

# MASSACHUSETTS Energy Code Technical Support



## 2018 IECC Changes and New Massachusetts Amendments – Residential Buildings<sup>1,2</sup>

Code Section	Topic	Description of Change
<b>Chapter 1 – Scope and Administration</b>		
[MA] R103.2	Information on Construction Documents	Adopts EV Ready Space locations per R404.2 (see below)
<b>Chapter 2 – Definitions</b>		
<b>R202 General Definitions</b>		
[MA] R202	New Definitions	Clean Biomass Heating Systems, Electric vehicles, Electric vehicles supply equipment, electric vehicle charging space
	Revised Definitions	High-Efficacy Lamps (makes LEDs the only type of lamp that qualifies high-efficacy)
<b>Chapter 4 – Residential Energy Efficiency</b>		
<b>R401 General</b>		
[MA] R401.2	Compliance	Requires permit applicants to choose and implement one Additional Efficiency Package in Section R407 when following the prescriptive path (See R407.1 below.)
		Removes the Simulated Performance Alternative as a compliance path option
[MA] R401.3	Permanent Certificate	Requires the permanent certificate to list the final HERS index score when applicable
<b>R402 Building Thermal Envelope</b>		
R402.1	General (Prescriptive)	Provides exception from building thermal envelope requirements for log homes that are designed in accordance with ICC 400
[MA] R402.1.5.1		Updates the required version of the desktop edition of REScheck to Version 4.6.5 or later. (REScheck Web is still allowed as well.)
[MA] R402.4.1.1		Modifies Table R402.4.1.1 to include, “All insulation shall be installed at Grade I quality in accordance with ICC/RESNET 301”
Table R402.4.1.1		Adds clarifying language regarding air sealing of recessed lighting, showers and tubs on exterior walls, and HVAC register boots

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## 2018 IECC Changes and New Massachusetts Amendments – Residential Buildings<sup>1,2</sup>

Code Section	Topic	Description of Change
<b>R403 Systems</b>		
R403.3.6	<b>Ducts Buried Within Ceiling Insulation</b>	New subsection containing requirements for when ducts are partially or completely buried in ceiling insulation
R403.3.6.1	<b>Effective R-value of Deeply Buried Ducts</b>	When using a simulated energy performance analysis, the ducts may be considered to have an R-value of R-25 when surrounded by attic insulation and meeting certain conditions
R403.3.7	<b>Ducts Located in Conditioned Space</b>	Adds an option for buried ducts to be considered in conditioned space. In this case, duct leakage testing is still required. The impact is only for energy modeling compliance paths.
R403.6.1	<b>Whole-house Mechanical Ventilation Fan Efficacy</b>	Adds HRV or ERV to the fan efficacy table with a minimum fan efficiency of 1.2 cfm/watt
<b>R404 Electrical Power and Lighting Systems</b>		
R404.1	<b>Lighting Equipment (Mandatory)</b>	Increases the percentage of high-efficacy lamps installed from 75% to 90%
[MA] 404.2	<b>Electric Vehicle Charging Spaces (“EV Ready Spaces”) Reserved</b>	Requires the requirements of C405.10 EV Ready Spaces be met for residential buildings <i>other than</i> one- and two-family dwellings and townhouses not more than 3-stories.
<b>R405 Reserved</b>		
[MA] R405	<b>Reserved</b>	Deletes entire section (formerly the Simulated Performance Path Alternative) with no replacement.
<b>R406 Energy Rating Index Compliance Alternative</b>		
[MA] R406.1	<b>Scope</b>	Modifies the Passive House option to require pre-certification through PHIUS or PHI with on-site verification by a certified Passive House Consultant or certified Passive House Designer.
[MA] R406.4	<b>ERI-based Compliance</b>	The 2018 IECC increased the maximum ERI value to 61, but this section replaces that requirement to retain the maximum ERI of 55 when no on-site renewable energy is installed. Higher ERI values are allowed for projects incorporating solar electric, clean space heating, and/or solar hot water.

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Code Section	Topic	Description of Change
<b>[MA] R406.6.2</b>	<b>ERI Documentation</b>	Adds documentation requirements for the ERI option
<b>R407 Additional Efficiency Packages</b>		
<b>[MA] R407.1</b>	<b>Requirements (Prescriptive)</b>	When following the prescriptive path, each project must comply with at least one of three options: More efficient HVAC performance (R407.2), HRV or ERV (R403.6.1), or High efficiency water heater or solar thermal hot water (R407.3)
<b>Chapter 5 – Existing Building</b>		
<b>R502 Additions</b>		
<b>[MA] R502.1.2</b>	<b>Existing Plus Addition Compliance</b>	Replaces the Simulated Performance Alternative option (which has been deleted entirely) with a HERS Index option for compliance where the existing building plus the addition are included.
<b>R503 Alterations</b>		
<b>[MA] R503.2</b>	<b>Change in Space Conditioning</b>	Deletes the exception that allowed for up to 110 percent the energy cost when using the Simulated Performance Alternative because this option no longer exists.
<b>R505 Change of Occupancy or Use</b>		
<b>[MA] R505.2</b>	<b>Change of Occupancy or Use</b>	Deletes the exception that allowed for up to 110 percent the energy cost when using the Simulated Performance Alternative because this option no longer exists.

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## Previously Adopted Massachusetts Amendments (still in effect)<sup>1,2</sup>

Code Section	Topic	Description of Change
<b>Chapter 1 – Scope and Administration</b>		
[MA] R103.2	Information on Construction Documents	Adopts Appendix RA: Solar-ready Zone (see details below)
<b>Chapter 4 – Residential Energy Efficiency</b>		
<b>C401 General</b>		
[MA] R401.1	Scope	Requires the use of Appendix AA in Stretch Energy Code municipalities
MA 2020 (R401.2)	Compliance	Modifies performance path R406 ERI to: Require the use of all sections marked mandatory and allows for the use of RESNET HERS rating with amendments, ENERGY STAR Homes v 3.1, Passive House performance method
<b>C403 Systems</b>		
[MA] R403.3.3	Duct Testing (Mandatory)	Adds requirement for duct testing to be performed by a HERS Rater, HERS Rating Field Inspector, or an applicable BPI Certified Professional.
[MA] R403.6	Mechanical Ventilation (Mandatory)	Replaces the section referencing the mechanical ventilation requirements of the IRC with four options for determining minimum whole-house ventilation rates: (1) Equation 4-1 in Section R403.6, (2) ENERGY STAR Homes v3.1, (3) ASHRAE 62.2– 2013, or (4) a MA-specific formula.
[MA] R403.6.2	Verification	Requires verification from a HERS Rater, HERS Field inspector, or a BPI Certified Professional
[MA] R403.6.3	Air-moving Equipment, Selection and Installation	Requires devices be tested and certified by AMCA or HVI and that manufactures instructions must be followed
[MA] R403.6.4	Sound Rating	Sets a maximum sound rating of 1.0 sone with exceptions for air handler fans and remote-mounted fans
[MA] R403.6.5	Documentation	Requires homeowners receive documentation that provides proper use and maintenance information
[MA] R403.6.6	Air Inlets and Exhausts	Specifies requirements for air inlet and exhaust opening location and rodent protection

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Code Section	Topic	Description of Change
<b>R406 Energy Rating Index Compliance Alternative</b>		
[MA] R406.1	Scope	Establishes criteria for using and Energy Rating Index (ERI) analysis (see below) and two alternatives: ENERGY STAR Homes v 3.1 and Passive House
[MA] R406.3	Energy Rating Index	Replaces the IECC ERI with use of RESNET/ICC Standard 301 without modification
[MA] R406.4	ERI-based Compliance	Establishes a maximum ERI of 55 for buildings with no on-site renewable energy.
[MA] R406.5	Verification by Approved Agency	Requires verification by a RESNET Certified HERS Rater for the ERI and ENERGY STAR options or a Certified Passive House consultant for the Passive House option
[MA] R406.6	Compliance Software Tools and ERI Documentation	Requires approved software tools for ERI, ENERGY STAR, and Passive House options and contains specific documentation requirements
<b>Appendix AA – Stretch Energy Code</b>		
[MA] AA103.1	Stretch Energy Code	In all R-use buildings, four stories or less above grade, each dwelling unit shall comply with IECC section R406
<b>Appendix RA – Solar-ready Zone</b>		
[MA] RA101.1	Scope/General	Solar-ready provisions apply to new construction, not including additions
[MA] RA103.1	Solar-ready Zone/General	Adds a third exception for buildings and structures as designed and shown in construction documents that do not meet the conditions for a solar-ready zone area.
[MA] RA103.4	Obstructions	Adds note stating that, “nothing in RA103.4 shall require any construction documents to be redesigned or reconfigured so as to create a solar-ready zone area.”
[MA] RA103.7	Reserved	Removes the requirement to reserve space in the electrical panel for a dual pole circuit breaker labeled “for future solar electric.”

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