

LOW-RISE RESIDENTIAL NEW CONSTRUCTION
Massachusetts Energy Code 9th Edition
Plan Review Checklist (v 05-02-2018)



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

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

Path 1 Path 2 Path 3 (required for Stretch Code)

Path 1. Prescriptive – Sections R401 through R404: Indicate page number in plans and specifications where details are found:

	Windows & Doors	Skylight	Ceiling	Wood frame wall	Mass wall	Floor	Basement wall	Slab insulation / depth	Crawlspace 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 based on R-values in plans.	Maximum value								
	U-0.30	U-0.55	U-0.026	U-0.060	U-0.082	U-0.033	U-0.050	U-0.55 / 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 4.6.0 or later		
							<input type="checkbox"/> REScheck-Web™		

Path 2. Simulated performance alternative section R405 and the provision of sections R401 through R404 labeled “mandatory”

Annual energy cost of proposed design not greater than annual energy cost of standard reference home per software calculations submitted by designer. Compliance report for permitting must include:	1. Building street address or other building site identification	6. An inspection checklist documenting the building component characteristics of the proposed design, the results for both the standard reference design and the proposed design, and the user inputs to the compliance software to generate the results
	2. A statement indicating that the proposed design complies with Section R405.3	
	3. A site-specific energy analysis report	
	4. The name of the individual performing the analysis and generating the report	
	5. The name and version of the compliance software tool	

Path 3. 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: Preliminary rating based on plans with Index less than or equal to Table R406.4.1

Renewable energy source	Maximum HERS Index	
	New construction	Whole house renovations; additions
None	55	65
Solar PV > 2.5 kW, OR renewable primary heating system	60	70
Solar PV, OR renewable primary heating & solar thermal DHW	62	72
Solar PV & renewable primary heating & solar thermal DHW	67	77

B. Certified ENERGY STAR® homes, version 3.1 (R406.1.2): Preliminary HERS rating based on plans is submitted.

C. Certified Passive House or Passive House US performance method: The submittal shall include a list of compliance features and a statement that the estimated specific space heat demand is based on plans, and shall include the following information:

1. Address or other identification of the residential building.	4. An inspection checklist documenting the building component characteristics of the rated design, showing results for both the ERI reference design and the rated design, and documenting all inputs entered by the user necessary to reproduce the results.
2. Name of individual completing the compliance report.	
3. Name and version of the compliance software tool.	

General Mandatory Requirements: APPLIES TO ALL PROJECTS

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

<input type="checkbox"/> Mechanical ventilation rate (R403.6): _____ CFM	Method by which ventilation rate was calculated (select one):	<input type="checkbox"/> 1. ENERGY STAR® Homes v3.1
		<input type="checkbox"/> 2. ASHRAE 62.2-2013
		<input type="checkbox"/> 3. MA amendment formula

Equipment sizing calculations submitted (Manual J and Manual S), and efficiency rating indicated in specifications (R403.7)

Solar Ready Zone indicated in construction documents on page # _____ (RB103.1 and 103.2) Note: This requirement applies only to new construction of one- and two-family dwellings and townhouses, excluding additions, and has the following exceptions:

- less than 600 square feet of roof area is oriented between 110° and 270° of true north;
- buildings with a permanently installed on-site renewable energy system;
- buildings with a solar-ready zone that is shaded for more than 70 percent of daylight hours annually.

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1. Insulation, windows, doors, skylights: One of the following alternatives must be checked									
	Windows & Doors	Skylight	Ceiling	Wood frame wall	Mass wall	Floor	Basement wall	Slab R-value / depth	Crawlspace wall
	Maximum value			Minimum value					
<input type="checkbox"/> A. Prescriptive	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"/> B. UA Equivalent	Installed materials match values submitted per Option 1B on opposite side of this form, OR Installed values match REScheck submittal								
<input type="checkbox"/> C. Annual Energy Cost	Installed values match submittal per Option 2 on opposite side of this form.								
<input type="checkbox"/> D. Energy rating index (ERI) and Approved Alternatives: <u>MANDATORY FOR STRETCH CODE COMPLIANCE</u> (One of the following options)									
<input type="checkbox"/> Certified RESNET HERS rating with MA amendments	Copy of final rating certificate with HERS Index per Table R406.4.1 and marked "confirmed" is received from rater								
<input type="checkbox"/> Certified ENERGY STAR [®] Homes, Version 3.1	Following copies are received from Rater: <ul style="list-style-type: none"> • Final ENERGY STAR[®] Homes certificate • Certified HERS rating marked "confirmed" • ENERGY STAR[®] Thermal Enclosure System Checklist signed by Rater 								
<input type="checkbox"/> Certified Passive House (or PHIUS) performance method	Copy of final report documenting compliance with PHIUS+ 2015 standards signed by certified Passive House Consultant								
<input type="checkbox"/> 2. Air barrier - Mandatory (Table R402.4.1.1)	Continuous air barrier is properly installed, and connections between components are properly sealed								
<input type="checkbox"/> 3. Air leakage testing - Mandatory (R402.4.1.2)	Blower door test results received. Leakage is not over 3 ACH50								
<input type="checkbox"/> 4. Duct sealing - Mandatory (R403.3.2)	All ducts, air handlers and filter boxes are sealed								
<input type="checkbox"/> 5. Duct testing and leakage (R403.3.3 and .4)	Duct leakage test results received. Exception if all ducts and air handlers are within the building envelope. Leakage is not over 4 cubic ft. per 100 sq. ft. of conditioned floor area. (3 cubic ft. if test was performed at rough-in and without air handler installed) <u>NOTE: Leakage may be higher if house complies using performance path (R406)</u>								
<input type="checkbox"/> 6. Duct insulation (R403.3.1)	Space conditioning ductwork in vented attics must be R-8 (or R-6 if <3" diameter). Space conditioning ductwork in all other areas must be R-6. (R-4.2 if <3" diameter.) <u>Exception: ducts or portions thereof located completely inside the building thermal envelope.</u>								
<input type="checkbox"/> 7. Building framing cavities are not used as ducts or plenums - Mandatory (R403.3.5)									
<input type="checkbox"/> 8. Hot water boiler outdoor temperature setback - Mandatory (R403.2)	Installation verified								
<input type="checkbox"/> 9. Mechanical ventilation - Mandatory (R403.6.2 as amended)	Measurement and verification documentation collected from HERS rater, HERS Inspector, or BPI Certified Professional.								
<input type="checkbox"/> 10. Lighting - Mandatory (R404.1)	Minimum 75% of light bulbs in permanent fixtures must be high efficacy (e.g., fluorescent or LED) or minimum 75% of permanently installed fixtures must contain only high-efficacy lamps.								
<input type="checkbox"/> 11. Certificate - Mandatory (R401.3)	Permanent certificate listing insulation R-values, fenestration U-factors, duct R-values, blower door and duct leakage test results, and final HERS Index Score (when applicable), is posted in the space where the heating system is located or a utility room								

Notes: