



Now is the Time for Communities to Update to the Massachusetts Stretch Code: A Deep Dive into the 10th Edition Base Code and the Stretch Code

Background and Introduction

Congratulations to the Massachusetts Board of Building Regulations and Standards (BBRS) on its recent ratification of the 10th edition of the Massachusetts Base Code, which is based on the 2021 International Energy Conservation Code. Additional congratulations to the Massachusetts Department of Energy Resources (DOER) for its recent update of the Stretch Code and Specialized Code, released on February 14, 2025.

The Base Code applies to new construction and major additions and alterations.¹ A concurrency period, during which time parties may opt to use either the 9th or 10th editions of the Base Code, will occur from September 24, 2024 through June 30, 2025, after which time only the 10th edition Base Code will be in use. The Stretch Code provides additional measures to increase building energy efficiency. Massachusetts also has a Specialized Code that brings new construction in alignment with Massachusetts greenhouse gas limit goals. This document compares the commercial and residential energy efficiency chapters of the 10th edition Base Code to the 9th edition Base Code and the 2025 Stretch Code update to evaluate changes for Massachusetts communities using the Base Code.

The [Green Communities program](#) is a statewide program in Massachusetts that provides funding and technical assistance for communities to complete local energy efficiency projects. One of the [requirements](#) for becoming a Green Community in Massachusetts is adopting the Stretch Code.² This analysis reveals that the 10th edition Base Code brings the energy efficiency “floor” much closer to the 2025 Stretch Code than the 9th edition Base Code. This smaller gap between the codes means that there is less of a lift for communities to adopt the 2025 Stretch Code in place of the Base Code which will allow them to unlock the advantages of the Green Community program.

¹ The 10th edition Base Code applies to alterations and additions as follows: only the new portion of the residential or commercial building is required to meet updated energy code requirements. The Stretch Code states that when residential alterations and additions are larger than 1000 sq ft or exceed 100% of the existing conditioned floor area, the whole residential structure must comply with updated HERS values. Additions to commercial structures following the Stretch Code that are larger than 20,000 sq ft or 100% of the existing structure must comply with the new construction pathway.

² Municipalities can choose to follow the Stretch Code even if they are not in the Green Communities Program.



Highlights of Residential Code Comparison

R401.2: Compliance pathways no longer include ENERGY STAR Single Family New Homes certification. Updated pathways are prescriptive, ERI, Passive House, or Appendix RC. This is consistent for both the 10th edition Base Code and the Stretch Code.

R403.6: Mechanical ventilation compliance pathways for minimum required airflow are updated in the 10th edition Base Code to include 1) a compliance table, 2) RESNET HERS Index, 3) ASHRAE 62.2 – 2019, and 4) an included formula for air leakage rate based on the conditioned floor area, the number of above-grade stories and bedrooms, the air leakage rate and a shielded weather factor. The Stretch Code does not include the compliance table as an option and allows for either ASHRAE 62.2 – 2019 or ASHRAE 62.2 – 2022.

R404.4: One- and two-family dwellings and townhouses are no longer exempt from having EV-ready spaces and must have a minimum of one space per unit. Multifamily housing is required to have at least 10 percent EV-ready parking spaces. The Stretch Code increases these requirements. See tables below.

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TABLE R404.4 EV READY SPACE REQUIREMENTS

Type of Building	Number of parking spaces
1 & 2 family dwellings and town houses	At least 1 per unit
Multi-family	At least 10%

Exceptions:

1. In no case shall the number of required *EV Ready Spaces* be greater than the number of parking spaces otherwise required by local ordinance.
2. This requirement will be considered met if all spaces which are not *EV Ready* are separated from the premises by a public right-of-way.
3. Any 50-ampere branch circuit may be replaced by 3 or more “EV READY” labelled 20-ampere branch circuits and terminations where sufficient spaces are available.
4. Residential structures of 1-4 dwelling units may use a 40-ampere dedicated circuit, or if necessary a 110 volt 20-ampere dedicated circuit, if a 50-ampere dedicated circuit would require the dwelling unit to upgrade the size of the electrical service beyond what would be required per the MA Electrical Code (527 CMR) for the unit if a dedicated circuit was not reserved for EVSE.
Construction documents shall identify the total service load required to serve the residential unit. If the reservation of a 50-ampere branch circuit will require an upgrade to a larger electrical service, the exception shall apply.



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TABLE R404.4 EV READY PARKING SPACE REQUIREMENTS

Type of Building	Number of parking spaces
1 & 2 family dwellings and town homes	At least one 50-amp branch circuit per dwelling unit to provide for AC Level II charging
All other R-use buildings	At least 20% of all installed spaces served with a 40-amp, 208/240-volt circuit with a minimum capacity of 9.6 kVA.

Exceptions:

1. In no case shall the number of required *EV Ready Spaces* be greater than the number of parking spaces installed.
2. This requirement will be considered met if all spaces which are not *EV Ready* are separated from the premises by a public right-of-way.
3. R-1, and R-2 multi-family properties may elect to comply with Commercial EV ready requirements in C405.13.
4. One or more SAE Level II spaces may be substituted with multiple SAE Level I spaces provided with wiring for a minimum 20amp 120 volt EVSE, with a ratio of at least 3 Level I spaces for each Level II space required.

R406.5: The 10th edition Base Code ERI-based compliance table now has more stringent HERS values for new construction that are based on the presence of solar or clean space heating. The Stretch Code categories are slightly different, but HERS values for some categories mirror those in the 10th edition Base Code table. See tables below.

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TABLE R406.5 MAXIMUM ENERGY RATING INDEX

On-site Renewable Energy Application	Maximum HERS Index score ^{a, b}	
	New construction	Whole house renovations; additions
None	52	65
Solar Electric Generation	55	70
Clean Space Heating	55	70
Solar Electric & Clean Space Heating	58	75

^a Maximum HERS rating prior to onsite renewable electric generation in accordance with Section R406.5

^b Where on-site renewable energy is included for compliance using the ERI analysis of Section R406.4, the building shall meet the mandatory requirements of Section R406.2, and the building thermal envelope shall be greater than or equal to the levels of efficiency and SHGC in Table R402.1.2 or Table R402.1.4 of the 2021 International Energy Conservation Code.



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TABLE R406.5 MAXIMUM ENERGY RATING INDEX

	Maximum HERS Index score ^{a,b}			
	New construction permits after July 1, 2024	New Construction with R406.5.2 embodied carbon credit	Accessory Dwelling Units	Major alterations, additions, or change of use ^c
<i>Mixed-Fuel Building</i>	42	45	52	65
Solar Electric Generation	42	45	55	70
<i>All-Electric Building</i>	45	48	55	70
Solar Electric & <i>All-Electric Building</i>	45	48	58	75

^a Maximum HERS rating prior to onsite renewable electric generation in accordance with Section R406.5

^b The building shall meet the mandatory requirements of Section R406.2.

^c Alterations, Additions or Change of use covered by Section R502.1.1 or R503.1.5 are subject to this maximum HERS rating, except for *Historic Buildings* which may opt to follow R503.1.1 for *alterations, additions or change of use*.

Appendix RC: In the 10th edition Base Code, Appendix RC (from the 2021 IECC) covers zero energy residential building provisions. The Specialized Code incorporates a modified version of Appendix RC. If communities adopt the Stretch Code, projects have the compliance pathway option to use the modified Appendix RC (in place of the 2021 IECC Appendix RC). If communities adopt the Specialized Code, projects must follow the requirements in the modified Appendix RC.



Highlights of Commercial Code Comparison

C401.2.1: Compliance pathways in the 10th edition Base Code include prescriptive, total building performance, ASHRAE 90.1, Appendix CC, and the Stretch Code. The Stretch Code replaces the total building performance pathway with the targeted performance and relative performance pathways. The relative performance pathway includes language outlining compliance with ASHRAE 90.1-2019. The Stretch Code also includes options for compliance via Passive House or HERS ratings.

C402: The 10th edition Base Code lowers maximum allowable UA value (U-factor*Area = measure of thermal performance over an area) for both the prescriptive pathway and the total building performance pathway. The Stretch Code replaces the compliance alternative pathway equation with maximum UA values for high- and low-glazed buildings. The Stretch Code also adds derating and thermal bridging requirements.

C402.5: The 10th edition Base Code maintains the acceptable air leakage rate at 0.4 cfm/ft² for building thermal envelope testing and adds an acceptable air leakage rate of 0.3 cfm/ft² for dwelling and sleeping unit enclosures. The acceptable air leakage rate in the Stretch Code is 0.35 cfm/ft² for building thermal envelope testing.

C405.13: In the 10th edition Base Code, all parking lots with at least two spaces have EV-ready space requirements based on the table below. The Stretch Code updates this so that parking lots for Groups B and R require a minimum of 20 percent EV-ready spaces and all other parking lots require a minimum of 10 percent EV-ready spaces.

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Table C405.13 EV-READY SPACE REQUIREMENTS

# of Parking Spaces	Minimum # of EV Ready Spaces
10	
2 - 6	1
7 - 13	2
14 - 20	3
21 - 40	4
41 plus	10%, but not more than 16 spaces

The branch circuit shall be identified as “EV READY” in the service panel or subpanel directory, and the termination location shall be marked as “EV READY”. The circuit shall terminate in a NEMA receptacle or a Society of Automotive Engineers (SAE) standard J1772 electrical connector.

Exceptions:

1. Parking spaces and garage spaces intended exclusively for storage of vehicles for retail sale or vehicle service are excluded from the EV-ready space percentage calculation.
2. This requirement will be considered met if all spaces which are not EV Ready are separated from the meter by a public right-of-way.
3. One or more AC Level II spaces may be substituted with multiple AC Level I spaces provided with wiring for a minimum 20amp, 120-volt EVSE, with a ratio of at least 3 AC Level I spaces for each AC Level II space required.
4. Any parking facility with 4 or more spaces providing installed Direct Current fast charging EVSE with a minimum charging speed of 150 kW to each space.
5. Parking spaces specifically designated for medium or heavy-duty vehicles are excluded from the EV-ready space percentage calculation.



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TABLE C405.13 EV-READY SPACE REQUIREMENTS

Occupancy Classification	Minimum percentage of EV-Ready Spaces	EV Charging Performance Requirements
Group R and Group B	20%	40-amp dedicated branch circuit or larger branch circuit with ALMS in accordance with Table C405.13.1
All Other Occupancies	10%	40-amp dedicated branch circuit or larger branch circuit with ALMS in accordance with Table C405.13.1

Exceptions:

1. Parking spaces and garage spaces intended exclusively for storage of vehicles for retail sale or vehicle service are excluded from the EV-ready space percentage calculation.
2. Any parking facility with 4 or more spaces providing installed Direct Current fast charging EVSE with a minimum charging speed of 150 kW to each space.
3. One or more AC Level II spaces may be substituted with multiple AC Level I spaces provided with wiring for a minimum 20amp, 120volt EVSE, with a ratio of at least 3 AC Level I spaces for each AC Level II space required.
4. Parking spaces specifically designated for medium or heavy-duty vehicles are excluded from the EV-ready space percentage calculation.

[C406.1: In the 10th edition Base Code, new buildings of specified use groups are required to have at least 15 energy efficiency credits as outlined in tables C406.1 (1-5). The Stretch Code also has a 15-credit requirement, but fossil fuel systems do not count towards credits. The 2025 Stretch Code update adds credit values for low global warming potential (GWP) concrete mix and net zero GWP insulation.

Appendix CC: In the 10th edition Base Code, Appendix CC (from the 2021 IECC) covers zero energy commercial building provisions. The Specialized Code incorporates a modified version of Appendix CC. If communities adopt the Stretch Code, projects have the option to use the modified Appendix CC (in place of the 2021 IECC Appendix CC). If a community adopts the Specialized Code, projects must follow the requirements in the modified Appendix CC.

Methods and Resources

This comparison was finalized in March 2025 using the 10th edition Base Code language and updated Stretch Code language, published on the state's [website](#).

Summary tables by NEEP, including more code changes than listed above, are available for [residential](#) and [commercial](#) codes. These comparisons are not an exhaustive list of all differences between the 9th and 10th edition Base Codes.

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