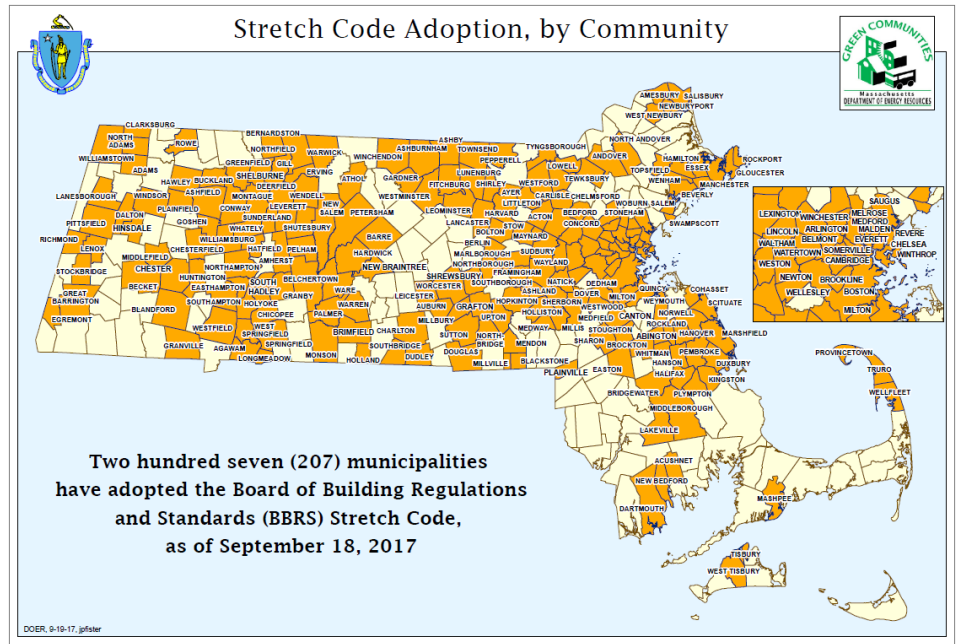


Changes to the Massachusetts Commercial and Residential Stretch Energy Code

Overview

A stretch code is an overlay code that provides a path to achieve greater energy efficiency over the requirements of the base code. With the Green Communities Act in 2008, Massachusetts took a national leadership role in building energy codes by being one of the first states to adopt a “stretch energy code.”

A revised Stretch Energy code went into effect on January 2, 2017. The Stretch Code is now based on 2015 IECC and is very much simplified from the previous version of the Stretch Code both in its residential and commercial building requirements.



New Commercial Buildings

Unlike previous versions of the Stretch Code, the current version only offers a modeled-performance compliance path: there is no prescriptive path for Stretch Code compliance. Another significant change to the commercial Stretch Code is that only large buildings and certain buildings with a high-energy usage intensity need to comply. The following buildings are subject to the Stretch Code requirements:

1. All Commercial Buildings over 100,000 sf
2. All Supermarkets, Laboratories and Conditioned Warehouses over 40,000 sf

These buildings will need to demonstrate modeled energy performance of at least 10% below the 2013 edition of ASHRAE/ANSI Standard 90.1, using the Appendix G methodology. (This reference to ASHRAE Appendix G might seem confusing at first because ASHRAE specifies that it is not an allowable compliance path. But the MA amendments override this limitation in ASHRAE.) As in the base energy code, compliance can be demonstrated with either site or source energy, and the source energy conversions can be found in C401.2.2 of the amended Massachusetts Energy Code.

New Residential Buildings

If you are building an R-use building of four stories or fewer above grade plane in a Stretch Code town, the new version of the Stretch Code requires that each unit comply with the Energy Rating Index (ERI) Compliance Alternative in the 2015 IECC with MA Amendments. The previous stretch code employed a height limit of three stories and allowed whole-building rating for multi-family buildings.



MASSACHUSETTS Energy Code Technical Support

There are THREE options available under the ERI Compliance Alternative:

- ENERGY STAR Homes:** New buildings or additions to an existing building, building system or portion thereof shall be certified to meet ENERGY STAR Certified Homes, Version 3.1 (or later)
- Passive House Institute (PHI) or Passive House Institute US (PHIUS):** The Specific Space Heat Demand modeled by a certified Passive House Consultant must be less than or equal to 10kBTU/sq. ft per year. Please note the criteria in R402.4, R403.2, R404 and R405 must be met.
- RESNET Home Energy Rating System (HERS):** Pursuing this option requires each unit to meet a maximum HERS index of 55, certified using software approved by BBRs, with higher thresholds allowed if using onsite renewable energy (see table R406.4.1)



Table R406.4.1

These tradeoffs are explained in greater detail in the 9th Edition under section R406.4.1

Renewable Energy Source	Maximum HERS Index (without PV)	
	New Construction	Whole House Renovations/Additions
None	55	65
Solar PV > 2.5 kW; Renewable primary heating system	60	70
Solar PV; Renewable primary heating & solar thermal DHW	62	72
Solar PV & Renewable primary heating & solar thermal DHW	67	77

The decision of which path to follow is up to the building owner. Following the ENERGY STAR Homes path may allow a HERS index greater than 55, but it will require additional requirements as listed on the ENERGY STAR Homes 3.1 Checklists available here: https://www.energystar.gov/index.cfm?c=bldrs_lenders_raters.nh_v3_1

Note that whichever path is pursued, per R406.2 of the 2015 IECC, the mandatory requirements listed in sections R401 through R404, and Section R403.5.3 must be met, and the building thermal envelope shall be greater than or equal to levels of efficiency and Solar Heat Gain Coefficient in Table 402.1.1 or 402.1.3 of the 2009 IECC.

Documentation requirements are found in MA Amendment R406.1.2 to 2015 IECC. These requirements vary slightly depending on which path is followed, but they each share the simple concept that preliminary verification of the design needs to be submitted in order to obtain a building permit, and final documentation confirming that the home has met the required standards must be submitted in order to receive a Certificate of Occupancy.

Whichever path is pursued, a certified individual is responsible for verifying the performance of the home, whether that be a HERS Rater or Passive House consultant.

Existing Buildings

Another major change from the previous version of the Stretch Code is how existing buildings are treated. The new version does not have any special requirements for additions, alterations, renovations, or repairs to existing commercial or residential buildings. Instead, existing buildings are treated exactly the same in Stretch Code communities as they are elsewhere, as covered in Chapter 5 of the IECC.