

**SECTION 23 08 00**  
**COMMISSIONING OF MECHANICAL SYSTEMS**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This Section includes requirements for commissioning mechanical systems, subsystems and equipment. This Section supplements the general requirements specified in Section 019113, "Commissioning Requirements".
- B. Refer to Section 019113, "Commissioning Requirements" for more specifics regarding processes and procedures as well as roles and responsibilities for all Commissioning Team members.

**1.02 DESCRIPTION**

- A. The requirements of this Section apply to all sections of Division 23.
- B. This project will have selected building systems commissioned. The complete list of equipment and systems to be commissioned are specified in Section 019113, "Commissioning Requirements". The commissioning process, which the Contractor is responsible to execute, is defined in Section 019113, "Commissioning Requirements". A Commissioning Authority (CxA) appointed by the Owner will manage the commissioning process.

**1.03 DEFINITIONS**

- A. Refer to Section 019113, "Commissioning Requirements", for definitions.

**1.04 COMMISSIONED SYSTEMS**

- A. Commissioning of a system or systems specified in Division 23 is part of the construction process. Documentation and testing of these systems, as well as training of the Operation and Maintenance personnel in accordance with the requirements of Section 019113 and of Division 23, is required in cooperation with the the Commissioning Authority.
- B. The Mechanical systems commissioning will include the systems listed in Section 019113, "Commissioning Requirements".

**1.05 SUBMITTALS**

- A. The commissioning process requires review of selected Submittals. The Contractor will submit a list of submittals. The Commissioning Authority will review the list and identify submittals that require review. Contractor will deliver submittals identified by Commissioning Authority.
- B. The commissioning process requires Submittal review simultaneously with engineering review. Specific submittal requirements related to the commissioning process are specified in Section 019113, "Commissioning Requirements".

**1.06 RELATED WORK**

- A. Division 01 – General Requirements

- B. Section 019113 – Commissioning Requirements
- C. Section 220800 – Commissioning of Plumbing Systems
- D. Section 260800 – Commissioning of Electrical Systems

## **PART 2 - PRODUCTS**

### **2.01 TEST EQUIPMENT**

- A. Manufacturer shall include required proprietary test equipment. Manufacturer shall furnish the test equipment, demonstrate its use, and assist the Commissioning Team in the commissioning process.
- B. Refer to 019113 for the minimum testing equipment required to be delivered by the Contractor for the execution of Functional Testing.
- C. Refer to 019113 for the calibration requirements of test equipment.

## **PART 3 - EXECUTION**

### **3.01 SITE OBSERVATIONS**

- A. Commissioning of the Building Mechanical Systems will require inspection of individual elements of the Mechanical construction throughout the construction period. The Contractor shall coordinate with the Commissioning Authority in accordance with Section 019113 and the Commissioning Plan to schedule inspections as required to support the commissioning process.

### **3.02 PRE-FUNCTIONAL CHECKLISTS**

- A. The Contractor shall complete Pre-Functional Checklists to verify systems, subsystems, and equipment installation is complete and systems are ready for Functional Testing. The Commissioning Authority will prepare Pre-Functional Checklists to be used to document equipment installation. The Contractor shall complete the checklists through online Commissioning tool. The Commissioning Authority may spot check a sample of completed checklists. If the Commissioning Authority determines that the information submitted in the checklist is not accurate, the Commissioning Authority will mark the checklist "In Progress" and the Contractor will make the corrections and resubmit. If the Commissioning Authority determines that a significant number of completed checklists for similar equipment are not accurate, the Commissioning Authority will select a broader sample of checklists for review. If the Commissioning Authority determines that a significant number of the broader sample of checklists is also inaccurate, all the checklists for the type of equipment will be marked "In Progress" and the Contractor will make the corrections and resubmit. Refer to Section 019113, "Commissioning Requirements", for submittal requirements for Pre-Functional Checklists, Equipment Startup Reports, and other commissioning documents.

### **3.03 CONTRACTOR'S TESTS**

- A. Contractor tests as required by other sections of Division 23 shall be scheduled and documented in accordance with Division 01, "General Requirements". All testing shall be incorporated into the project schedule. Contractor shall give no less than 7 days' notice of testing. The Commissioning Authority will witness selected Contractor tests at the sole discretion of the Commissioning Authority. Contractor tests shall be completed prior to scheduling Functional Testing.

### 3.04 FUNCTIONAL TESTING

- A. The Commissioning Process includes Functional Testing that is intended to test systems functional performance under steady state conditions, to test system reaction to changes in operating conditions, and system performance under emergency conditions. The Commissioning Authority will prepare detailed Functional Test procedures. The Contractor shall review and comment on the tests prior to approval. The Contractor shall include the required labor, materials, and test equipment identified in the test procedure to perform the tests. The Commissioning Authority will witness and document the testing. See Section 019113, "Commissioning Requirements", for additional details.

### 3.05 TRAINING

- A. Training of the operation and maintenance personnel is required in cooperation with the Commissioning Authority. Include competent, factory authorized personnel to deliver instruction to operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems. Contractor shall submit training agendas in accordance with the requirements of Section 011913. The instruction shall be scheduled in coordination with the General Contractor after submission and approval of formal training plans. Refer to Section 019113, "Commissioning Requirements" and Division 23 Sections for additional Contractor training requirements.

END OF SECTION 23 08 00