

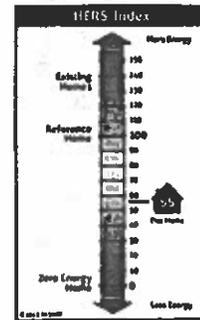
The Massachusetts Stretch Energy Code at a Glance

This document applies to new one- and two-family dwellings, townhouses, and dwelling units in R-use buildings four stories or less. Alterations, renovations, additions or repairs to existing buildings are exempt from the stretch energy code and are only required to comply with IECC Section R501 - R505 for matters relating to energy efficiency. All compliance paths must meet all mandatory requirements found on page two of this document.

Path 1

Energy Rating Index Compliance Alternative

- A **Home Energy System (HERS) Rating** must be completed by a certified HERS Rater for all new construction
- Homes without onsite renewable energy systems must achieve a **HERS Index score of 55 or less**
- Homes with onsite renewable energy systems are allowed a 5- to 12-point increase in maximum HERS Index depending on the type and number of systems. See Table R406.4 for more detail
- Documentation:
 - o Preliminary HERS report, description of energy features and a statement that the index score is "based on plans" for permit
 - o Final HERS report, completed ENERGY STAR Thermal Enclosure checklist and copy of certificate required by R401.3 for C.O



Path 2

ENERGY STAR® Certified New Homes

- The home must receive a certification from the **EPA's ENERGY STAR Certified New Homes Program, Version 3.1**.
- The program requires verification to be performed by a Home Energy System (HERS) Rater
- Documentation:
 - o Preliminary HERS report, description of energy features and a statement that the index score is "based on plans" for permit
 - o ENERGY STAR Homes certificate, Final HERS Report, completed ENERGY STAR Thermal Enclosure checklist and copy of certificate required by R401.3 for C.O



Path 3

Passive House

- The home must receive a certification from **PHIUS or PHI**
- The program requires verification by a **Certified Passive House Consultant** using PHIUS or PHI approved software
- Documentation:
 - o A WUFI or PHI report demonstrating compliance with PHIUS+2018 (or newer) or PHI requirements, a statement that the report is "based on plans" and evidence of PHIUS or PHI precertification approval
 - o An updated WUFI or PHI report demonstrating compliance with PHIUS+2018 (or newer) or PHI requirements, copy of Rater's test results, a statement that report the is "based on 'as-built' conditions



Energy Code Questions? Call 855-757-9717 or email energycodesma@psdconsulting.com



Start Here

Residential Energy Code Compliance Paths Stretch Code Communities

2015 IRC Chapter 11 as amended by 780 CMR 51.00¹



Energy Code Questions?

Email: energycodesma@psdconsulting.com
Call: 855-757-9717 (toll free)
Visit: www.masssave.com/energycode

Is your building type listed below?

- R-use building four stories or less

Yes

No

See 2018 IECC [CE]

Is it new construction?

Yes

No

See IECC [RE] Ch. 5 Existing Buildings

Mandatory requirements:

- Certificate (N1101.3)
- Air leakage (N1102.4)
- Max. fenestration U-factor & SHGC (N1102.5)
- Controls (N1103.1)
- Heat pump supplementary heat (N1103.1.2)
- Duct sealing (N1103.2)
- Duct testing (N1103.3.3)
- Building cavities (N1103.3.5)
- Mechanical system pipe insulation (N1103.4)
- Heated water circulation and temperature maintenance systems (N1103.5.1)
- Mechanical ventilation (N1103.6)
- Equipment sizing and efficiency rating (N1103.7)
- Systems serving multiple dwelling units (N1103.8)
- Snow melt and ice system controls (N1103.9)
- Pools and permanent spas (N1103.10)
- Portable spas (N1103.11)
- Lighting equipment (N1104.1)



- One option to the right

HERS Index ≤ 55?

- HERS Rating completed per the most recent version of ANSI/RESNET/ICC 301 by a RESNET-certified HERS Rater using RESNET-accredited software
- Permit application: Preliminary HERS report, description of energy features, statement that rating is based on plans
- Final inspection: Final HERS report, rater verified ENERGY STAR Thermal Enclosure checklist, copy of certificate as required by R401.3

Certified ENERGY STAR Homes v3.1

- Verification completed by a RESNET-certified HERS Rater using RESNET-accredited software
- Permit application: Preliminary HERS Report, description of energy features, statement that rating is based on plans
- Final inspection: ENERGY STAR Homes certificate, Final HERS Report, signed ENERGY STAR Thermal Enclosure Checklist, copy of certificate as required by Section R401.3

Passive House Institute (PHI or PHIUS)

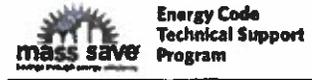
- Verification completed by a Certified Passive House Consultant using PHI or PHIUS approved software
- WUFI or PHPP compliance report, statement that report is based on plans, and evidence of PHIUS or PHI precertification
- Final Inspection: Updated WUFI or PHPP compliance report, copy of Passive House Rater's test results, statement that results are based on 'as built' conditions

¹ The provisions of IECC Chapter 4 [RE] are equivalent to IRC Chapter 11.

² If onsite renewable energy is part of the design, the maximum HERS Index may be increased by 5 to 12 points in accordance with 780 CMR Table N1106.4.

³ Additions, alterations, repairs, and change of occupancy or use shall comply with IECC Chapter 5 Existing Buildings.

LOW-RISE RESIDENTIAL NEW CONSTRUCTION
Massachusetts Energy Code 9th Edition
Permit Application Checklist*



**This checklist guides permit applicants through the main requirements of the energy code prior to permit application*

Applicant Name: _____ Applicant Phone: _____
 Project Address: _____ Date: _____

Indicate which Compliance Path is being used (R401.2)

Path 1 (Prescriptive) Path 2 (ERI and Stretch Code) Mandatory Requirements (All projects)

Path 1, Prescriptive: Sections R401 – R404 & R407: Indicate page number in plans & specifications where details are found:

	Windows & Doors	Skylight	Ceiling	Wood frame wall	Mass wall	Floor	Basement wall	Slab insulation / depth	Crawspace Wall	
<input type="checkbox"/> Option A: R-value (R402.1.2)	Maximum value			Minimum value						
	U-0.30	U-0.55	R-49	R-20 or R-13+5	R-13 / R-17	R-30	R-15 / R-19	R-10 / 2 ft.	R-15 / R-19	
<input type="checkbox"/> Option B: Equivalent U-factor (R402.1.4): Must include calculations	Maximum value									
	U-0.30	U-0.55	U-0.026	U-0.080	U-0.082	U-0.033	U-0.050	U-0.1 / 2 ft.	U-0.055	
<input type="checkbox"/> Option C: Total UA alternative (R402.1.5 plus MA amendment R402.1.5.1)	<input type="checkbox"/> REScheck™ version 4.8.5 or later									
	<input type="checkbox"/> REScheck-Web™									
<input type="checkbox"/> Additional Efficiency Packages Projects must comply with one of the following options (R407.1)	<input type="checkbox"/> 1. More Efficient HVAC performance (R407.2)									
	<input type="checkbox"/> 2. Heat or energy recovery ventilation system (R403.6.1)									
	<input type="checkbox"/> 3. High efficiency water heating or solar thermal hot water heating (R407.3)									

Path 2, Energy rating index (ERI) and Approved Alternatives (R406): MANDATORY FOR STRETCH CODE COMPLIANCE
 Documentation must be submitted prior to issuing building permit. Select one method below.

A. RESNET HERS rating with MA amendments: Submittal must include: Preliminary HERS rating with Index score less than or equal to Table R406.4, description of energy features, and a statement that the rating Index score is "based on plans".

Table R406.4

On-site Renewable energy source	Maximum HERS Index	
	New construction	Whole house renovations; additions
None	55	65
DHW	57	67
Solar Electric Generation	60	70
Clean Space Heating	60	70
Solar Electric & DHW	62	72
Solar Electric & Clean Space Heating	65	75
Solar Electric & Clean Space Heating & DHW	67	77

B. Certified ENERGY STAR® homes, version 3.1 certified (R406.1.1): Submittal must include: Preliminary HERS rating, description of energy features, and a statement that the rating Index score is "based on plans".

C. Passive House Institute US or Passive House Institute certification: Submittal must include: WUFI or PHPP compliance report which demonstrates compliance with PHIUS+2018 (or newer) or PHI performance requirements, a statement that the WUFI or PHPP results are "based on plans", and evidence of PHIUS or PHI precertification approval.

General Mandatory Requirements: APPLIES TO ALL PROJECTS

Air sealing and insulation to be installed per Table R402.4.1.1

Blower door test to be completed (R402.4.1.2) Building envelope leakage must be ≤ 3 ACH50

Ducts to be pressure tested by a HERS Rater, HERS RFI, or BPI Certified Pro. Exception: All ducts/air handlers are inside (R403.3.3.)

Boiler temperature setback control indicated in specifications (R403.2) on page # _____

Mechanical ventilation rate (R403.6): _____ CFM

Method by which ventilation rate was calculated (select one):

1. Equation 4-1 (R406.3)

2. ENERGY STAR® Homes v3.1

3. ASHRAE 62.2-2013

4. MA amendment formula

Heating and cooling load calculations (Manual J) and Equipment Selection report (Manual S) to be submitted (R403.7)

Solar Ready Zone indicated in construction documents on page # _____ (R4101.1 through 103.6 and R4103.8) Note: This requirement applies only to new construction of one- and two-family dwellings and townhouses, excluding additions, and has the following exceptions:

1. less than 600 square feet of roof area is oriented between 110° and 270° of true north;

2. buildings with a permanently installed on-site renewable energy system;

3. buildings with a solar-ready zone that is shaded for more than 70 percent of daylight hours annually.

All Paths

Mandatory requirements

- 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) (Required for Path 1 only)
- 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)

Learn More at MassSave.com/EnergyCode

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