

SECTION 22 08 00
COMMISSIONING OF PLUMBING SYSTEMS
Construction Specifications

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to the Work of this Section.
- B. Specific commissioning requirements are given in the following sections of these specifications. It is the contractor's responsibility to coordinate all HVAC systems testing with the GC and all other trades performing related testing services. The division 22 contractor shall provide all T24 required testing by what T24 calls "Certified Acceptance Test Technician". All such tests shall be provided to the districts CxA for inclusion into the CxA reports and submitted according to T24 requirements.
 - 1. 01 91 00, "General Commissioning Requirements"
 - 2. 26 08 08, "Commissioning of Electrical Systems."
 - 3. 23 08 08, "Commissioning of HVAC Systems."
 - 4. 25 55 00, "Facility Management System"
 - 5. ASHRAE Guideline 0-2013 or superseding ASHRAE guideline
 - 6. Title 24 / 2016 Section 120.8 or superseding CA Title 24 requirement

1.2 SUBMITALS

- A. General:
 - 1. Comply with Section –Submittal Procedures.
 - 2. See submittal requirements in Section 01 91 00–General Commissioning Requirements
- B. Prior to pre-functional testing:
 - 1. Provide a TAB plan for approval by the CxA
 - 2. Provide all Pre Functional Tests for approval to the CxA

1.3 COORDINATION

- A. The Contractor shall coordinate all testing and balancing and major equipment startup and installation with the Commissioning Provider (CxA) and the CM.
- B. For the Plumbing domestic water equipment, the Contractor shall provide a short discussion of the control of the plumbing equipment during the mechanical or electrical training conducted by others.
- C. Close coordination with the FMS provider is required to coordinate testing and commissioning requirements with the provider of the Facility Management System 25 55 00 as required to provide the necessary commissioning services for all metering equipment.

- D. Close coordination with the FMS provider is required to facilitate the devices specified in 25 55 00. Even if provided by the FMS contractor, they are to be installed by the Plumbing Contractor. All metering equipment provided by the FMS contractor will be installed by the Plumbing Contractor.

PART 2 PRODUCTS

2.1 TEST EQUIPMENT

- A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Trade Contractor for the equipment being tested.
- B. Datalogging equipment or software required to test equipment will be provided by the contractor, if required, but shall not become the property of the Owner.
- C. All testing equipment shall be of sufficient quality and accuracy to test or measure system performance required by the Contract Documents.

PART 3 EXECUTION

3.1 TESTING PREPARATION

- A. General Procedures are described in Section 01 91 00 – General Commissioning Requirements.
- B. Contractor shall perform all pre-functional performance tests with the tests approved by the CxA. The CxA and the owner shall be advised of all tests as required in this section and by the general commissioning requirements in 01 91 00.
- C. Pre-functional Checklists shall be completed and provided to the CxA for the following Plumbing systems:
 - 1. Contractor to develop, fill out and sign approved pre-functional checklists according to 01 91 00 for the following equipment and systems .These tests shall be provided even if the CxA does not provide related Functional performance tests for these systems:
 - a. Domestic Hot Water System
 - b. Potable water system (including backflow preventers, fixtures, piping cleaning and flushing, and booster pumps)
 - c. Sanitary drainage/sewer system
 - d. Storm drainage system
 - e. Water and Gas Flow Meters
 - f. Prerequisites for Functional Testing:
 - 2. Contractor shall certify that Plumbing systems, subsystems, and equipment are completed, calibrated, and started based on the tests verified and approved by the CP
 - 3. Contractor shall certify that the Facility Management systems pre-functional testing has been complete per 25 55 00. Coordinate with the 25 55 00 contractor if their work is not thru the Plumbing contractor.

3.2 FUNCTIONAL PERFORMANCE TESTING

- A. General procedures are described in the Division 01 Section "General Commissioning Requirements." 01 91 00
- B. Contractor shall execute all functional performance tests provided by the Commissioning Provider. No functional tests shall be performed without the CxA present.
- C. The details of the functional performance tests shall be reviewed and refined during the construction phase by the CxA. The final test will be provided to the contractor at least 5 business days before the test is conducted.

3.3 ELECTRONIC DOCUMENT REQUIREMENTS

- A. All working documents shall be provided in electronic format whenever feasible. Hard copies are only permissible if soft copies of the documents are not available.
- B. In addition to the hard copy requirements required in this section, at least all final documents shall be provided in pdf format, organized and tabulated identical to any hard copies provided. Coordinate media requirements with the owner at the time of submission

END OF SECTION