

City of McKinney Texas Commissioning Process Guide

2021 International Energy Conservation Code

The application of the Commissioning Process starts at the beginning of the project inception and goes through building occupancy. Each project phase has required activities that need to be completed during that phase. During the planning and design process, the Commissioning Provider is retained, the systems to be commissioned are selected, the Owner's Project Requirements are developed, the Basis of Design documents are developed and reviewed, the preliminary commissioning plan is written, and commissioning specifications are included in the construction documents. While the code required building systems must be on the list of selected systems to be commissioned, the owner or designer may also select additional systems.

NOTE - The City needs assurance that these activities are completed before a permit is issued. The City can request a copy of all the documents for review or rely on the approval by the Commissioning Provider and Owner or owner's representative. The following is the process explained and City required reports.

1. IECC 2021 REQUIREMENTS – PERMIT

1.1 COMMISSIONING PROVIDER: The approved commissioning provider is selected by the owner and the selection is shown on the permit application.

1.2 DESIGN DOCUMENTS-COMMISSIONED SYSTEMS: The IECC 2021 code requires that mechanical systems, service water heating systems and lighting control systems be completed and commissioned. The construction documents including notes and specifications shall clearly indicate provisions for commissioning and completion requirements. These construction document requirements convey the owner's requirements and the designer's criteria for the performance and commissioning process for the designated systems.

1.3 COMMISSIONING PLAN: The following is an outline of the contents of a typical commissioning plan. The Commissioning Plan shall be developed by an approved provider for all systems to be commissioned and/or tested and shall include the following items:

- a. A narrative of the commissioning process developed specifically for the project.
- b. The roles and responsibilities for the commissioning providers and the commissioning team through final commissioning activities.
- c. Documentation of communication channels and processes including the distribution of the commissioning plan, logs, testing documents and reports during the design and construction process.
- d. A detailed description of conditions and schedules of the commissioning process activities, and the list of operations, functions, systems, and assemblies that will be commissioned. Measurable performance criteria shall be included where not shown on the construction documents.
- e. The project design documentation and submittal review procedures and reports.
- f. Inspection checklists and testing forms, issues and resolution log, and commissioning progress reports to be used during the project to communicate and track commissioning and inspection process information, including format, approvals and distribution.
- g. The procedures to follow for resolution where the commissioning evaluation does not meet the Owner's Project Requirements or design documents.

2. IECC 2021 COMMISSIONING DOCUMENTATION for FINAL INSPECTION and CERTIFICATE OF OCCUPANCY

2.1. INTRODUCTION:

The commissioning process starts at the beginning of project planning and continues through initial building operation. Some of the commissioning testing is often done after the certificate of occupancy inspections. Environmental and seasonal condition may not provide adequate testing condition, particularly for mechanical equipment. Construction schedules may not allow testing of incomplete systems. Thus, it is necessary to verify the required commissioning performance up to the point of final City inspection. This can be done by having the revised commissioning and project documents collected along with the testing results up to that time. The preliminary commissioning report and issue logs need to include the project open items including future testing and equipment and systems currently not meeting requirements.

The preliminary commissioning report is reviewed by the City on a form approved by the Commissioning Provider and/or Owner or owner's representative that is submitted to the City.

2.2 FUNCTIONAL and PERFORMANCE TESTING: Equipment functional performance testing shall demonstrate the installation and operation of components, systems, and system-to-system interfacing relationships in accordance with approved plans and specifications such that operation, function and maintenance serviceability for each commissioned system is confirmed in all modes of operation.

2.3 TESTING and BALANCING REPORT: HVAC systems shall be balanced in accordance with generally accepted engineering standards, and the project documents. A written report shall be submitted describing the activities and measurements completed.

2.4 OPERATIONS and MAINTENANCE MANUALS: An operations and maintenance manual (also called a systems manual) shall be provided and include:

- a. Submittal data and intended operation
- b. Manufacturer's operations manuals and maintenance manuals
- c. Listing of at least one service agency
- d. Controls maintenance and calibration information
- e. Verified sequence of operation with set points
- f. Schedule for inspecting and recalibrating

2.5 COMMISSIONING REPORTS: The following are outlines of typical contents for the preliminary and final commissioning reports. Due to project scheduling, it may be necessary to provide a preliminary commissioning report on project commissioning status and equipment operation to obtain a certificate of occupancy. IECC 2021 requires that the design professional or approved agency provide the preliminary report to the owner. The owner then provides a letter of receipt for the preliminary report to the City to proceed with final inspection.

2.5.1 Preliminary Commissioning Report

The commissioning provider shall provide a Preliminary Commissioning Report that includes the following information:

- a. Performance of commissioned equipment, systems, and assemblies, including a review of the HVAC test and balance report.
- b. Issue and resolution logs including itemization of deficiencies found during testing and commissioning that have not been corrected at the time of report preparation.
- c. Deferred tests that cannot be performed at the time of preliminary report.
- d. A plan for the completion of commissioning including climatic and other conditions required for performance of the deferred tests.

2.5.2 Final Commissioning Report

The commissioning provider shall provide a final commissioning report to the owner prior to project completion that includes the following information:

- a. A copy of the final commissioning plan including functional and performance test procedures used during the commissioning process including measurable criteria for test acceptance.
- b. A copy of the design and submittal reviews as required by the commissioning plan
- c. Results of all evaluations, startup data, functional and performance tests, reports and checklists by suppliers, contractors, observers, and commissioning providers.
- d. Issue logs and disposition of all deficiencies found during testing, including details of corrective measures used or proposed.
- e. Equipment, systems, and assemblies repaired and adjustments to calibration.
- f. Equipment and systems sequences and settings shall be documented and submitted in the final sequence of operation with set points and in the O&M or systems manual.
- g. A resolution plan identifying all the issues unresolved and incomplete at the end of the project.

3. FORMS REQUIRED BY THE CITY OF MCKINNEY, TEXAS

3.1 - COMMERCIAL ENERGY COMMISSIONING SUBMITTAL FORM

3.2 - COMMERCIAL ENERGY COMPLIANCE COMMISSIONING FORM

These forms are attached below:



COMMERCIAL ENERGY COMMISSIONING SUBMITTAL FORM

Date: _____

Project Name: _____

Address: _____

Permit Number: _____

To the Chief Building Official:

Per IECC 2021 – Section C408, I hereby declare that the submitted documents are in compliance with the 2021 International Energy Conservation Code Commissioning Process Requirements, City of McKinney Ordinances, local amendments to this code and Reference Standards. All Commissioning specifications are included in the construction documents.

Registered Design Professional / Authorized Agent (Signature)

Owner / Owner authorized agent (Signature)



COMMERCIAL ENERGY COMPLIANCE COMMISSIONING FORM

Date: _____

Project Name: _____

Address: _____

Permit Number: _____

To the Chief Building Official:

I hereby declare that the work is in compliance with the 2021 International Energy Conservation Code, City of McKinney Ordinances, local amendments to this code and Reference Standards.

_____ The owner has received the Preliminary Commissioning Report for the Mechanical System.

_____ The lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in prior working condition in accordance with construction documents and manufacturer's instructions.

Owner / Owner authorized agent (Print Name)

Owner / Owner authorized agent (Signature)