

SECTION 07 08 00
FACILITY EXTERIOR CLOSURE COMMISSIONING

PART 1 – GENERAL

1.1 DESCRIPTION

- A. The requirements of this Section apply to all sections of Division 07 and Division 08.
- B. This project will have selected building systems commissioned. The complete list of equipment and systems to be commissioned is specified in Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS. The commissioning process, which the Contractor is responsible to execute, is defined in Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.
- C. A Commissioning Agent (CxA) hired by the Contractor will manage the commissioning process.
- D. The Exterior Closure Commissioning will be accomplished through the following tasks:
 - 1. Contractor provided tasks:
 - a. Systems Mock Ups
 - b. Testing
 - c. Coordination of on-site reviews
 - d. Training
 - 2. VA provided tasks:
 - a. On site review

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS.
- B. Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.
- C. Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.

1.3 DEFINITIONS

- A. Refer to Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS for definitions.

1.4 COMMISSIONED SYSTEMS

- A. Commissioning of a system or systems specified in Division 07 and Division 08 is part of the construction process. Documentation and testing of these systems, as well as training of the VA's Operation and Maintenance personnel in accordance with the requirements of Section 01 91 00 and of Division 07 and 08, is required in cooperation with the VA and the Commissioning Agent.
- B. The Facility exterior closure systems commissioning will include the systems listed in Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.

1.5 TESTING

A. Perform the following envelope testing:

1. Air Leakage Test

a. ASTM E1827 Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door

- 1) Passing Criteria: Less than 0.25 CFM per square foot of test envelope at 75 Pascals
- 2) If the building fails the air tightness test it must be sealed until it is within 10% of test specification
- 3) Perform testing after the building is deemed airtight but before final finishes.

2. Water Penetration Test

a. ASTM E1105 Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference

- 1) Perform the water penetration test on the window system
- 2) Passing criteria: 1/2 oz of water that collects on top of an interior frame surface and does not spill over to be considered a "pass."

1.6 SUBMITTALS

- A. The commissioning process requires review of selected Submittals that pertain to the systems to be commissioned. The Commissioning Agent will provide a list of submittals that will be reviewed by the Commissioning Agent. This list will be reviewed and approved by the VA prior to forwarding to the Contractor. Refer to Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES for further details.
- B. The commissioning process requires Submittal review simultaneously with engineering review. Specific submittal requirements related to the commissioning process are specified in Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 CONSTRUCTION INSPECTIONS

- A. Commissioning of the building envelope systems will require inspection of individual elements of the envelope construction throughout the construction period. The Contractor shall coordinate with the Commissioning Agent in accordance with Section 01 91 00 and the Commissioning plan to schedule envelope inspections as required to support the Commissioning Process.

3.2 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 Systems Functional Performance Testing. The Commissioning Agent will prepare Pre-Functional Checklists to be used to document equipment installation. The Contractor shall complete the checklists. Completed checklists shall be submitted to the VA and to the Commissioning Agent for review. The Commissioning Agent may spot check a sample of

completed checklists. If the Commissioning Agent determines that the information provided on the checklist is not accurate, the Commissioning Agent will return the marked-up checklist to the Contractor for correction and resubmission. If the Commissioning Agent determines that a significant number of completed checklists for similar equipment are not accurate, the Commissioning Agent will select a broader sample of checklists for review. If the Commissioning Agent determines that a significant number of the broader sample of checklists is also inaccurate, all the checklists for the type of equipment will be returned to the Contractor for correction and resubmission. Refer to Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS for submittal requirements for Pre-Functional Checklists, Equipment Startup Reports, and other commissioning documents.

3.3 MOCKUPS

- A. Mockups: Provide mockups to verify selections made under sample submittals, to demonstrate aesthetic effects, to establish quality standards for fabrication and installation and to determine proper installation for air and water tightness.
- B. Mockups to be provided for the following systems:
 - 1. 04 20 00 UNIT MASONRY
 - 2. 07 54 23 THERMOPLASTIC POLYOLEFIN ROOFING
 - 3. 07 13 52 MODIFIED BITUMINOUS SHEET WATERPROOFING
 - 4. 07 14 00 HOT RUBBERIZED ASPHALT WATERPROOFING
 - 5. 07 60 00 FLASHING AND SHEET METAL
 - 6. 08 51 23 STEEL WINDOWS
- C. See specific specification section for detailed mock-up criteria.
- D. Coordinate review of the mockups with the VA
- E. Multiple materials may be part of the mock-up
- F. Subject to compliance with requirements, approved mockups may become part of completed Work if undisturbed upon date of Substantial Completion.

3.4 CONTRACTORS TESTS

- A. Contractor tests as required by other sections of Division 07 or Division 08 shall be scheduled and documented in accordance with Section 01 00 00, GENERAL REQUIREMENTS. All testing shall be incorporated into the project schedule. Contractor shall provide no less than 7 calendar days' notice of testing. The Commissioning Agent will witness selected Contractor tests at the sole discretion of the Commissioning Agent. Contractor tests shall be completed prior to scheduling Systems Functional Performance Testing.

3.5 SYSTEMS FUNCTIONAL PERFORMANCE TESTING

- A. The Commissioning Process includes Systems Functional Performance 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 Agent will prepare detailed Systems Functional Performance Test procedures for review and approval by the Resident Engineer. The Contractor shall review and comment on the tests prior to approval. The Contractor shall provide the required labor, materials, and test equipment identified in the test procedure to perform the tests. The Commissioning Agent will witness and document the testing. The Contractor shall sign the test

reports to verify tests were performed. See Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS, for additional details.

3.6 TRAINING OF VA PERSONNEL

- A. Training of the VA operation and maintenance personnel is required in cooperation with the Resident Engineer and Commissioning Agent. Provide competent, factory authorized personnel to provide instruction to operation and maintenance personnel concerning the location, operation, and troubleshooting of the installed systems. Contractor shall submit training agendas and trainer resumes in accordance with the requirements of Section 01 91 00. The instruction shall be scheduled in coordination with the VA Resident Engineer after submission and approval of formal training plans. Refer to Section 01 91 00, GENERAL COMMISSIONING REQUIREMENTS and Division 07 and 08 Sections for additional Contractor training requirements.

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