

Section 13750

TIGHTNESS TESTING OF STRUCTURES

PART 1 - GENERAL

1-1. SCOPE. This section covers hydrostatic tightness testing of concrete structures.

1-2. GENERAL. Unless otherwise specified, testing shall be completed prior to placement of backfill, cleaning and disinfection, and prior to the installation of equipment in the structure.

All testing work shall be performed by Contractor in the presence of Engineer. Engineer shall be notified at least 5 days in advance of the time and place at which testing will be performed.

1-2.01. Testing Schedule and Procedure. A testing schedule and test procedure shall be submitted to Engineer for review and acceptance not less than 30 days prior to commencement of testing. The schedule shall indicate the proposed time and sequence of testing for each structure. A testing procedure shall be provided to indicate the limits of the area to be tested, define the method of isolation, the position and use of valves during testing, the location of temporary bulkheads, and the procedure to be followed in performing the testing.

1-2.02. Water. Water for testing will be furnished as stipulated in the temporary facilities section. Following completion of testing work, the water shall be disposed of in a manner acceptable to Engineer and, unless otherwise permitted by Engineer, shall not be allowed to enter other parts of the system.

PART 2 - PRODUCTS

2-1. TEST EQUIPMENT. All necessary connections between the structure to be tested and the water source or other test medium, together with pumping equipment, any necessary metering devices, pressure or vacuum gauges, and all other equipment, materials, and facilities required to perform the specified tests and dispose of the test medium after completion of testing, shall be provided by Contractor. Contractor shall provide all required temporary flanges, valves, bulkheads, bracing, blocking, and other sectionalizing devices that may be necessary to perform the testing. All temporary devices shall be removed upon satisfactory completion of testing.

2-2. ALLOWABLE WATER LOSS. The maximum allowable water loss shall be measured as a maximum drop in surface level of 0.5 inches and the test duration shall not be less than 24 hours.

It is intended that all liquid-containing concrete structures shall be free from visible leaks. Damp spots on exterior wall surfaces will be considered visible leaks if water can be picked up on a facial tissue. Damp spots on wall footings will be permitted. All visible leaks which have not spontaneously plugged or demonstrated a definite decrease in the rate of leakage over a maximum period of 28 days shall be located and repaired by and at the expense of the Contractor in a manner acceptable to Engineer.

Each leak which is discovered during the correction period shall be located and repaired to the satisfaction of Owner by and at the expense of Contractor. Repairs shall be made to visible leaks regardless of any amount the total measured loss may have been below the specified maximum allowable loss during the tightness test.

### PART 3 - EXECUTION

3-1. HYDROSTATIC TEST PROCEDURES. The procedure and sequence of testing shall be subject to review and acceptance by Engineer.

Unless otherwise specified, tightness testing shall be performed after all pipe sleeves have been installed but before backfilling or the interior waterproofing material or coating has been applied or exterior dampproofing material has been applied.

Unless otherwise specified, the wetwell shall be filled to a depth 10.00 feet above the floor level with potable water at a uniform rate not to exceed a depth of 4 feet per hour to the level specified and allowed to stand for at least 2 days prior to tightness testing. During this period, sufficient water shall be added to maintain the water level to the elevation specified.

Measurements of water level and loss will be taken by Engineer during the 24 hour test period. If the measured drop in water level exceeds the allowable amount at this time the structure shall be drained, repaired, cleaned, refilled, and retested to the satisfaction of Engineer.

Regardless of test results, if any visible leaks or indications of leaks are found, the structure shall be drained, repaired, and retested to the satisfaction of Engineer.

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Pipe connections or openings to structures, if not provided with drip tight valves, shall be temporarily plugged during testing. Where slide gates, sluice gates or similar devices are located, Contractor shall provide bulkheads or the means to make them drop tight, and measure any leakage.

3-1.01. Disposal of Test Water. Contractor shall be responsible to determine a suitable location and method for disposing of the used test water. Water discharged to overland disposal or to a sewer system shall be discharged at flow rates and locations acceptable to the local governing agencies and in compliance with applicable rules and regulations.

End of Section

