

SECTION 15992
TESTS - PIPING SYSTEMS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The other Contract Documents complement the requirements of this section.
- B. The General Requirements apply to the work of this section.

1.2 SCOPE

- A. Provide labor, materials and supervision necessary to perform all piping tests for all systems as follows:
 - 1. Domestic Water Systems
 - 2. Sanitary and Storm Systems
 - 3. Chilled Water Systems
- B. Additional tests may be specified in other sections. These shall be performed in addition to those specified in this section.
- C. Should governing bodies require tests over and above those specified herein, they shall be performed by the Contractor and certified for approval by such governing bodies or agencies.
- D. Perform additional tests as may be required by utility companies or agencies supplying the particular service such as city water, natural gas, medical gases, etc.
- E. Provide certified test reports for all systems.

1.3 EQUIPMENT

- A. Contractor shall provide all devices, equipment, gases, etc., necessary to make tests required. Devices installed in the work shall not be used for test purposes.
- B. Materials shall be subjected to standard test by manufacturer before shipment.

1.4 GENERAL REQUIREMENTS

- A. Make test during installation and after completion. Tests shall be made at expense of Contractor.
- B. Piping concealed in building construction, chases, etc., shall be proved before being concealed. Contractor failing to make such tests must assume all costs of removing and replacing defective piping and must pay all costs of cutting and repairing building construction made necessary by this neglect to end of guarantee period.
- C. Make tests prior to insulating piping or backfilling of underground work.
- D. Make hydrostatic tests with cold water. The minimum duration shall be four hours.
- E. Test in presence of Owner's representative, who may direct Contractor to perform tests in presence of some other appointed witness. In no case shall Contractor perform a test without its being witnessed. Contractor will be responsible for correct testing, observation of results, and corrections necessary.
- F. Provisions shall be made so that every item may thoroughly inspected, and in no case shall any part of construction be obscured.
- G. Do not apply test pressures to a hot valve. In event such testing is necessary, install temporary block ahead of valve. Final test of connection against hot valve shall be by examination of work under service pressure.
- H. Any device connected into system that cannot assume test pressure shall be disconnected and

protected from damage.

- I. All parts of system under test must be under constant supervision with authority to bleed off excess pressure that may develop. No tests shall remain on work unless continuously attended. Use care so that excess pressure does not develop because of temperature changes.
- J. Work shall be completely leak free at any joint, fittings, accessory, or attachment. If repairs are necessary, re-test work after correction. Correct defects made manifest by these tests before proceeding with other work.

1.5 CERTIFIED TEST REPORTS

- A. For each system tested, provide a certificate testifying that the system was tested as specified and provide the following data:
 - 1. Identification of system tested referencing specific equipment connected to system.
 - 2. Date tested.
 - 3. Test pressure and duration of test.
 - 4. Recorded test pressure at end of test.
 - 5. Media used for testing.
 - 6. List necessary repairs made before the system passed the leak test.
 - 7. Signature of Contractor.
 - 8. Signature of witness.
 - 9. Other data as required by the system specification.

1.6 DOMESTIC WATER SYSTEMS

- A. Hydrostatic test at 125 psig minimum, four-hour duration.
- B. After test, blow clean with potable water, leave lines clean of all sediment and debris.
- C. Sterilize all lines with chlorine as specified.

1.7 SANITARY, STORM AND ACID WASTE SYSTEMS

- A. Inspect lines over entire length for obstructions with illumination and by rodding entire length.
- B. Hydrostatic test building work to maximum head of water possible by plugging outlet and filling system to maximum height.
- C. Keep infiltration into gravity sewers to minimum. Proof may be required by tests on completed project immediately after rain of sufficient intensity to saturate soil, or by other means.

1.8 CHILLED WATER SYSTEM

- A. Chilled water system shall be tested hydrostatically at 150% of the maximum system design pressure, but not less than 100 psig. Refer to FBC-M, Section 1208. Maintain pressure for not less than four hours with no addition of water.
- B. After test, flush piping with clean water, removing debris and sediment.

END OF SECTION