

Part 1 - Overview

PSD

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2023 Residential Stretch Code

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What is Mass Save®?

- Mass Save® is an initiative sponsored by Massachusetts' gas and electric Program Administrators and energy efficiency service providers, including
 - The Berkshire Gas Company
 - Cape Light Compact
 - Eversource Energy
 - Liberty Utilities
 - National Grid
 - Until
- The Sponsors of Mass Save work closely with the Massachusetts Department of Energy Resources to provide a wide range of services, incentives, trainings, and information promoting energy efficiency that help residents and businesses manage energy use and related costs.



We Are Mass Save®

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Presented by:

PSD



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Continuing Education

This webinar is approved for:

- 1-hour CSL CEU
- 1 AIA LU | HSW
- 1 CO CEU
- 1 BPI CEU

Everyone will receive a certificate of attendance via email



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Agenda

Introduction

Prescriptive Option

Base Code and Most Stretch Additions/Alterations

Stretch Code

Requirements

Formerly Known as Mandatory

Appendix RB Solar Ready

EV Ready

Municipal Opt-In Specialized Stretch Code

Summary

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Learning Outcomes

Have knowledge of the Stretch Code and how it is adopted locally to improve energy efficiency over the base code.

Compare and contrast the compliance options available for new construction, such as Prescriptive, ERI, and Passive House

Learn the requirements of Appendix RB: Solar Ready as well as the EV Ready and its requirements

Define the Specialized Code and explain how it results in zero- or near-zero energy buildings

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Poll Question #1

Which of the following best describes your field of work?

- A. Builder
- B. Architect
- C. Code Official
- D. HERS Rater
- E. Passive House Consultant



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2023 Massachusetts Residential Energy Code

Base Code (IECC 2021)

- New construction in towns & cities not a green community
- 52 communities

Expected from BBRs: July 2023

Stretch Code (2023 update)

- New construction in towns & cities that are a green or stretch community
- 299 communities

Residential: Jan 2023
Commercial: July 2023

Specialized Code ("Net-Zero")

- New Construction in towns & cities that vote to opt-in to this code
- Effective date: Typically 6-11 months after Town/City vote


Current Energy Code Options

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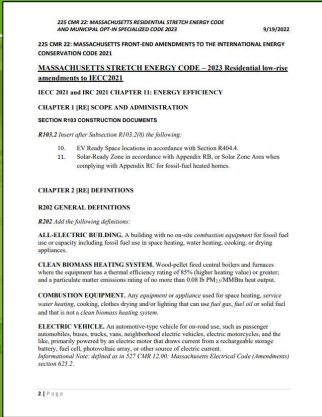


The 2023 Massachusetts Energy Code

The 2021 IECC




Massachusetts Amendments






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The 2023 Massachusetts Energy Code



-  **Base Code**
-  **Stretch Code**
-  **Municipal Opt-In Specialized Stretch Code**

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Overview of Changes



1 January 2023

➔


1 July 2024

- Maximum HERS Index decrease from 55 to 52
- Large additions and alterations must follow ERI path
- HRV/ERV required
- Specialized Stretch Code available for adoption

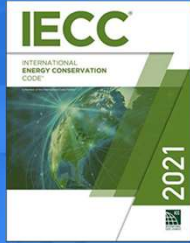
- Maximum HERS Index decrease from 52 to 42

All-electric homes qualify for a three-point increase in maximum HERS Index

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The Base Code Prescriptive Compliance




IECC
INTERNATIONAL
ENERGY CONSERVATION
CODE
2021

**Base Code
(IECC 2021)**

- New construction in towns & cities not a green community
- 52 communities

Expected from BBRs:
July 2023




RESTAURANT MENU
COCKTAIL BAR

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MA Base Energy Code

The Base Energy Code is...

- The default statewide energy code
- Based on the 2021 IECC (Currently based on 2018 IECC)
- Provides a base level of energy savings
- Found in **Chapter 13: Energy Efficiency Amendments** of the MA State Building Code (CMR 780)



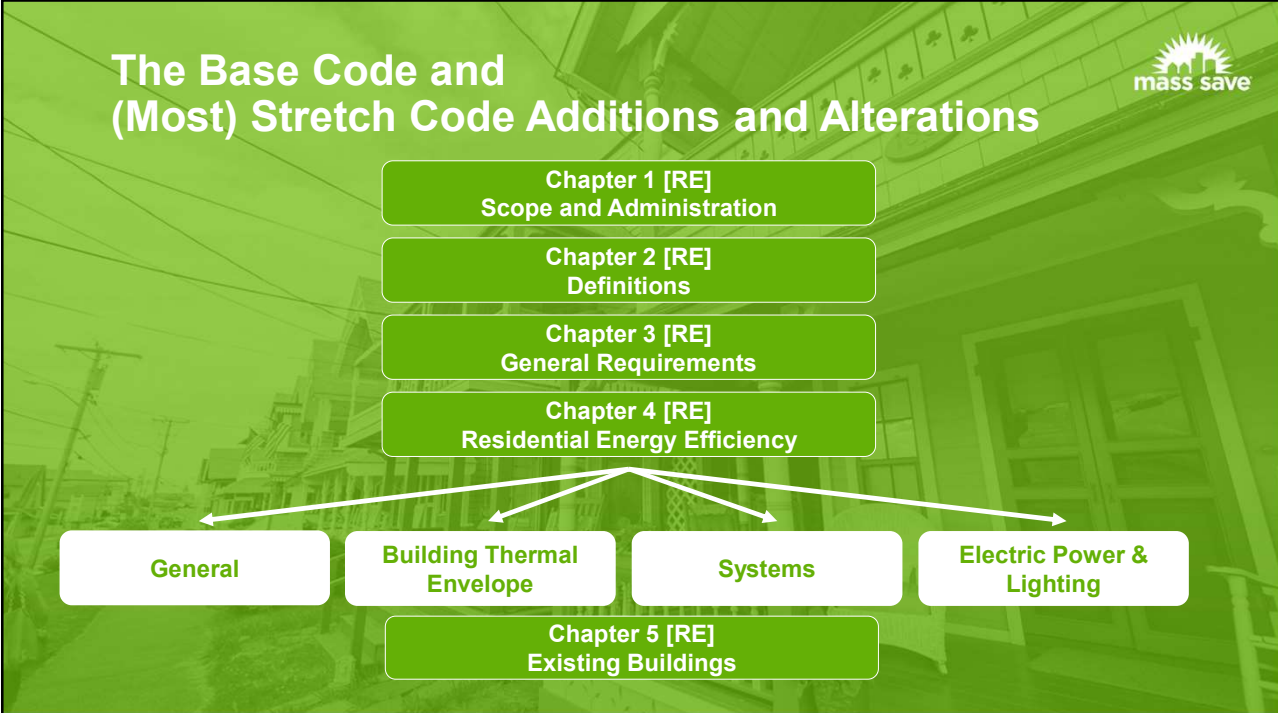
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The Base Code and (Most) Stretch Code Additions & Alterations

- The Prescriptive Path is only available for:
 - Base Code projects
 - Stretch Code additions (except additions $\geq 1,000$ sqft or $\geq 100\%$ of existing building area)
 - Stretch Code alterations (except Level 3 alterations $\geq 1,000$ sqft or $\geq 100\%$ of existing building area.)
- The provisions for these projects come from the 2021 IECC with Massachusetts amendments
- There are no changes to the available envelope compliance sub-paths: U-factor table, R-value, and Total UA Alternative (i.e., REScheck)
- Significant increases in R-values for above-grade walls and ceilings

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The Base Code and (Most) Stretch Code Additions and Alterations

**Chapter 1 [RE]
Scope and Administration**

**Chapter 2 [RE]
Definitions**

**Chapter 3 [RE]
General Requirements**

**Chapter 4 [RE]
Residential Energy Efficiency**

← ← → →

General

Building Thermal Envelope

Systems

Electric Power & Lighting

**Chapter 5 [RE]
Existing Buildings**

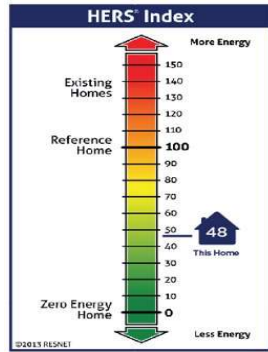
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Other Compliance Options for Base Code



Energy Rating Index Method

PHIUS or PHI



ENERGY STAR Homes certification is no longer a compliance option


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Other Compliance Options for Base Code

	2018 IECC	2021 IECC
FENESTRATION U-FACTOR	0.30	0.30
SKYLIGHT U-FACTOR	0.55	0.55
GLAZED FENESTRATION SHGC	NR	0.40
CEILING R-VALUE	49	60
WOOD FRAME WALL R-VALUE	20 or 13+5	30 or 20+5ci or 13+10ci or 0+20ci
MASS WALL R-VALUE	13/17	13/17
FLOOR R-VALUE	30	30
BASEMENT WALL R-VALUE	15/19	15ci or 19 or 13+5ci
SLAB R-VALUE & DEPTH	10, 2ft.	10ci and 4"
CRAWL SPACE WALL R-VALUE	15/19	15ci or 19 or 13+5ci

Note: These minimum R-values and maximum U-factors are NOT applicable to ERI or Passive House

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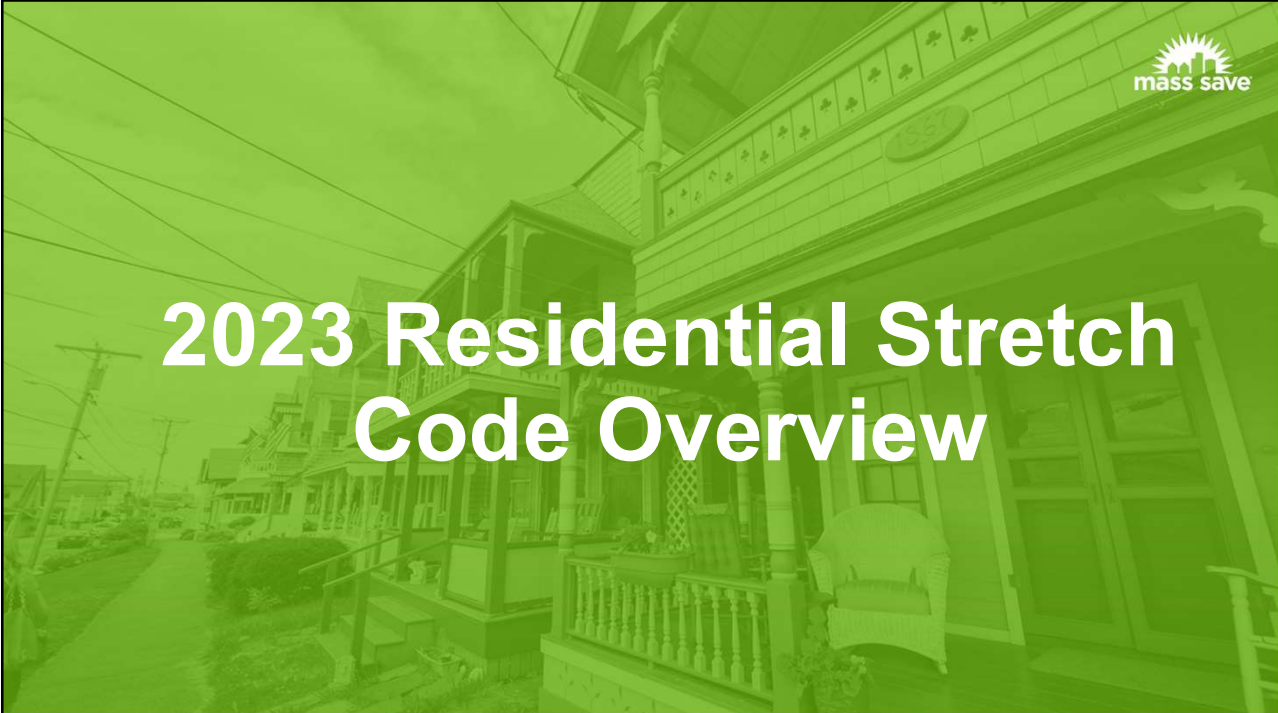


Poll Question #2

The new HERS score for mixed fuel on January 1, 2023 is?

- A. 55
- B. 45
- C. 52
- D. 42

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2023 Residential Stretch Code Overview

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Green Communities Act

- Passed by the MA Legislature and signed into law in 2009
- Requires the Program Administrators to submit EE plans every 3 years – must be approved by the Dept. of Public Utilities
- *Requires adoption of the International Energy Conservation Code and subsequent updating to the latest version within one year of its publication*
- Created the Energy Efficiency Advisory Council of DOER
- Created the Green Communities Program
 - Provides \$10 million per year statewide in technical and financial help to municipalities to promote energy efficiency and the financing, siting and construction of renewable alternative energy facilities.
 - *Municipalities must adopt the Stretch Energy Code and meet a variety of other energy efficiency policies.*

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MA Stretch Energy Code

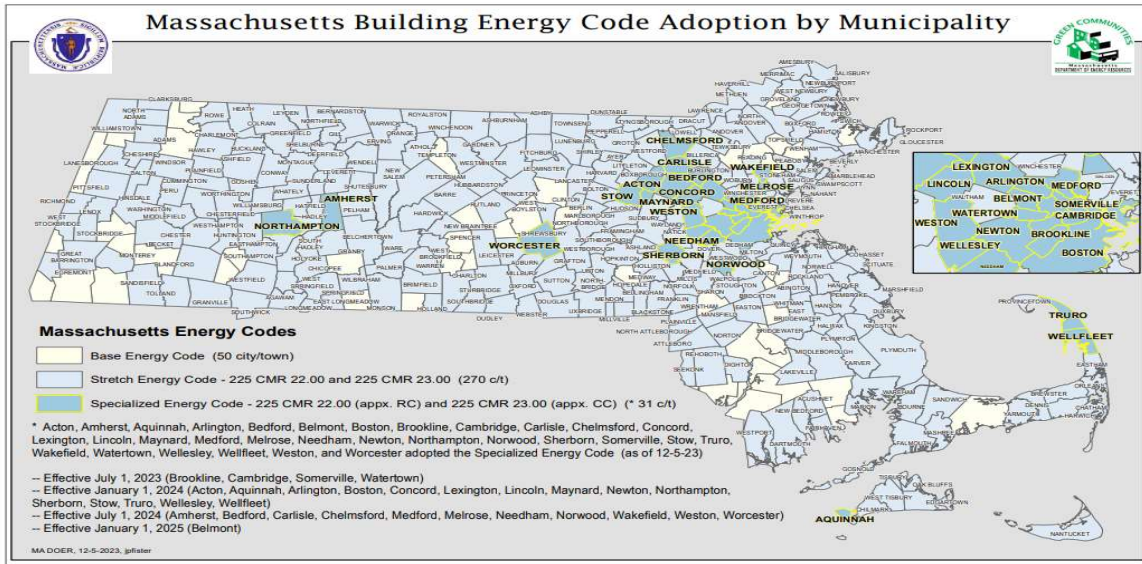
The residential Stretch Energy Code...

- Is developed by the MA Department of Energy Resources (DOER)
- Results in greater energy savings than the Base Energy Code
- Requires new homes and large additions and alterations to receive a HERS Rating or Passive House certification
- Requires compliance with 2021 IECC “mandatory” provisions (Passive House excluded)
- Is adopted at the level of the local jurisdiction



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Stretch Code Communities



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Poll Question #3


The HERS score for mixed fuel changes to 42 on what date?

- A. January 1, 2024
- B. July 1, 2024
- C. June 1, 2023
- D. July 31, 2023



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Stretch Code Updates



225 CMR 22: MASSACHUSETTS RESIDENTIAL STRETCH ENERGY CODE AND MUNICIPAL OPT-IN SPECIALIZED CODE 2023


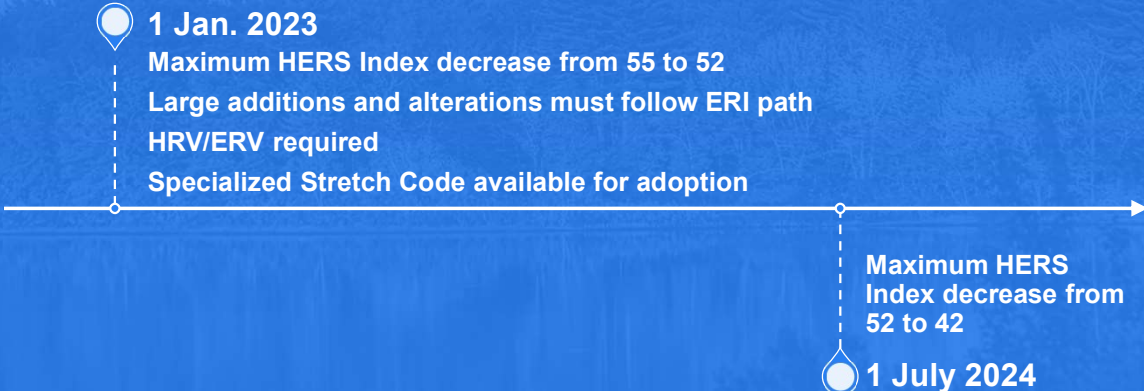
Massachusetts Stretch Code and Specialized Code for Low-Rise Residential

(Note: please see 225 CMR 23 for Commercial, Multi-family and all other construction)

The Massachusetts Stretch energy code (Stretch Code) first became available for municipal adoption in 2009 as Appendix 110.aa and then 115.aa as part of the building code in 780 CMR. In 2021 the Massachusetts legislature passed new legislation moving authority for updates to the Stretch Code to the Department of Energy Resources and 225 CMR.

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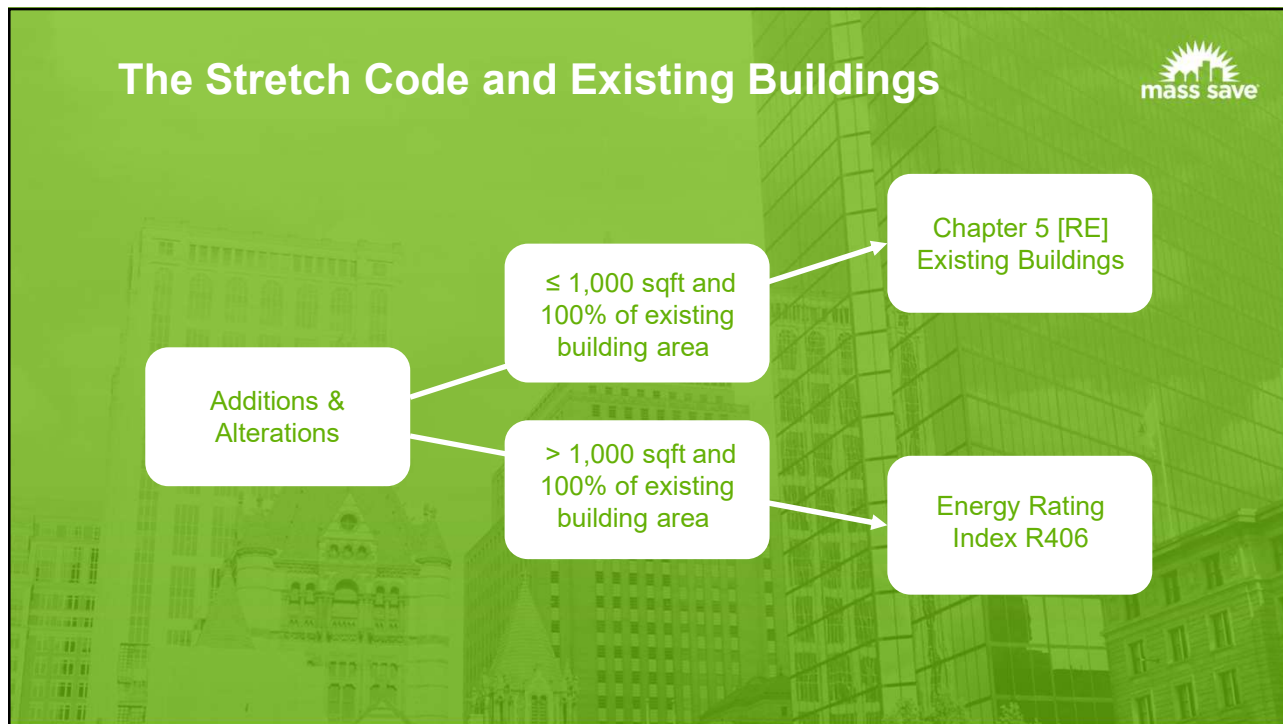
Overview

1 Jan. 2023
 Maximum HERS Index decrease from 55 to 52
 Large additions and alterations must follow ERI path
 HRV/ERV required
 Specialized Stretch Code available for adoption

1 July 2024
 Maximum HERS Index decrease from 52 to 42

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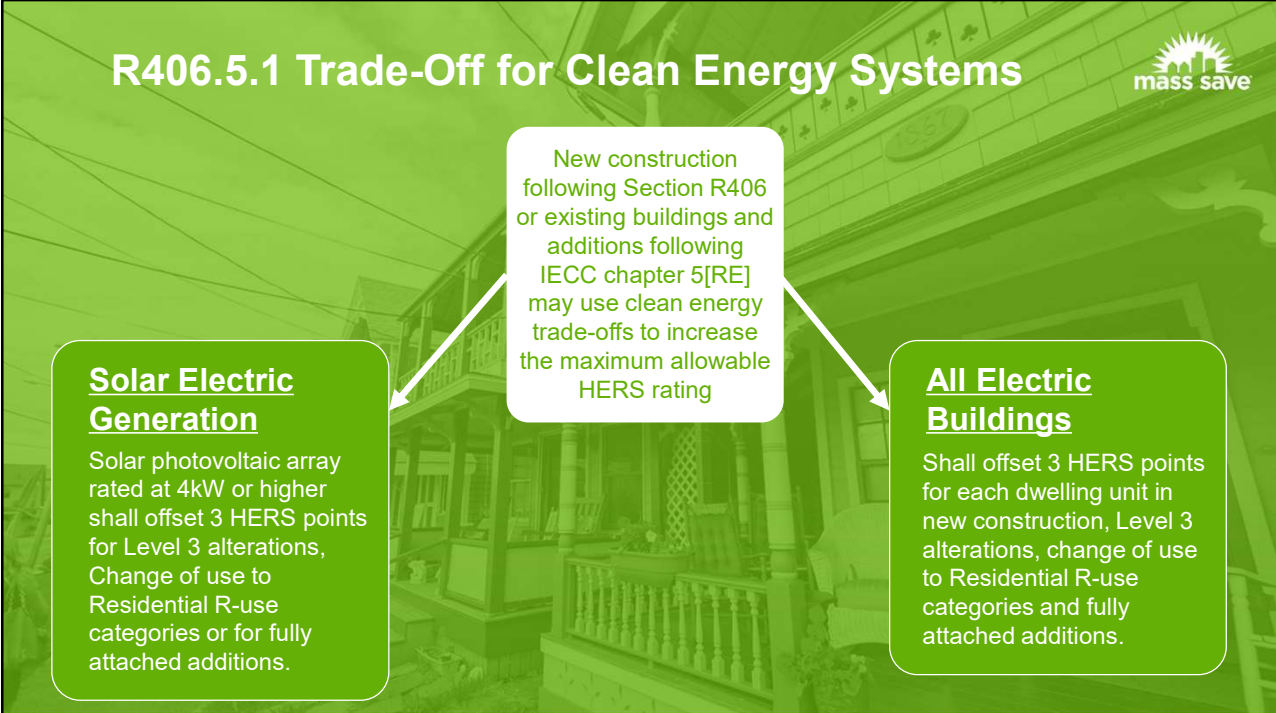
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Table R406.5 Maximum Energy Rating Index

Clean Energy Application	New Construction	New Construction	Major Alterations, Additions, and Changes, of use
	Starts January 1, 2023, until June 30, 2024	After July 1, 2024	Starts January 1, 2023
Mixed-Fuel Building	52	42	52
Solar Electric Generation*	55	42	55
All-Electric Building	55	45	55
Solar Electric* and All-Electric Building	58	45	58

***Solar Electric Generation** = Solar photovoltaic array rated at 4kW or higher

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R406.5.1 Trade-Off for Clean Energy Systems

New construction following Section R406 or existing buildings and additions following IECC chapter 5[RE] may use clean energy trade-offs to increase the maximum allowable HERS rating

Solar Electric Generation
Solar photovoltaic array rated at 4kW or higher shall offset 3 HERS points for Level 3 alterations, Change of use to Residential R-use categories or for fully attached additions.

All Electric Buildings
Shall offset 3 HERS points for each dwelling unit in new construction, Level 3 alterations, change of use to Residential R-use categories and fully attached additions.

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Poll Question #4

When does the stretch code start for residential new construction and existing residential buildings?

- A. June 30, 2023
- B. July 1, 2024
- C. January 1, 2023
- D. July 1, 2023

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Stretch Code Compliance Software

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R401 Scope Compliance Options for Stretch Code

New Construction

R401.2.2 Passive House

- The Passive House Building Certification Option requires compliance with Section R405 and R404.4.

R401.2.3 Energy Rating Index

- The Energy Rating Index (ERI) Option requires compliance with Section R406, R403.6 and R404.4.

R401.2.4 Appendix RC Opt-In Stretch Code

- Residential Buildings and dwelling units covered by this chapter may elect to comply with the requirements of IECC Appendix RC and R404 as amended.



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Poll Question #5

Energy Star V3.1 is still a compliance path for the new residential stretch code? True or False.

- A. True
- B. False



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Energy Rating Index/HERS




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**Formerly Listed
as Mandatory
Requirements**

Now in One Table

Table 406.2 Requirements – Energy Rating Index



Section	Title
General	
R401.3	Certificate
Building Thermal Envelope	
R402.1.1	Vapor retarder
R402.2.3	Eave Baffle
R402.2.4.1	Access hatches and doors
R402.2.10.1	Crawl space wall insulation installation
R402.4.1.1	Installation
R402.4.1.2	Testing
Mechanical	
R403.1	Controls
R403.3	Ducts (except R403.3.2, R403.3.3, and R403.3.6)
R403.4	Mechanical system piping insulation
R403.5.1	Heated water circulation and temperature maintenance systems
R403.5.3	Drain water heat recovery units
R403.6.1	Heat or energy recovery ventilation (HRV/ERV)
R403.7	Equipment sizing and efficiency rating
R403.8	System serving multiple dwelling units
R403.9	Snow and ice melt systems
R403.10	Energy consumption of pools and spas
R403.11	Portable spas
R403.12	Residential pools and permanent residential spas
Electrical Power and Lighting Systems	
R404.1	Lighting equipment

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Passive House

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Passive House Building Certification Option

- Projects may document compliance with either PHIUS certification or PHI certification.
- Must use the most recent version of the software for the Passive House approach

R405.2



R405.3





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PHIUS/PHI Requirements for Permit Applications

<p>Documentation WUFI Passive or other PHIUS approved software</p> <p>PHIUS</p> <ul style="list-style-type: none"> • A PHIUS 2021 (or newer) Verification Report which demonstrates project compliance • A CPHC verification report reflecting plans submitted. • Project registration from PHIUS or Design certification letter. 	<p>Documentation If using PHI Passive House software</p> <p>PHI</p> <ul style="list-style-type: none"> • A PHPP compliance report which demonstrates project compliance with current PHI performance requirements • Certified Passive House Consultant/Designer compliance report accurately reflect the plans submitted; are "based on plans" • Evidence of project registration from PHI a Certified Passive House Certifier. OR • A Design Certification Letter from a Certified Passive House Certifier.
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2021 IECC Mandatory Requirements

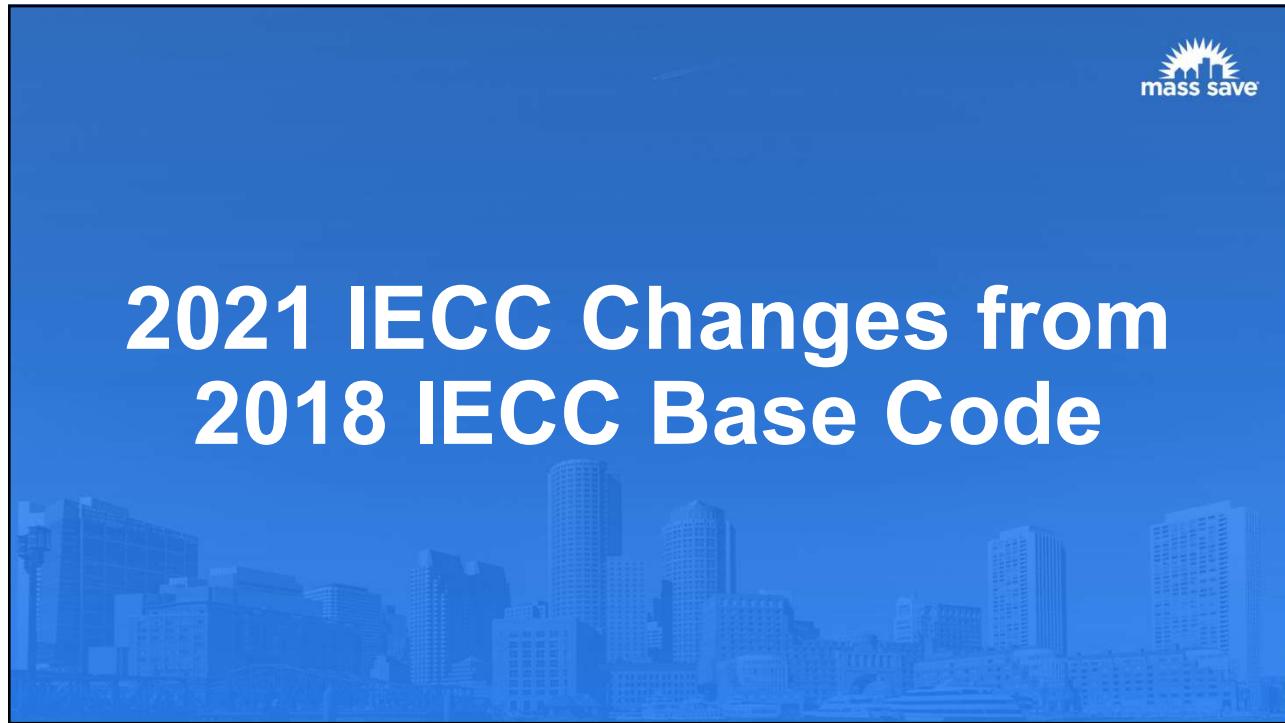
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Mandatory Requirements Overview

- Certificate (R401.3)
- Air Leakage (R402.4)
- Maximum fenestration U-factor and SHGC (R402.5)
- Controls (R403.1)
- Heat pump supplementary heat (R403.1.2)
- Duct sealing (R403.3.2)
- Duct testing (R403.3.3)
- Building cavities (R403.3.5)
- Mechanical system pipe insulation (R403.4)
- Heated water circulation and temperature maintenance system (R403.5.1)
- Hot water pipe insulation (R403.5.3)
- Mechanical ventilation (R403.6)
- Equipment sizing and efficiency rating (R403.7)
- System serving multiple dwelling units (R403.8)
- Snow melt and ice system controls (R403.9)
- Pools and permanent spas (R403.10)
- Portable spas (R403.11)
- Lighting equipment (404.1)

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Air Barrier and Insulation Criteria

**TABLE R402.4.1.1
AIR BARRIER, AIR SEALING AND INSULATION INSTALLATION***

COMPONENT	AIR BARRIER CRITERIA	INSULATION INSTALLATION CRITERIA
General requirements	A continuous air barrier shall be installed in the building envelope. Breaks or joints in the air barrier shall be sealed.	Air-permeable insulation shall not be used as a sealing material.
Ceiling/attic	The air barrier in any dropped ceiling or soffit shall be aligned with the insulation and any gaps in the air barrier shall be sealed. Access openings, drop down stairs or knee wall doors to unconditioned attic spaces shall be sealed.	The insulation in any dropped ceiling/soffit shall be aligned with the air barrier.
Walls	The junction of the foundation and sill plate shall be sealed. The junction of the top plate and the top of exterior walls shall be sealed. Knee walls shall be sealed.	Cavities within corners and headers of frame walls shall be insulated by completely filling the cavity with a material having a thermal resistance, <i>R</i> -value, of not less than <i>R</i> -3 per inch. Exterior thermal envelope insulation for framed walls shall be installed in substantial contact and continuous alignment with the air barrier.
Windows, skylights and doors	The space between framing and skylights, and the jambs of windows and doors, shall be sealed.	—
Rim joists	Rim joists shall include an exterior air barrier. ¹ The junctions of the rim board to the sill plate and the rim board and the subfloor shall be air sealed.	Rim joists shall be insulated so that the insulation maintains permanent contact with the exterior rim board. ²
Floors, including cantilevered floors and floors above garages	The air barrier shall be installed at any exposed edge of insulation.	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking. Alternatively, floor framing cavity insulation shall be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing and extending from the bottom to the top of all perimeter floor framing members.
Basement crawlspace and slab foundations	Exposed earth in unvented crawl spaces shall be covered with a Class 1 vapor retarder/air barrier in accordance with Section R402.2.10. Penetrations through concrete foundation walls and slabs shall be air sealed. Class 1 vapor retarders shall not be used as an air barrier on below-grade walls and shall be installed in accordance with Section R702.7 of the <i>International Residential Code</i> .	Crawl space insulation, where provided instead of floor insulation, shall be installed in accordance with Section R402.2.10. Conditioned basement foundation wall insulation shall be installed in accordance with Section R402.2.8.1. Slab-on-grade floor insulation shall be installed in accordance with Section R402.2.10.
Shafts, penetrations	Duct and flue shafts to exterior or unconditioned space shall be sealed. Utility penetrations of the air barrier shall be caulked, gasketed or otherwise sealed and shall allow for expansion, contraction of materials and mechanical vibration.	Insulation shall be fitted tightly around utilities passing through shafts and penetrations in the building thermal envelope to maintain required <i>R</i> -value.
Narrow cavities	Narrow cavities of 1 inch or less that are not able to be insulated shall be air sealed.	Batts to be installed in narrow cavities shall be cut to fit or narrow cavities shall be filled with insulation that on installation readily conforms to the available cavity space.

No major changes

Still required for all compliance options

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Energy Code Certificate

R401.3 Certificate

The 2021 IECC requires additional items to be listed on the certificate that is to be posted in the furnace or utility room including:

- Photovoltaic system information (if applicable)
- Energy Rating Index score with and without on-site generation) if applicable)
- The energy code edition and compliance path used

Energy Code Edition _____	Compliance Path _____
Building Thermal Envelope	
Ceiling R-value: _____	Mechanical Systems
Roof R-value: _____	Duct R-value: _____
Wall R-value: _____	Duct leakage rate: _____
Slab R-value: _____	Heating equip eff: _____
Bsmt wall R-value: _____	Cooling equip eff: _____
Crawl wall R-value: _____	Photovoltaic System
Floor R-value: _____	Capacity: _____
Window U-factor: _____	Inverter eff: _____
Window SHGC: _____	Panel tilt: _____
Air infiltration rate: _____	Panel orientation: _____
Energy Rating Index	
With onsite power: _____	W/o onsite power: _____

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R402.2.4 – Attic Hatches and Doors







Pull-down Attic Stairs can be custom built, or kits can be installed

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Air Leakage Testing

- Max ACH50 for Prescriptive Option
 - CZs 3-8 = 3.0
- Energy Rating Index (ERI) Option
 - Max ACH50 for all CZs = 5.0



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Air Leakage Testing



Air leakage per square foot of enclosure area may be used in lieu of ACH50 for:

- Attached single- and multiple-family building dwelling units
- Buildings or dwelling units $\leq 1,500$ square feet

Maximum leakage rate = 0.30 cfm per sf

DWELLING UNIT ENCLOSURE AREA. The sum of the area of ceilings, floors, and walls separating a dwelling unit's conditioned space from the exterior or from adjacent conditioned or unconditioned spaces. Wall height shall be measured from the finished floor of the dwelling unit to the underside of the floor above.

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Ducts in Floors and Exterior Walls

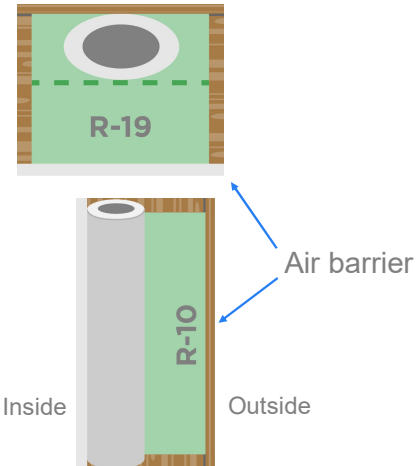
Ducts, floors, and exterior walls that are a part of the thermal envelope **can be considered in conditioned space** when certain criteria are met. *This section does NOT apply to the ERI path.*

Ducts in floors over unconditioned space

1. A continuous air barrier is installed between the unconditioned space and the duct
2. Floor insulation is installed per R402.2.7 found under Specific Insulation Requirements
3. At least R-19 insulation installed separating the duct from the unconditioned space for the full cavity width

Ducts in exterior walls

1. A continuous air barrier is installed between the unconditioned space and the duct
2. Minimum R-10 insulation separating the duct from the outside for the full cavity width
3. The remainder of the cavity is filled with insulation



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Duct Leakage Testing

Duct leakage testing is required **regardless** of duct and air handler location

- No exceptions for systems entirely within the thermal envelope

Testing standards added

- ANSI/RESNET/ICC 380 or
- ASTM E1554

Prescriptive leakage limits

- 4 cfm/100 sf with air handler installed
- 3 cfm/100 sf without air handler installed
- 8 cfm/100 sf when entire system is inside

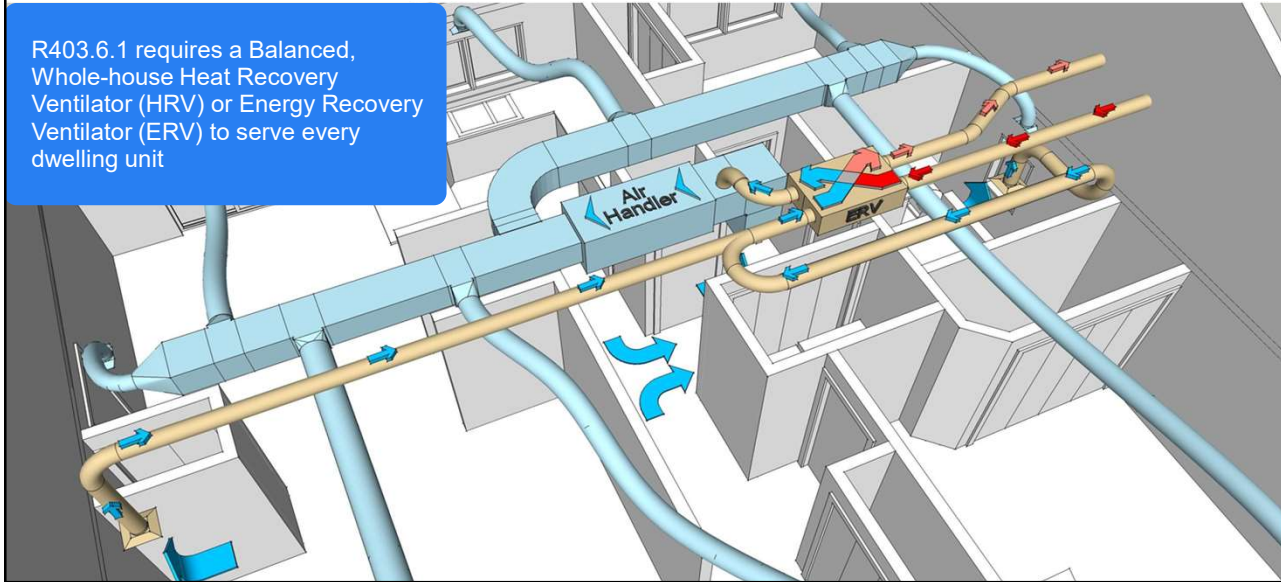
Limits do not apply to ERI path



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Mechanical Ventilation Systems

R403.6.1 requires a Balanced, Whole-house Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV) to serve every dwelling unit

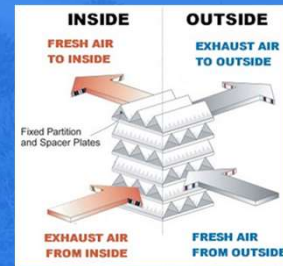


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Mechanical Ventilation Systems (HRV/ERV)



- Large Systems (>300CFM)
 - $\geq 50\%$ Enthalpy Recovery Ratio – Cooling Design Condition
 - $\geq 60\%$ Enthalpy Recovery Ratio – Heating Design Condition
- Other Systems (≤ 300 CFM)
 - $\geq 65\%$ Sensible Recovery Ratio (SRE) @ 32°F at an airflow not less than the design airflow



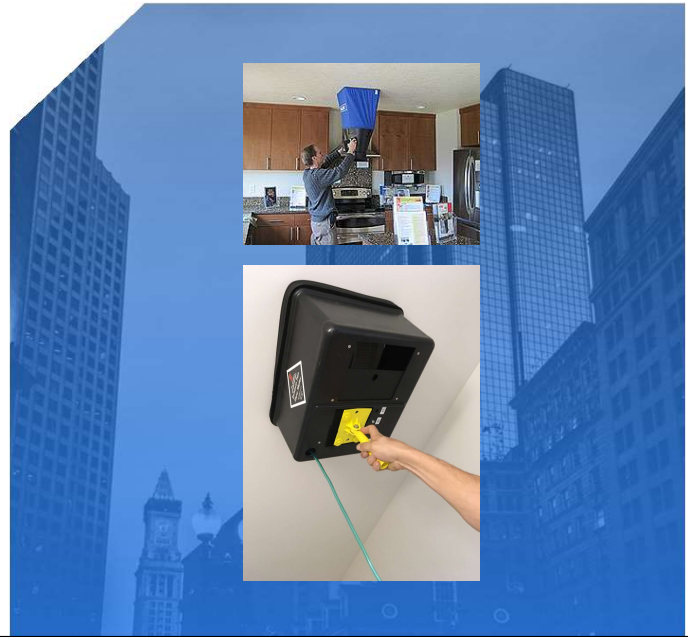
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Mechanical Ventilation System Testing

Mechanical ventilation systems must be tested and verified to achieve minimum required ventilation rate

- This includes whole-house and local ventilation systems
- Exception: Kitchen range hoods ducted to the outside with 6-inch or larger duct and not more than one 90-degree elbow or equivalent.

Testing in accordance with the manufacturer's instructions, flow hood or box, flow grid or other airflow measuring device.



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Poll Question #6

HRV/ERV Systems are balanced systems. True or False.

- A. True
- B. False



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2021 IECC Changes

Electrical Power and Lighting Systems R404.1

- 100% High Efficacy lighting is required in all sockets
- Exceptions Appliance lighting



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Exterior Lighting Power

Exterior lighting for multifamily buildings must comply with the commercial provisions of the IECC (Lighting Power Allowance).

Exceptions

- Detached two-family dwellings
- Townhouses
- Solar-powered lamps not connected to any electrical service
- Luminaires controlled by a motion sensor
- Lamps and luminaires that comply with Section R404.1 (high-efficacy light sources)

High-efficacy light sources:

- Lamps with at least 65 lumens per watt
- Luminaires with at least 45 lumens per watt



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Exterior Lighting Controls



Where total exterior lighting is > 30 W

- Manual on/off switch that is auto-off capable
 - Exception for lighting serving multiple dwelling units
- Lighting automatically shuts off when daylight is present and satisfies the lighting needs
- Override allowed, but must return to automatic within 24 hours



Microsoft stock image

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Interior Lighting Controls



Dimmers, occupant sensors, or controls built into the fixture

Exceptions:

- Bathrooms
- Hallways
- Exterior lighting fixtures
- Lighting designed for safety or security



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R401.2.5 Additional Energy Efficiency

R401.2.5

1. Buildings complying with the Prescriptive Compliance Option **must choose two** packages from R408.2. (Not applicable to stretch code)
2. Buildings electing to be *all-electric* must meet the HVAC and DHW efficiencies of R408.2.2 and R408.2.3.

R408.2

1. Enhanced envelope performance option (R408.2.1)
2. More efficient HVAC equipment performance option (R408.2.2)
3. Reduced energy use in service water-heating option (R408.2.3)
4. More efficient duct thermal distribution system option (R408.2.4)
5. Improved air sealing and efficient ventilation system option (R408.2.5)

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Appendix RB Solar-Ready Provisions

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RB101 Scope

RB101.1 General

- These provisions shall be applicable for all **R-use buildings** new construction, except additions 1,000 sqft and under.

Exceptions

- Buildings and dwelling units complying with Appendix RC: Sections RC102, Zero energy pathway or RC105, more than 70 of roof shaded



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Section RB102

General Definition Solar-Ready Zone

- A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic or solar thermal system



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Appendix RB: Solar-Ready Provisions

New in 2021:

Applies to all R-use buildings 3 stories and below shading

- The solar-ready zone shall be set back from any permanently affixed object, such as a chimney on the building that is located south, east, or west of the solar-ready zone
- Setback must be at least 2X the object's height
- Objects may include taller portions of the building, parapets, chimneys, antennas, signage, rooftop equipment, trees and roof plantings

Capped roof penetration sleeve

- A capped roof penetration sleeve shall be provided adjacent to a solar-ready zone located on a roof slope of not greater than 1 in 12.
- Sleeve shall be sized to accommodate the future photovoltaic system conduit, but not less than 1.25" in diameter

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EV Ready

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R404.4 Wiring for Electric Vehicle Charging Spaces

("EV Ready Spaces")

EV Ready Spaces shall be provided in accordance with Table R404.4

- The dedicated 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, outlet or a Society of Automotive Engineers (SAE) standard J1772 electrical connector.



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EV Ready Spaces

Table R404.4 EV Ready Space Requirements

Type of Building	Number of spaces	Wiring Requirement
1 & 2 Family Dwellings and Townhomes	At least one EV Ready Space per dwelling unit	50 Amp circuit provided
All other R-use Buildings	At least 20% of spaces	40-amp, 208/240-volt circuit with a minimum capacity of 9.6 kVA

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Appendix RC Massachusetts Municipal Opt-In Specialized Stretch Code 2023



225 CMR 22: MASSACHUSETTS RESIDENTIAL STRETCH ENERGY CODE AND MUNICIPAL OPT-IN SPECIALIZED CODE 2023

Appendix RC revise the *Appendix RC* title and notes as follows:

APPENDIX RC

MASSACHUSETTS MUNICIPAL OPT-IN SPECIALIZED STRETCH CODE 2023

RESIDENTIAL LOW-RISE BUILDING PROVISIONS

The provisions contained in this appendix together with referenced sections from the Stretch energy code constitute the Specialized opt-in code for residential low-rise buildings, and may be adopted by a city or town together with the Commercial Specialized code Appendix CC as their stretch energy code. When adopted by the local municipality, the provisions in this appendix are mandatory in combination with the IECC2021 with Massachusetts Stretch code amendments.

Use Note:

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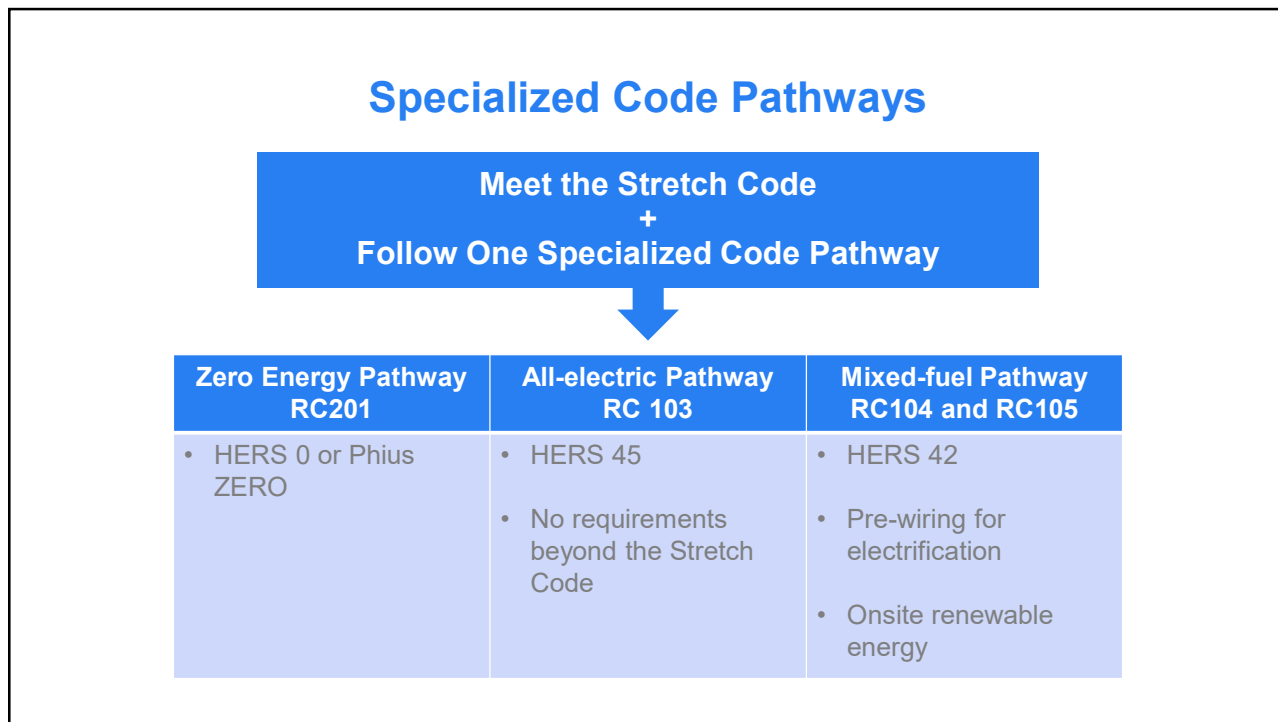
Municipal Specialized Opt-In Code

The Specialized Stretch Code...

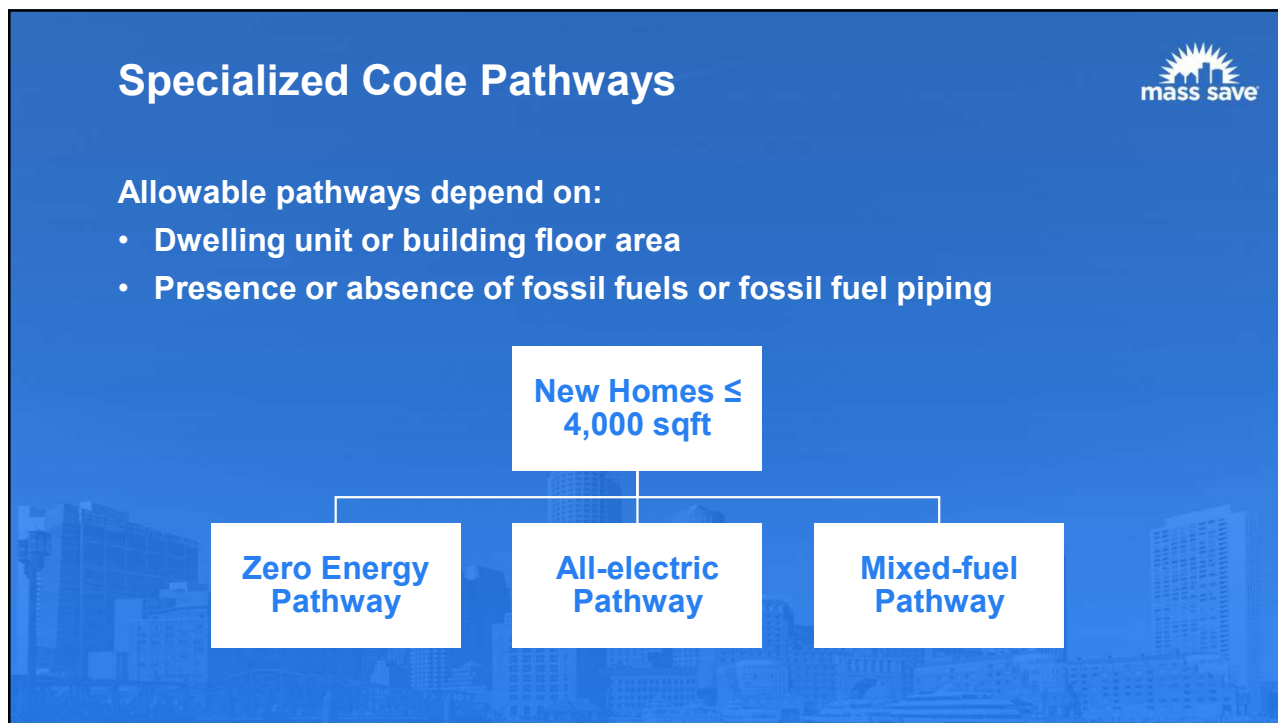
- Includes net-zero building performance standards
- Is designed to achieve MA GHG emissions limits
- Requires compliance with the Stretch Code
- Requires pre-wiring for future electrification of space and water heating for homes with fossil fuels
- Is adopted at the local level but is NOT required for participation in Green Communities



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Specialized Code Requirement Summary





TABLE 2: Residential Specialized code requirements summary by building/dwelling unit size

Building Size	Fuel Type	Minimum Efficiency	Electrification	Min. EV wiring	Renewable Generation
Dwelling units up to 4,000 sf	All Electric	HERS 45 or Phius CORE or PHI	Full	1 parking space	Optional
Dwelling units up to 4,000 sf	Mixed-fuel	HERS 42 or Phius CORE or PHI	Pre-wiring	1 parking space	Solar PV (except shaded sites)
Dwelling units > 4,000 sf	All Electric	HERS 45 or Phius CORE or PHI	Full	1 parking space	Optional
Dwelling units > 4,000 sf	Mixed-fuel	HERS 0 or Phius ZERO	Pre-wiring	1 parking space	Solar PV or other renewables
Multi-family >12,000 sf	All Electric	Phius CORE or PHI	Full	20% of spaces	Optional
Multi-family >12,000 sf	Mixed-fuel	Phius CORE or PHI	Pre-wiring	20% of spaces	Optional

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Mass Save Incentive Programs



Residential Rebates and Incentives

Rebates for appliances, heating systems and more.



www.masssave.com/en/residential/rebates-and-incentives

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Residential New Construction

Five ***incentive paths*** that cover new construction and renovation projects with multiple fuel types, multiple Program Administrators and both commercial and residential meters

Incentives are ***performance-based*** for incorporating high-performance upgrades that go beyond minimum building code requirements

Program also features a ***Passive House & All-Electric Homes workforce training initiative*** to promote workforce development and market transformation in the energy efficiency and residential building construction industry.

ICF serves as single point of contact Lead Vendor for all statewide Sponsors



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Residential New Construction



Low Rise New Construction

- 1-4 unit homes and 5+ unit multi-family ≤ 3 Stories and residential-metered heat
- Enrollment via program-approved HERS rater

All-Electric Homes

- Single Family and 2-4 unit new construction homes
- All-Electric heating, cooling, water heating and cooking
- Enrollment via program-approved HERS rater

Renovations & Additions

- 1-4 unit homes and 5+ unit multi-family ≤ 3 Stories and residential-metered heat
- Major renovations & large additions
- Enrollment via program-approved HERS rater

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Residential New Construction

High Rise New Construction

- 4+ stories and 5+ units with residential-metered heat [or] all multi-family buildings with master-metered heat
- Enrollment via program Account Manager

Passive House

- New Construction multi-family buildings of 5+ units pursuing Passive House Certification (PHI or PHIUS)
- Enrollment via program Account Manager

Passive House & All-Electric Homes Training

- Enrollment online via Energy Efficiency Learning Center
- 50% cost reimbursement upon completion of Passive House professional accreditations (PHI or PHIUS)




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Classroom Sign In

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Mass Save Classroom Sign In



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RESNET Credit

For RESNET PDHs you must complete this quiz with a score of at least 70%

<https://learn.psdconsulting.com?KeyName=B.ItmOgu4Jp-yCpkzflJ>

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Energy Code Support

Questions about the energy code?



Energy Code Support Hotline:

855-757-9717



Energy Code Support Email:

energycodesma@psdconsulting.com

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Thanks!

Massachusetts Energy Code Technical Support Program

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