

**SECTION 23 05 83  
TESTS – HVAC 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. Chilled Water Systems
- B. Additional tests as specified in other sections.
  - 1. Perform this test in addition to those specified in this section.
- C. Should a governing body require tests over and above those specified herein, the Contractor shall perform and provide certification for approval by such governing body or agency.
- 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 conduct required tests.
  - 1. Do not use devices installed in the work for test purposes.
- B. Materials are subject to standard test by manufacturer before shipment.

**1.4 GENERAL REQUIREMENTS**

- A. Make test during installation and after completion.
  - 1. Tests are at expense of Contractor.
- B. Conduct and obtain approval of all piping concealed in building construction, chases, etc., prior to concealment.
  - 1. 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.
  - 1. 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.
  - 1. The Engineer, Owner's representative, and/or permitting agency shall witness all Contractor performed test without exception.
  - 2. Contractor will be responsible for correct testing, observation of results, and corrections necessary.
- F. The Contractor shall make provisions for the thorough inspection of the installation and in no case hide any part of construction from the inspector.
- G. Do not apply test pressures to a hot valve.
  - 1. In event, such testing is necessary, install temporary block ahead of valve.
  - 2. Final test of connection against hot valve shall be by examination of work under service pressure.
- H. Disconnect and protected from damage any device connected to the system not designed for

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the test pressure.

- I. All parts of system under test must be under constant supervision with authority to bleed off excess pressure that may develop.
  1. No tests shall remain on work unless continuously attended.
  2. 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.
  1. If repairs are necessary, re-test work after correction.
  2. 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 CHILLED WATER SYSTEM

- A. Test the chilled water system hydrostatically at 150% of the maximum system design pressure, but not less than 100 psig.
  1. Refer to FBC-M, Section 1208.
  2. 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.

## **PART 2 PRODUCTS**

2.1 Not Used

## **PART 3 EXECUTION**

3.1 Not Used

END OF SECTION