



Code Outreach Program – Paths to Compliance with the Residential Provisions of the Energy Code

This issue of the Code Outreach Program will give a brief overview of the paths of compliance with the residential energy efficiency provisions of the 2020 Energy Code of New York State (ECCNYS)¹. Per Section R101.3 of the 2020 ECCNYS, the Residential Provisions apply to “*residential buildings and the building sites and associated systems and equipment.*” In Section R202, the term Residential Building is defined as a building which is not more than three stories above grade plane and falls into one of the following categories: detached one-family dwellings; detached two-family dwellings; three or more attached townhouse units; Group R-2, R-3, or R-4 per the 2020 BCNYS; factory manufactured homes (§372(8) of NYS Executive Law); and mobile homes (§372(13) of NYS Executive Law). The 2020 ECCNYS Residential Provisions offer three paths to compliance: the prescriptive path, the performance path, and the Energy Rating Index (ERI) compliance path. Requirements for these paths can be found in Sections R401 through R406 of the 2020 ECCNYS.

Prescriptive Path

Sections R401 through R404 of the 2020 ECCNYS provide detailed requirements for the construction of the building, which must be met before a building can be deemed in compliance using this path. However, the “Total UA Alternative” provisions, found in Section R402.1.5, allow the use of software such as REScheck to verify that total building thermal envelope performs to the same efficiency that would be achieved by following Tables R402.1.2 or R402.1.4. For more information, see [Issue 2021-12 - Energy Code Compliance Software](#).

Performance Path

Section R405 “*establishes criteria for compliance using simulated energy performance analysis.*” In addition to these criteria, all provisions listed as “mandatory” in sections R401 through R404 must be met (see list of mandatory provisions below). Provisions listed as “prescriptive” in Sections R401 through R404 do not apply when following the performance compliance path.

ERI Path

Section R406 “*establishes criteria for compliance using an Energy Rating Index (ERI) analysis.*” In addition to these criteria, all provisions listed as “mandatory” in Sections R401 through R404 (see list of mandatory provisions below) and Section R403.5.3 must be met.

Mandatory Provisions of Sections R401 through R404, applicable to ALL compliance paths, include the following:

- **R401.3** A certificate stating R-values, U-values, and solar heat gain coefficient (SHGC) must be posted in an approved location.
- **R402.4** The building shall be constructed to limit air leakage per Sections R402.4.1 through R402.4.5.
- **R402.4.6** Tenant separation fire barriers shall be insulated to no less than R-10 and air sealed per R402.4.
- **R402.5** The maximum fenestration U-factor and SHGC area-weighted averages must comply with this section.
- **R403.1** A minimum of one thermostat must be installed for each separate heating or cooling system.
- **R403.1.2** Heat pumps shall only run supplemental heat when the heat pump cannot meet the heating load demand.
- **R403.3.2** Ducts, air handlers, and filter boxes shall be sealed, with exceptions.
- **R403.3.3** Ducts shall be pressure tested to determine air leakage by rough-in or post-construction testing, with exceptions.
- **R403.3.5** “*Building framing cavities shall not be used as ducts or plenums.*”
- **R403.4** Mechanical system piping carrying fluids hotter than 105°F or cooler than 55°F shall be insulated to a minimum of R-3.
- **R403.5.1** Compliance with Sections R403.5.1.1 and R403.5.1.2 is required. Controls, sensors, and pumps shall be accessible.
- **R403.6** The building must have a ventilation system in compliance with the Uniform Code.
- **R403.7** Heating and cooling equipment must be sized in accordance with approved methodologies.
- **R403.8** Systems serving multiple dwelling units must comply with sections C403 and C404 of the 2020 ECCNYS.
- **R403.9** Powered snow- and ice-melt systems must have automatic shutoffs.
- **R403.10** The energy consumption of pools and permanent spas shall be in accordance with Sections R403.10.1 through R403.10.3.
- **R403.11** Electric-powered portable spas shall meet the requirements of APSP 14.
- **R404.1** “*Not less than 90 percent of the permanently installed lighting fixtures shall contain only high-efficacy lamps.*”
- **R404.1.1** “*Fuel gas lighting systems shall not have continuously burning pilot lights.*”

¹Chapter 11 of the 2020 Residential Code of New York State (RCNYS) is intended to be a restatement of the applicable 2020 ECCNYS-Residential Provisions. However, the legally binding provisions of the Energy Code are as set forth in 19 NYCRR Part 1240 and the publications incorporated by reference in that Part. In the event of any conflict between the provisions of the 2020 ECCNYS and the 2020 RCNYS, the provisions of the 2020 ECCNYS will control. Therefore, this document focuses on the provisions as provided in the 2020 ECCNYS.