

ARTICLE 23: Specialized Stretch Code

Informational Handout Prepared by the Concord Climate Action Committee 4/20/23

Comparison of Stretch and Opt-in Code for Low-rise Residential Buildings			
Fuel Type	Home Size	Stretch Code	Opt-in Specialized Stretch Code
All-electric new homes	Any Size	HERS 45 or Passive House	
Mixed-fuel new homes	Under 4,000 sq ft	HERS 42	+ Solar PV (Min 4KW) + wiring for electrification
		Passive House	+ wiring for electrification
	4,000 sq ft and above	HERS 42 or Passive House	+ Solar PV to net-zero (HERS 0 or PHIUS 0) + wiring for electrification
Home additions and alterations	Any size	Same as Stretch Code	

Comparison of Stretch and Opt-in Code for Commercial Buildings			
Building Type	Fuel Type	Stretch Code	Opt-in Specialized Stretch Code
New multi-family (4+ stories & over 12,000 sq. ft.)	All-electric	HERS 45 or TEDI or Passive House	Passive House
	Mixed-fuel	HERS 45 or TEDI or Passive House	Passive House + wiring for electrification
New schools, offices, municipal buildings	All-electric	HERS 45 or TEDI or Passive House	
	Mixed-fuel	TEDI or Passive House	+ Solar + wiring for electrification
Other new commercial (over 20,000 sf)	All-electric	ASHRAE or TEDI or Passive House	
	Mixed-fuel	ASHRAE or TEDI or Passive House	+ Solar PV + wiring for electrification

Source: Department of Energy Resources (DOER), Ian Finlayson

1. HERS: a measure of a home’s energy efficiency. Lower scores indicate greater energy efficiency.
2. Passive House: performance-based building certification that dramatically reduces energy use.
3. PHIUS: Passive House Institute of US, rating system.
4. TEDI: Thermal Energy Demand Intensity, derived from building energy modeling software
5. ASHRAE: Standard 90.1 - commercial building performance standard

FAQ on Updated Stretch Code & Municipal Opt-In Specialized Code

Information from MA Net Zero Buildings Coalition, facilitated by Northeast Energy Efficiency Partnerships (For more information, contact Darren Port at dport@neep.org or Cornelia Wu cwu@neep.org)

Please note: This Q&A document covers both the Stretch Code AND the Specialized Code. Article 23 is only about adopting the Specialized Code, as the updated Stretch Code is already in effect in Concord.

1. What is a stretch code?

A stretch code is part of the state building code which sets "above code" requirements for building energy performance compared to the base energy code - aiming to reduce greenhouse gas emissions related to the building sector to comply with statewide legal limits for 2025, 2030, 2040 and 2050.

2. How is a stretch code adopted?

A stretch code is adopted (or rescinded) by municipal action - a city council or town meeting vote.

3. How many MA communities have adopted the current Stretch Code?

A total of 300 "Green Communities," representing nearly 90% of the state's population, have adopted the current Stretch Code, available since 2009.

4. What is the impetus for both the Updated Stretch Code and Municipal Opt-In Specialized Code?

The climate bill resulting in *A Next-Generation Roadmap for Massachusetts Climate Policy (2011)* directed DOER's efforts to revise the stretch code to meet emissions reduction limits mandated by the *Global Warming Solutions Act (2008)*.

5. Does the Municipal Opt-In Specialized Code apply to existing structures?

No, the Municipal Opt-In Specialized Code applies only to new construction and not to existing structures. Additions and renovations are regulated by the Updated Stretch Code and Base Code.

6. What is the main difference between the Updated Stretch Code vs Municipal Opt-In Specialized code?

For all Green Communities, the Updated Stretch Code automatically took effect on January 1, 2023. Certain provisions took effect immediately; other provisions become effective on July 1, 2023 or July 1, 2024. By contrast, the Municipal Opt-In Specialized Code requires municipal adoption with an effective date decided by the municipality.

7. Are there other differences?

The Municipal Opt-In Specialized Code builds on the Updated Stretch Code with several important additional provisions that help meet legal emissions reduction limits, promote the cost-effective transition to all-electric buildings and preservation of property values. To better understand these differences in detail, see DOER's MA Stretch Energy Codes, Northeast Energy Efficiency Partnerships' Commercial and Residential resources, MassSave's MA Energy Code Training, Resnet's Home Energy Rating System HERS Index, and Passive House Massachusetts' website.

8. What are these stricter provisions required by the Municipal Opt-In Specialized Code?

- All Mixed-Fuel Residential and Commercial buildings must provide pre-wiring for electric space heating, electric water heating, and electric appliances. This will accelerate the clean energy transition and avoid cost premiums to convert these buildings to all- electric in the future.
- Mixed-Fuel Residential dwellings greater than 4,000 square feet (i.e., large homes) must achieve HERS O or PHIUS ZERO, meeting energy efficiency requirements prior to renewable energy offsets. These exemplary performance standards encourage large homes to "go All-Electric."
- Mixed-Fuel Residential buildings where all dwelling units are less than 4,000 square feet must install Solar PV: greater than or equal to 4 kW for single family and greater than or equal to 0.75 kW/sf for multifamily, with exceptions for shaded sites and buildings pre-certified to Passive House Standards.
- Mixed-Fuel Commercial buildings greater than 20,000 square feet must offset their emissions by providing 1.5W of on- site solar panels for each square foot of the largest three floors or not less than 75% of the Potential Solar Zone Area - OR- achieve Passive House certification.
- Multi-Family residential buildings greater than 12,000 square feet must achieve precertification to Passive House Standards. Even without this code requirement, many affordable housing projects currently being developed in MA are being designed to meet this standard.

9. Will the Municipal Opt-In-Specialized Code discourage the creation of affordable housing?

No, because financial incentives through Mass Save and competitive incentives from the Department of Housing and Community Development make this attractive. All-Electric buildings entail little if any additional construction costs. Third party power purchase agreements provide solar energy with no upfront cost. The result is affordable housing that delivers comfort and energy efficiency in perpetuity, providing affordable housing residents with health benefits and lower energy bills over time.

10. Why adopt the Municipal Opt-In Specialized Code?

The Municipal Opt-In Specialized Code requires pre-wiring, avoiding costly retrofits down the road for which consumers will inevitably have to pay. It also has other requirements to help meet our climate goals. Additionally, early adopters may be well positioned to receive priority training, technical advice, and incentives.

11. Why are fossil fuels permitted if the climate bill required DOER to produce a "net zero" code?

The definition of "Net Zero" is evolving. The Federal Department of Energy (DOE) compiled 20+ net zero definitions used in official publications over the past decade; many definitions permit fossil fuel use. Both the Updated Stretch Code and Municipal Opt-In Specialized Code offer Mixed Fuel and All Electric compliance pathways. This preserves market choice at a time when economic uncertainty makes utility pricing highly volatile, and utility costs vary significantly from one community to another.

12. How many communities are mobilizing to adopt the Municipal Opt-In Specialized Code?

At least 20 communities have indicated their intention to vote on the adoption of the Municipal Opt-In Specialized Code this spring. These communities include cities and towns.