sewer Pipe

by James C. Carnahan, (M.ASCE), Prof. Mgr.; Century West Engineering, Bend, Oregon 97709,

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Abstract:
Approximately 0.5 mile (0.8 km) of 42 in. (1.07 m) diameter reinforced concrete was installed for a sanitary sewer project when the on site inspector discovered that numerous joints had displaced O-ring gaskets and corresponding cracked pipe bells. Corrective action in accordance with contract documents was removal and replacement. But because of the potential cost involved, the contractor asked that he be allowed to repair the pipe in place. Joint testing procedures were identified and a successful polyurethane grout method was selected. A sample test was conducted on two pipe joints, using slightly different injection methods. After completion of the core grouting, samples were cut through the joints to observe pipe cross sections. The first sample showed inadequate adhesion between the grout and concrete pipe. A second sample test involved washing the joints with a trisodium phosphate solution to remove the installation lubricant. Results of the second test were satisfactory. However, the use of the chemical grout was not strictly in accordance with the standard specifications, and was not used for the repair of concrete pipes. The contractor agreed to extend his warranty from one year to 20 years and provide a cash deposit for future air testing of all grouted joints and for limited regrouting, if necessary. The cooperative effort provided an end product as good or better than that originally specified, allowed the contractor a significant cost savings and avoided additional traffic interruptions and project completion delays.

Subject Headings: Concrete pipes | Pipe joints | Contractors and subcontractors | Rehabilitation | Sewers | Pipelines | Reinforced concrete | Chemical grouting

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