

The Massachusetts Voters Guide to the Municipal Opt-In Specialized Code

Introduction

As of January 1, 2023, Massachusetts has a new energy stretch code called the Municipal Opt-In Specialized Code, (the “Specialized Code”), that is available for adoption. Several municipalities such as Brookline, Cambridge, Somerville, and Watertown have already taken steps to adopt the code and at least 22 others are considering it. This represents about 20 percent of the Massachusetts population. Your city or town has the opportunity to be next. This guide is intended to be a resource for decision-makers in municipalities that are considering adopting this new code. This document covers important reasons to adopt the specialized code, what’s in the code, and resources for those wanting to learn more.

The requirements outlined in this document are in addition to those in the “regular” stretch code that jurisdictions follow as part of the Green Communities Program. As of January 1, 2023, the stretch code has been automatically updated for all Green Communities. Most of the energy code changes are directly related to the updated stretch code and are quite significant. They include heat or energy recovery requirements, wiring for electrical vehicle charging, new requirements for alterations, additions, and changes of use, and much more. We will not be discussing those requirements here, as they deserve their own summary.

Four Reasons to Adopt the Specialized Code

- 1. It requires large homes (greater than 4,000 square feet of conditioned floor area) to be zero energy or all-electric.**

The specialized code requires large homes to be all electric or to achieve zero energy through [HERS 0](#) or [Phius Zero](#) certification. These requirements apply to very large, expensive homes because they have high energy loads and have larger budgets compared to smaller sized projects.

- 2. It requires Passive House certification for multifamily buildings over 12,000 square feet.**

Commercial scale multifamily buildings over 12,000 square feet must be certified to meet Passive House standards, which means future tenants will see significant cost savings on their utility bills because of required high-performance design strategies. There is an initial phase-in period for buildings six stories and higher, where these requirements won’t take effect until January 1, 2024.

- 3. It decreases the costs of retrofits for homeowners who eventually want to install electric equipment by adding “electric ready” and “solar ready” provisions.**

Every home built today using natural gas and propane will eventually have to undergo a retrofit before the end of the useful life of new fossil-fuel equipment. Requiring rewiring – essentially making the house ready for the inevitable changeover to all electric – will minimize future costs and protect homebuyers from significant future financial burdens.

There are also opportunities to prepare for future solar photovoltaic system installation, such as having a dedicated space on an electric panel, prewiring, and a physical space free of obstructions on the roof, which will also reduce financial burdens for homeowners down the line.

4. It adds new requirements for on-site renewable energy generation (such as solar panels) in certain situations when feasible.

On-site energy generation requirements will help achieve further energy savings in homes and buildings, and will offset the energy used during the operation of a building. Buildings following the “mixed fuel” and “zero energy” pathways must generate energy on-site, while buildings following the “all-electric” pathway will need to be “solar ready” depending on the chosen compliance option.

Additional Benefits of Adopting the Specialized Code

It will help MA meet its carbon reduction targets that are mandated in the Global Warming Solutions Act.

Massachusetts has established legally-mandated goals for reducing carbon emissions by 50 percent compared to 1990 levels by 2030 according to the [Global Warming Solutions Act](#) and the subsequent [Clean Energy and Climate Plan](#). In order to reach those goals, the Commonwealth must deploy stronger measures to reduce building emissions. The Specialized Code alone will not be enough, but is a big step forward because it allows municipalities to rely on dedicated citizens of each community to drive the state further toward reaching its goals.

It goes above and beyond the Massachusetts stretch code requirements, and allows municipalities to lead the way to a clean energy future.

The Specialized Code can help communities take initiative to go above and beyond the state’s stretch code requirements and work to further decarbonize our building stock. Since Massachusetts isn’t on target to reduce emissions sufficiently, municipalities can step up and push for additional energy savings by supporting the provisions of the Specialized Code.

It could help guide decisions on transitioning away from fossil fuels for space heating.

Some building professionals may feel like the mixed fuel pathway of using natural gas or propane for space heating is too burdensome compared to the cost, so may opt to use the all-electric pathway instead.

It will help transform the energy market by increasing demand for high efficiency equipment installation.

By driving electrification measures, the Specialized Code will increase the demand for electric space heating equipment such as heat pumps, enabling investment in more resources for these technologies.

It will create new jobs for professionals looking to join the energy efficiency workforce.

Implementing the requirements of the Specialized Code will create more jobs in the sustainable design and consultation, construction, installation, and energy rating sectors, which will encourage building professionals to join the energy efficiency workforce.

What's in the Specialized Code?

There are three pathways to code compliance for both residential and commercial buildings, and the compliance pathway depends on the proposed fuel type and design. Homes or buildings can be zero energy, all electric, or mixed fuel.

For residential buildings, the following criteria must be achieved for each path:

RC102: Zero Energy: This pathway must either achieve a Passive House Institute United States (Phius) ZERO pre-certification or a Home Energy Rating System (HERS) Index of 42 (if mixed fuel) or 45 (if all electric) before factoring in on-site power production (OPP), typically via solar, and a HERS 0 after added OPP.¹

RC103: All Electric: This pathway requires full electrification of the home for water and space heating, clothes dryers, cooking equipment, and other features. Buildings that qualify for the all electric pathway must achieve a HERS rating of 45 or pre-certification as meeting Phius CORE or Passive House International (PHI) requirements. This pathway must also comply with solar-ready provisions in Appendix RB of the Stretch Code and Stretch Code provisions for wiring for electric vehicle charging. Backup generators are still allowed, even when using the “all electric” pathway.

RC104: Mixed Fuel: This pathway requires electric readiness for future electrification of a home, meaning that homes should be wired to accommodate future electric use and outlets must be installed near fossil fuel equipment for future installation of electric equipment. This includes equipment for water and space heating, clothes dryers, and cooking appliances. In addition, a HERS Index of 42 or less is required, or homes must meet Phius CORE or PHI. In addition, on-site renewable energy generation of at least 4kW is required for each dwelling unit, and each must have an electric vehicle ready space. This pathway must also adhere to Section RC105 which is guidance for a “Solar Ready Zone”. *If a new building is greater than 4,000 square feet of conditioned floor area, the option to follow this pathway is not available.*

Multifamily residential buildings are technically covered by the Commercial Code. Multifamily buildings greater than 12,000 square feet will need to achieve Phius CORE or Passive House International (PHI) standards. These requirements are phased in. Buildings up to five stories must meet them as of July 1, 2023, and buildings higher than five stories must meet them as of January 1, 2024.

For commercial buildings, the following criteria must be achieved for each path:

CC103: Zero Energy: This is an optional pathway for buildings that are designed to result in net zero energy consumption for a year, where the onsite energy production must be greater than or equal to the building's energy use. R-Use buildings (a large category of buildings from motels to apartments) can follow RC102 (the residential Zero Energy Pathway) with PHIUS ZERO or HERS 0 certification.

¹ With respect to HERS ratings, lower is better, and zero is best of all. The HERS rating maximum of 42 is applicable under the Specialized Code even though it may not yet be required under the Stretch Code, due to the latter's phase-in provisions. The same is true of the 45 maximum for all electric, discussed below.

CC104: All Electric: This pathway requires all energy services to be provided by electric power, with exception of external backup generation. In addition, a building following this pathway must meet the requirements of the Stretch Code for buildings of that type, size, and permit date.

CC105 and CC106: Mixed Fuel: This path is for buildings using fossil fuels for space heating, water heating, cooking, or clothes drying. In addition to otherwise applicable requirements of the Stretch Code, buildings following this option must all be electrification-ready, including rewiring for future electric conversion of any fossil fuel end uses. This means that buildings should be wired to accommodate future electric use and outlets must be installed near the fossil fuel equipment for future installation of electric equipment. In addition, this path requires on-site renewable energy production and additional minimum efficiency requirements for fossil fuel heating, ventilation, air conditioning, and water heating equipment.

Learn More

Massachusetts Department of Energy Resources:

- [Residential Specialized Code](#)
- [Commercial Specialized Code](#)
- [2023 Technical Guidance for Massachusetts Stretch Energy Codes \[Draft\]](#)
- [Stretch Code Updates](#)
- [Does your Community Follow the Stretch Code?](#)
- [The Green Communities Program](#)
- [Summary of MA Building Energy Codes](#)
- [Department of Energy Resources](#)

Commonwealth of Massachusetts:

- [Board of Building Regulations and Standards](#)
- [Climate Act of 2021](#)

Other Resources:

- [2023 Updated MA Commercial Stretch Code Summary](#) (Northeast Energy Efficiency Partnerships)
- [2023 MA Residential Stretch Code Summary](#) (Northeast Energy Efficiency Partnerships)
- [FAQ](#) (Massachusetts Net Zero Buildings Coalition)
- [2021 International Energy Conservation Code](#) (International Codes Council)
- [What is a HERS Rating?](#) (Residential Energy Services Network)
- [What is Phius?](#) (Passive House Institute United States)
- [What is PHI?](#) (Passive House International)
- [Residential Stretch Code Comparison](#) (Northeast Energy Efficiency Partnerships)
- [Commercial Stretch Code Comparison](#) (Northeast Energy Efficiency Partnerships)
- [Specialized Code Toolkit](#) (Massachusetts Climate Action Network & Massachusetts Sierra Club)
- [ZeroCarbon MA Resource Library](#) (ZeroCarbonMA)



Scan the QR code using a mobile camera to visit NEEP's Stretch Codes webpage

Northeast Energy Efficiency Partnerships (NEEP) facilitates the MA Net Zero Buildings Coalition

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