

**LETTER TO INDUSTRY**  
**LTI #00000009**

**DATE:** December 29, 2010

**DCSM REFERENCE:** Article 5  
**Article** Section 5-330.9

**SUMMARY OF ISSUE/TOPIC:** Hydrostatic Testing

**EFFECTIVE DATE:** Immediately

**POLICY / REQUIREMENTS / GUIDELINE:** Change in wording, additional language and paragraphs added in this section to conform to current procedures and testing methods in the field.

**BACKGROUND:** This change updates the DCSM to reflect the City Inspector to perform and witness hydrostatic testing procedures and ensure compliance and methods of construction, repair or replacement for the purpose of achieving hydrostatic testing compliance in the field.

**5-330.9 HYDROSTATIC TESTING**

Pressure tests shall conform with Section 4 of AWWA Standard C600.

- A. The water mains shall be tested for leakage by the Contractor at his own expense in the presence of the City Inspector.  
All tests will be conducted in a manner to minimize as much as possible any interference with the Contractor's work or progress. A maximum of five thousand (5,000) linear feet of water main may be tested at one time.
- B. The Contractor shall notify the City Inspector when the work is ready for hydrostatic testing and tests shall be made as soon thereafter as practicable under the direction of the City Inspector.  
Personnel for reading meters, gauges or other measuring devices will be furnished by the City Inspector, but all other labor, equipment, water and materials, including meters and gauges, shall be furnished by the Contractor.
- C. The water mains shall be tested as a whole or in sections valved or bulkheaded at the ends. Test piping under a hydrostatic pressure of 200 psi unless shown otherwise on the approved plans. Apply pressure to the piping after it has been purged of air. The City Inspector shall determine if the piping is properly purged. Maintain water pressure for a minimum of two hours for testing.
- D. All joints, valves or fittings at which leakage occurs shall be reworked to insure tightness. Following repair, the pipeline shall be retested until leakage is within the limit set. Methods of repair prior to retesting shall be done with City inspection and approval. All materials must be rated by an approved testing agency.

E. If it is determined that any existing appurtenances (Valves, piping or fittings) are defective and are hindering test procedures, it shall be the responsibility of the Developer and/ or Contractor to remove and replace all defective materials at no additional cost to the City in order to achieve passing hydrostatic testing procedures.

F. Testing procedures shall be in accordance with AWWA C600 and the measured amount of leakage shall not exceed the amount found in Table 5A of AWWA Specification C600-05. If determined by the City Inspector that all air has been purged. The following table may be used to determine allowable leakage limits.

The table has been established by the following formula:

$$L = SD\sqrt{P}$$

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L = Allowable leakage in gallons/hour

S = Total length of pipe being tested

D = Nominal diameter of the pipe

P = Average test pressure during testing

**ALLOWABLE LEAKAGE PER 1,000 FT OF PIPE LINE \* - GPH  
Normal Pipe Diameter - in.**

Avg. Test Pressure psi (Bar)	ALLOWABLE LEAKAGE PER 1,000 FT OF PIPE LINE * - GPH Normal Pipe Diameter - in.												
	3	4	6	8	10	12	14	16	18	20	24	30	36
250 (17)	0.32	0.43	0.64	0.85	1.07	1.28	1.50	1.71	1.92	2.14	2.56	3.21	3.85
225 (16)	0.30	0.41	0.61	0.81	1.01	1.22	1.42	1.62	1.82	2.03	2.43	3.04	3.65
200 (14)	0.29	0.38	0.57	0.76	0.96	1.15	1.34	1.53	1.72	1.91	2.29	2.87	3.44
175 (12)	0.27	0.36	0.54	0.72	0.89	1.07	1.25	1.43	1.61	1.79	2.15	2.68	3.22
150 (10)	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
125 (9)	0.23	0.30	0.45	0.60	0.76	0.91	1.06	1.21	1.36	1.51	1.81	2.27	2.72
100 (7)	0.20	0.27	0.41	0.54	0.68	0.81	0.95	1.08	1.22	1.35	1.62	2.03	2.43

• For pipe with eighteen (18') ft. nominal lengths. To obtain the recommended allowable leakage for pipe with twenty (20) ft. nominal lengths, multiply the leakage calculated from the table by 0.9. If the pipeline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size.

**CONTACT:** Elden Riffle, Chief Project Inspector

**DEPARTMENT:** Department of Community Development

**MANAGER**

**APPROVAL:** Michael Moon, P.E.

**MANAGER TITLE:** Public Works and Utilities Director