

2015 MA Stretch Energy Code Summary:

The Board of Building Regulations and Standards and the Department of Energy Resources are proposing to update the 2009 Stretch building energy code to be consistent with the 2015 IECC in the 9th edition MA building code as follows:

Application: New Residential homes, and Large New Commercial Buildings

The 2009 stretch code applied to all non-historic residential homes and all commercial buildings and additions over 5,000 sq ft. The 2015 update removes these provisions, and greatly reduces the scope of the stretch energy code to focus only on new residential construction, and only large new commercial buildings.

Residential application:

- Residential units in new buildings of 4 stories or less.

Residential requirement: (use the HERS option in the basecode)

- The residential units require a HERS rating of 55 or less, with the option to trade-off for a higher HERS rating up to 67 if they build onsite solar and/or renewable heating.
- Energy Star Homes and Passivehouse (PHIUS+) homes also comply.

Commercial application:

- New commercial buildings over 100,000 sq ft
- New supermarkets, laboratories and conditioned warehouses over 40,000 sq. ft.

Commercial requirement:

- These large new buildings are required to show a 10% energy reduction relative to the ASHRAE 90.1-2013 standard basecode for the same building.

All other buildings that require a building permit comply with the 9th edition base energy code.

Details - Residential: HERS 55 rating requirement is at the same level as the Base IECC code. The MA amendments add a renewable trade-off to give builders more design flexibility, and potentially make homes more affordable.

The 2015 IECC national model code has incorporated a HERS rating option for the first time, although MA has had a HERS rating option since 2009. The base code HERS rating is set at 55, with MA amendments that allow a higher (easier) HERS rating for homes that install renewable heating or solar panels (renewable trade-offs).

The 2015 residential stretch code requires that new homes use this HERS rating option in the basecode, but is no more stringent than the basecode option at HERS 55 plus MA renewable trade-offs.

Table N1106.4.1 (R406.4.1). Maximum HERS ratings with onsite renewable energy systems

Renewable Energy Source	Maximum HERS index
	New construction
None	55
Solar PV > 2.5kW; Renewable primary heating system	60
Solar PV; Renewable primary heating & solar thermal DHW	62
Solar PV & Renewable primary heating & solar thermal DHW	67

1. Solar photovoltaic array rated at 2.5kW or higher shall offset 5 HERS points.
2. *Clean Biomass Heating System*, solar thermal array, or geothermal heat pump, or a combination of these systems, operating as the primary heating system shall offset 5 HERS points.
3. Solar thermal array for primary domestic hot water heating or a *Clean Biomass Stove* shall offset 2 HERS points.

Details – Commercial:

The ASHRAE 90.1-2013 standard is an option under the baseline IECC commercial code.

The ASHRAE standard update from the current 2010 level to 2013 is modest and varies by building type.

Changes from ASHRAE standard 90.1-2010 to 90.1-2013 by common building type are shown below:

Building Type	ASHRAE Change 2010 to 2013	Stretch code applies	Net change in energy performance under 2015 Stretch code vs. 2014 basecode
Small office building	10%	No	10%
Medium office building	7%	No	7%
Large office building	0%	Yes, 10%	10%
Strip mall	7%	No	7%
Mid-rise apartment	6%	Yes, 10%	15%
High-rise apartment	5%	Yes, 10%	14.5%
Restaurant	4%	No	4%
Hospital	5%	Yes, 10%	14.5%
Warehouse	6%	Yes, 10%	15%
Elementary school (<100,000 sqft)	8%	No	8%
Secondary school (>100,000 sqft)	13%	Yes, 10%	22%

Examples of New construction:

1. Large office buildings are unaffected by the update from the ASHRAE standard update from 2010 to 2013, however, they are covered by the stretch code requirement resulting in a similar net code impact to small office buildings relative to the basecode in MA in 2014.
2. High schools feel perhaps the biggest single code impact under the hypothetical combination of the base code update and a move to the stretch code, however, these schools are already incentivized by a combination of the Mass Save utility funded programs and the MA school building authority to build to LEED or MassCHPS standards which are significantly above the baseline energy code.

APPENDIX AA Stretch Energy Code Language:

AA101 Purpose and Adoption. The purpose of the stretch energy code is to provide a more energy efficient code alternative for new buildings. The stretch energy code may be adopted or rescinded by any municipality in the commonwealth in the manner prescribed by law.

AA102 Applicability. Municipalities that have adopted the stretch energy code shall use the energy efficiency requirements of this appendix as provided below. These requirements replace all previous stretch energy code requirements.

AA103 New buildings.

AA 103.1 R-use buildings. In all R-use buildings, of four stories or less above *grade plane* with one or more dwelling units, each *dwelling unit* shall comply with Section N1106 of 780 CMR 51 (Residential Code).

AA103.2 Large area and high energy use buildings. All buildings over 100,000 sq ft, and new supermarkets, laboratories and conditioned warehouses over 40,000 sq. ft. shall comply with 780 CMR 13 and shall demonstrate energy use per square foot at least 10% below the energy requirements of ANSI/ASHRAE/IESNA 90.1 APPENDIX G Performance Rating Method on either a site or source energy basis.

AA103.3 Other new buildings. New buildings not covered in AA103.1 and AA103.2 shall comply with 780 CMR 13 or 780 CMR 51-Chapter 11 as applicable based on the use and occupancy of the building.

AA104 Existing buildings. For alterations, renovations, additions or repairs of existing buildings in these municipalities the energy efficiency requirements of 780 CMR 13 or 780 CMR 51-Chapter 11 shall be used as applicable based on the use and occupancy of the building.