

SECTION 02676

HYDROSTATIC TESTING OF PIPELINES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Field hydrostatic testing of new water pipelines.

1.02 UNIT PRICES

- A. No payment will be made for hydrostatic testing of pipelines under this Section. Include cost in unit price of pipelines being tested.

PART 2 PRODUCTS - NOT USED.

PART 3 EXECUTION

3.01 GENERAL

- A. Hydrostatically test all new water pipelines for liquids after disinfection, if required, and before connecting to water distribution system.
- B. Pipelines shall be tested in lengths between valves, or plugs, of not more than 1,000 feet unless greater length is approved by Owner's Representative.
- C. Conduct hydrostatic tests in presence of Owner's Representative in accordance with requirements of this Section.

3.02 PREPARATION

- A. Disinfect water system pipelines prior to hydrostatic testing.

3.03 TEST PROCEDURES

- A. Furnish, install, and operate connections, pump, meter and gages necessary for hydrostatic testing.
- B. Allow pipeline to sit minimum of 24 hours from time it is initially disinfected until testing begins, to allow pipe wall or lining material to absorb water. Contractor should be aware that periods of up to 7 days may be required for mortar lining to become saturated.

- C. Expel all air and apply a minimum test pressure of 150 psi as directed by Owner’s Representative
- D. Maintain test pressure for 4 hours. If a large quantity of water is required to maintain pressure during test, testing shall be discontinued until cause of water loss is identified and corrected.

3.04 ALLOWABLE LEAKAGE FOR WATER MAINS

- A. During hydrostatic tests, no leakage will be allowed for sections of water mains consisting of welded joints.
- B. Maximum allowable leakage for water mains with rubber gasketed joints shall be as determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{133,200}$$

- C. Allowable Leakage per 1000 feet of Pipeline in GAL/HR at 150 psi:

3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
0.25	0.33	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.66	1.99	2.48	2.98

3.05 CORRECTION FOR FAILED TESTS

- A. Repair all joints showing visible leaks on surface regardless of total leakage shown on test. Check all valves and fittings to ensure that no leakage occurs that could affect or invalidate test. Remove any cracked or defective pipes, fittings and valves discovered during pressure test and replace with new items.
- B. Owner’s Representative may direct Contractor to disinfect failed lines after repair and prior to retesting. Conduct subsequent disinfection operations in accordance with requirements of Section 02675.
- C. Repeat test until satisfactory results are obtained.

3.06 COMPLETION

- A. Upon satisfactory completion testing, remove risers remaining from disinfection and hydrostatic testing, and backfill excavation promptly.

**Hydrostatic Pressure Test Data Sheet  
City of Galveston, Texas**

Project: \_\_\_\_\_ Sheet #: \_\_\_\_\_ Location: \_\_\_\_\_  
 Inspector: \_\_\_\_\_ Contractor: \_\_\_\_\_

**Section to be Tested**

	On (street name)	From (street name)	To (street name)	Total Length (ft)	Pipe Diameter (inch)

**Test Log**

	Hrs	Time	Pressure (PSI)	Flow Meter (GPM)	Leakage*
	Start				N/A
	1				
	2				
	3				
	4				

**TOTAL LEAKAGE =**

Test Result: (check one)      Passed \_\_\_\_\_      Failed (to be repaired & retested) \_\_\_\_\_

Inspector: \_\_\_\_\_ (Signature)      Date: \_\_\_\_\_

Contractor: \_\_\_\_\_ (Signature)      Date: \_\_\_\_\_

*Allowable Leakage per 1000 feet of pipeline in Gallons per hour at 150 psi:													
Line Size	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
Leakage (GA/HR)	0.25	0.33	0.5	0.66	0.83	0.99	1.16	1.32	1.49	1.66	1.99	2.48	2.98
Pres. Drop (PSI/HR)	5	5	5	5	5	5	5	5	5	5	5	5	5

END OF SECTION