This master should be used by designers working on Port of Portland construction projects and by designers working for PDX tenants (“Tenants”). Usage notes highlight a few specific editing choices, however the entire section should be evaluated and edited to fit specific project needs.

SECTION 220590 – PRESSURE TESTING OF PLUMBING SYSTEMS

1. GENERAL
   * + 1. DESCRIPTION
          1. This section describes pressure testing of plumbing piping systems.
       2. RELATED WORK SPECIFIED ELSEWHERE
          1. Section 221320, Vacuum Grease Waste Removal System
       3. SUBMITTALS
          1. Submit the following:

Test plan and schedule: For testing of piping and ductwork systems.

Test Reports:

Certificate of completion, inspection, and test by authority having jurisdiction on required piping systems.

Certificate of test approval by the Port on all systems.

The Port will record tests that it witnesses.

Use only if Commissioning Section 019100 is included in the project manual.

Coordinate with commissioning plan and schedule.

* + - 1. QUALITY ASSURANCE
         1. Code Compliance: Perform required tests in the presence of the authority having jurisdiction.
         2. Port Witness: Perform all tests in the presence of the Port.
         3. Simultaneous Testing: Test observations by the authority having jurisdiction and the Port need not occur simultaneously.

1. PRODUCTS

Not Used.

1. EXECUTION
   * + 1. GENERAL
          1. Piping: Test prior to concealment, insulation being applied, and connection to equipment, fixtures, or specialties. Conduct tests with all valves 10 percent closed except for those used to isolate the test section.
          2. Leaks: Repair all leaks and retest until stipulated results are achieved.
          3. Notification: Advise the Port 48 hours in advance of each test. Failure to so notify will require test to be rescheduled.
          4. Testing Equipment: Provide all necessary pumps, gauges, connections and similar items required to perform the tests.
          5. Pneumatic Leakage Testing: At the Contractor’s option and as approved by the Port, pneumatic leakage testing prior to hydronic pressure testing or system filling is permitted with a maximum air pressure of 5 psig. This does not replace requirements for hydronic pressure testing at a higher pressure specified herein. Pneumatic testing of plastic piping is not permitted unless approved by the Port.
       2. TESTING REQUIREMENTS
          1. Sanitary and Roof Drainage Systems: Test entire system or sections of system by closing all openings in piping except highest opening and filling system with water to point of overflow. If system is tested in sections, plug each opening except highest opening of section under test and fill each section with water, but none with less than 10-feet head of water. Keep water in system, or in portions under test, for at least 45 minutes before inspection starts. Test for two hours with no drop allowed. Locate and repair leaks.
          2. Piping: Test all piping as noted below, with no leaks or loss in pressure for time indicated. Repair or replace defective piping until tests are completed successfully.
          3. Confirm test pressure before proceeding with the work.

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| --- | --- | --- | --- |
| System | Test  Pressure | Test  Medium | Test  Duration |
| Natural gas | 60 psig | Air | 4 hours\* |
| Non-potable and potable water | 100 psig | Hydrostatic Water | 4 hours |

\*Test for 4 hours, minimum, or in accordance with the duration required in NFPA 54, whichever is more stringent.

* + - * 1. Vacuum Waste System: See Section 221320 for vacuum system testing requirements.

END OF SECTION 220590