

## **SECTION 49**

### **JOINT TESTING AND SEALING OF SEWER LINES**

#### **49.1 GENERAL**

This section of the specifications shall form a part of the contract documents and should be read in conjunction with them.

The work shall include the mechanical clearing of any obstructions or gasket material at each affected joint, the testing of every joint and the sealing of joints that fail to withstand the test pressure.

#### **49.2 TESTING OF PIPE JOINTS**

Testing is to be provided for at pipe joints only by an approved joint testing device such as a packer. Joint test pressure shall be 20 Kpa higher than the ground water pressure or, in the absence of ground water pressure data, equal to 1 Kpa per vertical meter of pipe depth or 20 Kpa, whichever is greater. Joint test pressure shall not exceed 69 Kpa.

The test medium shall be water or air. Test records shall be kept during the joint testing procedure and shall include:

- a) identification of the manhole section tested
- b) the test pressure used
- c) location of each joint tested (metric or imperial units)
- d) statement of results for each joint tested

#### **49.3 FAILED TEST**

A liquid test procedure producing a flow rate exceeding 1.1 litres per minute or an air test procedure that decays by more than 14 Kpa per 15 seconds shall be considered a failed test.

#### **49.4 JOINT SEALING**

Joints showing visible leakage or joints that have failed the joint leakage test shall be sealed as specified. Joint sealing shall be accomplished by forcing chemical sealing materials into or through faulty joints by a system of pumps, hoses and sealing packers.

Each joint being sealed shall be retested, as specified, upon completion of sealing procedure. Joints that fail to meet the specified test criteria shall be resealed and retested until the test criteria can be met.

Complete records shall be kept on joint sealing performed in each section of sewer line. The records shall identify the manhole section in which the sealing was done, the location of each joint sealed and the joint sealing verification results.

#### **49.5 CHEMICAL SEALING PROPERTIES**

All chemical sealing materials used in the performance of the work specified must have the following properties and characteristics:

- a) during the sealing process, the chemical sealant must be able to react/perform in the presence of water.
- b) the cured chemical sealant must withstand submergence in water without degradation.
- c) the resultant chemical sealant must prevent the passage of water through the sewer pipe joint.
- d) the cured chemical sealant must be flexible as opposed to brittle.
- e) the chemical sealant **once formed** must not be biodegradable.
- f) the cured chemical sealant should be chemically stable and resistant to the mild concentrations of acids, alkalis, and organics found in normal sewage.
- g) residual sealing materials must be easily removable from the sewer line to prevent reduction or blockage of the sewage flow.

#### **49.6 PAYMENT**

Payment shall be made in accordance with the tendered or negotiated rates applicable upon satisfactory completion of the work and shall include all equipment tools, materials and incidentals necessary to complete the work in accordance with these specifications.

Adopted: November 2007