



Checklist

Pre-commissioning

Purpose: The purpose of this document is to provide a guideline and a roadmap to prepare the facility and the systems within to allow for the successful completion of a final commissioning and validation.

The goal and objective of the commissioning /validation process is to assure that all systems have been installed and are operating in the parameters set forth in the design documents and specifications.

As the provider of the commissioning/validation services Q4 will coordinate with appropriate Fresh Thyme personnel as well as the GC, RC, MC, EC and any pertinent subcontractors to assure that all elements identified on this checklist have been completed prior to any site visits.

Note – It is imperative that each responsible party has completed all pre-visit requirements to avoid any reverse changes from the owner in the event the commissioning cannot be completed.

Responsible contractors must have personnel on site during the process to assure that any deficiencies can be immediately addressed and remedied. The goal will be a fully functional and operating system and not simply to generate lists of things that need to be done.

Our approach is to work as a partner with all parties to deliver the systems in a condition that is expected by Fresh Thyme.

Process: We believe in keeping things focused and simple. Please review the following checklist and if followed we will all walk away with a successful implementation.



Refrigeration:

- All system components have been procured and installed per the project documents and specifications of record.
- All systems have been installed in accordance with manufacturer's guidelines.
- All rack equipment has been installed in accordance with project documents and manufacturers guidelines.
- All condenser equipment has been installed in accordance with project documents and manufacturers guidelines.
- All piping has been installed per specification and professional common practice.
- All systems have been started up and functioning under permanent power.
- All control devices have been installed, wired and tested.
- All walk-in's, cases, and end devices are in operation and have been installed with proper control set-up in accordance with original specifications.
- Completion of manufacturers recommended start-up has been successful.
- All drains are installed properly with correct slope and insulated as required.
- All device and system pressures are set correctly to match plans and specs.
- All devices are labeled properly in accordance with plans and specifications.

HVAC:

- All system components have been procured and installed per the project documents and specifications of record.
- All systems have been installed in accordance with manufacturer's guidelines.
- Dehumidification unit installed per specifications and manufacturers guidelines.

- Start-up complete on Munters unit.
- RTU's installed per specifications and manufactures guidelines.
- Start-up complete on all RTU's New or existing.
- Munters unit connected to Control system and functioning properly.
- RTU's connected to control system and functioning properly.
- All sensors installed per plans and specifications and working properly.
- Air balance complete on entire system and report available for commissioning agent.
- All units properly labeled and identified in control system to match plans and specifications.
- All units set up to operate per plans and specifications.
- All hoods, fans, and complete ventilation systems are installed, operational and tested and balanced.

Lighting:

- All internal and external lights are installed and fully operational.
- Lighting Panel and controller installed per plans and specifications.
- Light panel and all lighting strategy programmed to match plans and specifications.
- Light level sensors installed per plans and specifications.
- Lighting override panel installed and tested as complete.
- Lighting controls all connected and functional to EMS system.
- All lighting functions tested and complete.

Energy:

- Dent power meter installed in Power Wall.
- All CT's installed per plans and specifications and connected back to meter.
- Dent meter set-up and programmed per plans and specifications and manufacturers guidelines.
- All measured meters are visible on EMS system.

Safety:

- Leak detector installed per plans and specifications.
- UPS/Battery Back-up installed and functional.

- All tubing and filter/sensors installed and tested.
- Leak detector connected to UPS.
- Leak detector tested for functionality.
- Leak detection system visible on Data Manager

Controls:

- All RDM controls are installed per plans and specifications.
- All RDM devices are powered, programmed and fully functional.
- Data Manager and Orbit station are installed, powered, programmed, and tested.
- Powerwall is fully installed, functional, and all final connectivity is in place.
- Remote communications have been established. (Via Fresh Thyme IP or RDM provided cell modem. Cell modem will be changed out after permanent IP is established.)
- All RDM IP devices are on line and operational.
- All BACnet devices are connected and operational.
- All MODBUS devices are connected and operational.
- All programming is complete in Data Manager and external devices.
- All programming has been tested and is functional.
- All unit level and enterprise level devices, sensors and components are installed, tested and operational.

Miscellaneous:

- All system components must be in a safe and operational condition.
- All plumbing fixtures installed per plans and specifications in a professional manner.
- All work areas and public areas are clear of any unnecessary construction debris.
- All system components are labeled as required per plans and specifications.
- All system drawings and as-builts are located and mounted as outlined in plans and specifications.
- All system manuals are located and in place per plans and specifications.