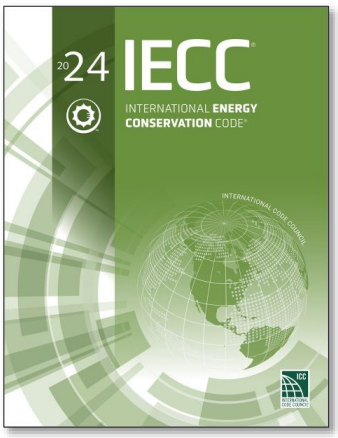
2024 IECC Commercial Energy Code
Section C105 Construction Documents and Section C107 Inspections

Rhode Island Energy™
Efficiency Programs



In 2024, Rhode Island passed a law requiring the prompt adoption of the 2024 International Energy Conservation Code (IECC), which includes more stringent requirements for commercial buildings. Highlighted here are the detailed permit, inspection, and approval procedures.

Reference: 2024 IECC with Rhode Island Amendments Chapter 4

Information Required on Construction Documents – C105.2

- Energy code compliance path
  - Four possible compliance pathways; the selected path must be declared in the Permit Set
  - C105.2 refers to additional compliance path details in paragraph C401.2
- Building Envelope – C105.2 requires the following to be represented on the drawings:
  - Insulation materials & R-values
  - Fenestration values: u & SHGC
  - Thermal envelope (must be represented on the construction drawings)
  - Thermal bridges
  - Air barrier
  - Area-weighted calculations
- Mechanical – C105.2 requires the following on the drawings:
  - System design criteria
  - Mechanical & service water-heating systems & equipment types, sizes & efficiencies
  - Economizer description
  - Equipment & system controls
  - Fan motor horsepower & controls
  - Duct sealing, duct & pipe insulation & location
- Lighting – C105.2 requires the following on the drawings:
  - Lighting fixture schedule with wattage
  - Control narrative (including sequences)
  - Location of daylight zones on floor plans
- Energy Storage & Renewables Readiness – C105.2 requires the following on the drawings:
  - Reserved location for raceways, inverters, etc. for energy storage and on-site renewable energy
  - Rated capacity of planned (or installed) energy storage system

Examination of Documents – C105.3

Review of energy code compliance is required during permit review. "The code official shall examine or cause to be examined the accompanying construction documents and shall ascertain whether the construction indicated and described is in accordance with the requirements of this code and other pertinent laws or ordinances."

This review may be delegated. "The code official is authorized to utilize a registered design professional, or other approved entity not affiliated with the building design or construction, in conducting the review of the plans and specifications for compliance with the code."

Energy Documentation Requirements – C105.6 & 105.6.2

This section requires that, "Energy code compliance documentation and supporting calculations shall be delivered in one document to the building owner as part of the project record documents or manuals, or as a standalone document." The section further requires that the construction documents specify that the required documentation and calculations shall "…be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the Certificate of Occupancy."

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Energy Code Inspections – C107

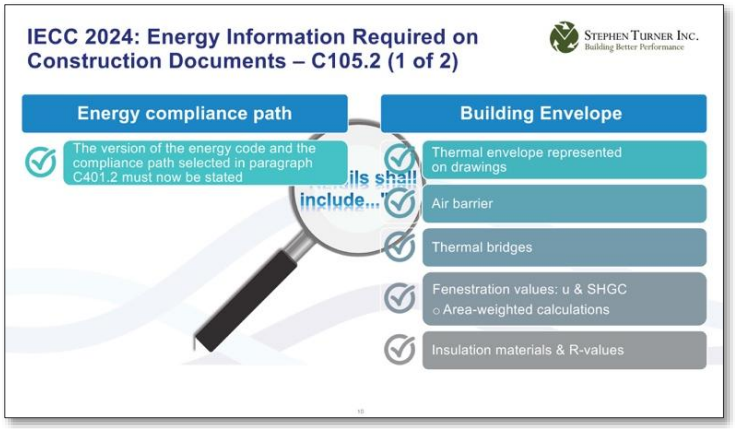
This section requires several different energy code compliance inspections. "The code official, his or her designated agent or an approved agency, upon notification, shall make the energy code compliance inspections set forth in Sections C107.2.1 through C107.2.6."

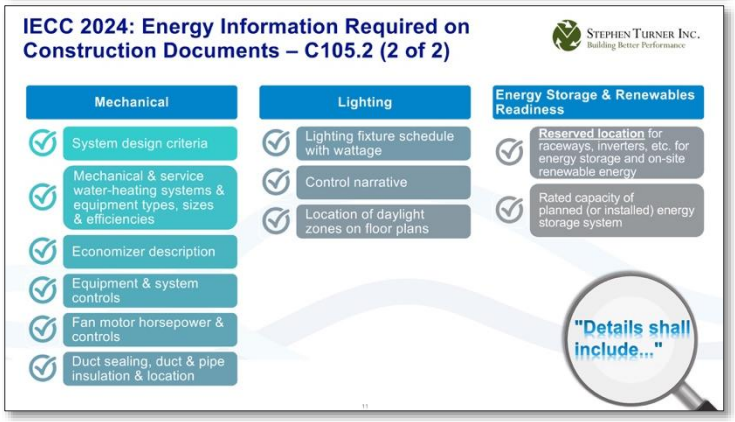
C107.2.1 Footing & foundation insulation: "Inspections shall verify the footing and foundation insulation R-value, location, thickness, depth of burial and protection of insulation as required by the code, approved plans and specifications."

C107.2.2 Building thermal envelope: "Inspections shall verify the correct type of insulation, R-values, location of insulation, thermal bridge mitigation, fenestration, U-factor, SHGC and VT, and that air leakage controls are properly installed, as required by the code, approved plans and specifications."

C107.2.3 & C107.2.4 Plumbing & mechanical systems: Inspections shall verify insulation, R-values, controls, heat traps, air leakage, fan efficiency, energy recovery, economizer and other specified requirements according to the code, approved plans, and specifications.

C107.2.5 Electrical system: "Inspections shall verify lighting system controls, components and meters as required by the code, approved plans and specifications. Where an ESS [Energy Storage System] area is required, inspections shall verify space availability and pathways to electrical service."





C107.2.6 Final inspection: "The final inspection shall include verification of the installation and proper operation of all required building controls, and documentation verifying activities associated with required building commissioning have been conducted in accordance with Section C408."

- Functional performance testing of energy-related plumbing, mechanical, and lighting system controls is part of the building commissioning required by the energy code. In addition, the design professionals are required to provide evidence of the required commissioning prior to the final inspection.
- As a result, the energy code requires commissioning functional performance testing prior to final inspection. Since all controls work including final programming and adjustments precedes testing, this work too must be completed in advance of final inspection.

Expert Insights

The list of energy-related information required in permit sets may most clearly be met with a single energy code compliance drawing sheet that presents all this required information, or references to specific drawing numbers or specification sections for requirements like the thermal envelope including air barrier locations. Additional designer's responsibilities include providing the information for required energy signage in buildings, verifying that the commissioning activities have been performed – perhaps incorporated into the Designer's affidavit – and providing the Owner with the required Energy code compliance documentation and supporting calculations. Similarly, contractors and commissioning providers will have to change some of their standard practices to meet the new energy code.