

PURPOSE

The City of Houston Commercial Energy Conservation Codes requires details for commissioning to be provided in the construction documents for the mechanical systems, service water heating systems, and building envelope.

COMMISSIONING

“The commissioning process is a quality-oriented process for achieving, verifying, and documenting that the performance of facilities, systems, and assemblies meets defined objectives and criteria. The commissioning process assumes that owners, programmers, designers, contractors, commissioning team members, and operation and maintenance entities are fully accountable for the quality of their work. The Commissioning Team uses methods and tools to verify that the project is achieving the Owner’s Project Requirements throughout the delivery of the project.” (Source: NIBS Guideline Series)

CODE

ASHRAE 90.1-2019

Section 5.9.2 Building Envelope Commissioning. For projects larger than 50,000 ft² conditioned area, except heated only warehouses and semi-heated spaces, detailed instructions for commissioning building envelope systems (see Informative Appendix E) shall be provided by the designer in plans and specifications.

Section 6.9.2 System Commissioning. HVAC control systems shall be tested to ensure that control elements are calibrated, adjusted, and in proper working condition. For projects larger than 50,000 ft² conditioned area, except heated only warehouses and semi-heated spaces, detailed instructions for commissioning HVAC systems (see Informative Appendix E) shall be provided by the designer in plans and specifications.

Section 9.9.1 Verification and Testing. Lighting control devices and control systems shall be tested to ensure that control hardware and software are calibrated, adjusted, programmed, and in proper working condition in accordance with the construction documents and manufacturer’s installation instructions.

2021 IECC

C408.2 Mechanical systems and service water-heating systems commissioning and completion requirements. Prior to the final mechanical and plumbing inspections, the *registered design professional* or *approved agency* shall provide evidence of mechanical systems *commissioning* and completion in accordance with the provisions of this section. *Construction document* notes shall clearly indicate provisions for *commissioning* and completion requirements in accordance with this section and are permitted to refer to specifications for further requirements. Copies of all documentation shall be given to the owner or owner’s authorized agent and made available to the *code official* upon request in accordance with Sections C408.2.4 and C408.2.5.

Exceptions: The following systems are exempt:

1. Mechanical systems and service water heater systems in buildings where the total mechanical equipment capacity is less than 480,000 Btu/h (140.7 kW) cooling capacity and 600,000 Btu/h (175.8 kW) combined service water-heating and space-heating capacity.
2. Systems included in Section C403.5 that serve individual *dwelling units* and *sleeping units*.

C408.3.1 Functional testing. Prior to passing final inspection, the *registered design professional* or *approved agency* shall provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the *construction documents* and manufacturer’s instructions. Functional testing shall be in accordance with Sections C408.3.1.1 and C408.3.1.3 for the applicable control type.

COMMISSIONING STATEMENT

CRITERIA

The commissioning statement shall include, but may not be limited to, the following summary of items included in the scope of typical commissioning activities for the purpose of the applicable energy code:

Building Thermal Envelope

- Walls
- Floors
- Roofs
- Doors
- Fenestration
- Insulation
- Leakage

Electrical

- Functional Testing
- Sensor Controls
- Time-Switch Controls
- Daylight Controls

Heating, Ventilation And Air Conditioning

- Air Systems Balancing
- Hydronic Systems Balancing
- Functional Performance Testing
- Economizers
- Controls
- Equipment

STATEMENT

BUILDING ENVELOPE

"As defined in the Houston Commercial Energy Conservation Codes, details have been specified for the commissioning of the Building Envelope system according to the referenced standards in the codes."

DESIGN PROFESSIONAL NAME

PRINT _____

SIGNATURE _____

DATE _____

[SEAL]

LIGHTING SYSTEM CONTROLS FUNCTIONAL TESTING

"As defined in the Houston Commercial Energy Conservation Codes, details have been specified for the commissioning of the lighting system controls according to the codes."

DESIGN PROFESSIONAL NAME

PRINT _____

SIGNATURE _____

DATE _____

[SEAL]

HVAC

"As defined in the Houston Commercial Energy Conservation Codes, details have been specified for the commissioning of the HVAC system and or service water heating system according to the referenced standards in the codes."

DESIGN PROFESSIONAL NAME

PRINT _____

SIGNATURE _____

DATE _____

[SEAL]

**Commissioning of the air barrier (C402.5.1.5)
Building Envelope Performance Verification**