

# Massachusetts Energy Code Residential New Construction Permit Application and Plan Review Checklist

Version 1.0

\*This page is to be completed by the permit applicant and submitted to the local building department with other required permit application documents.

Applicant Name: \_\_\_\_\_ Applicant Phone: \_\_\_\_\_

Project Address: \_\_\_\_\_ Date: \_\_\_\_\_

## Select a compliance path (R401.2)

<input type="checkbox"/> Path 1 (Prescriptive)	<input type="checkbox"/> Path 2 (ERI and Stretch Code)	<input checked="" type="checkbox"/> Mandatory Requirements (All projects)
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<b>Path 1. Prescriptive: Sections R401 – R404 &amp; R407: Indicate page number in plans &amp; specifications where details are found:</b> _____									
	Windows & Doors	Skylights	Ceilings	Wood frame walls	Mass walls	Floors	Basement walls	Slab insulation / depth	Crawlspace walls
<input type="checkbox"/> <b>Option A:</b> 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"/> <b>Option B:</b> Equivalent U-factor (R402.1.4): Must include calculations	Maximum value								
	U-0.30	U-0.55	U-0.026	U-0.060	U-0.082	U-0.033	U-0.050	U-0.1 / 2 ft.	U-0.055
<input type="checkbox"/> <b>Option C:</b> Total UA alternative (R402.1.5 plus MA amendment R402.1.5.1)							<input type="checkbox"/> REScheck™ version 4.6.5 or later		
							<input type="checkbox"/> REScheck-Web™		
<b>+ Additional Efficiency Packages (R407.1)</b> All prescriptive projects must comply with one of the options to the right. Select one.				<input type="checkbox"/> More Efficient HVAC performance (R407.2)					
				<input type="checkbox"/> Heat or energy recovery ventilation system (R403.6.1)					
				<input type="checkbox"/> High efficiency water heating or solar thermal hot water heating (R407.3)					

<b>Path 2. Energy rating index (ERI) and Approved Alternatives (R406): <u>MANDATORY FOR STRETCH CODE</u></b> (optional path in non-stretch communities). Documentation must be submitted prior to issuing building permit. Select one method below.							
<input type="checkbox"/>	<b>Option A. RESNET HERS rating with MA amendments: Submittal must include:</b> 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”.						
<b>Table R406.4</b>							
<table border="1" style="margin: auto; border-collapse: collapse;"> <tr> <th colspan="2" style="padding: 5px;">Maximum HERS Index</th> </tr> <tr> <th style="padding: 5px;">New construction</th> <th style="padding: 5px;">Whole house renovations; additions</th> </tr> <tr> <td style="text-align: center; padding: 5px;">55</td> <td style="text-align: center; padding: 5px;">65</td> </tr> </table>		Maximum HERS Index		New construction	Whole house renovations; additions	55	65
Maximum HERS Index							
New construction	Whole house renovations; additions						
55	65						
Note: Higher HERS Index scores are permitted for projects that include renewable energy generation. See MA 780 CMR Chapter 11 Table R406.4							
<input type="checkbox"/>	<b>Option B. Certified ENERGY STAR® homes, version 3.1 (R406.1.1): Submittal must include:</b> Preliminary HERS rating, description of energy features, and a statement that the rating index score is “based on plans”.						
<input type="checkbox"/>	<b>Option C. Passive House Institute US or Passive House Institute certification: Submittal must include:</b> 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.						

<b>General Mandatory Requirements (ALL PROJECTS):</b>	
<input type="checkbox"/>	<b>Air sealing and insulation to be installed per Table R402.4.1.1</b>
<input type="checkbox"/>	<b>Blower door test to be completed (R402.4.1.2)</b> Building envelope leakage must be ≤ 3 ACH50
<input type="checkbox"/>	<b>Ducts to be pressure tested</b> by a HERS Rater, HERS RFI, or BPI Certified Pro. Exception: All ducts/air handlers are inside (R403.3.3.)
<input type="checkbox"/>	<b>Boiler temperature setback control indicated in specifications (R403.2) on page #</b> _____
<input type="checkbox"/>	<b>Mechanical ventilation rate (R403.6):</b> _____ CFM Method by which ventilation rate was calculated (select one): <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Equation 4-1 (R406.3)</li> <li><input type="checkbox"/> 2. ENERGY STAR® Homes v3.1</li> <li><input type="checkbox"/> 3. ASHRAE 62.2-2013</li> <li><input type="checkbox"/> 4. MA amendment formula</li> </ul>
<input type="checkbox"/>	<b>Heating and cooling load calculations (Manual J) and Equipment Selection report (Manual S) to be submitted (R403.7)</b>
<input type="checkbox"/>	<b>Solar Ready Zone indicated in construction documents on page #</b> _____ <b>(RA101.1 through 103.6 and RA103.8)</b> Note: This requirement applies only to new construction of one- and two-family dwellings and townhouses, excluding additions, and has the following exceptions: <ol style="list-style-type: none"> <li>1. less than 600 square feet of roof area is oriented between 110° and 270° of true north;</li> <li>2. buildings with a permanently installed on-site renewable energy system;</li> <li>3. buildings with a solar-ready zone that is shaded for more than 70 percent of daylight hours annually.</li> </ol>

## Massachusetts Energy Code Residential New Construction Inspection and Final Documentation Checklist

\*This page may be used by the local building department to assist in performing energy code inspections and collecting required documentation.

Applicant Name \_\_\_\_\_ Applicant Phone \_\_\_\_\_

Project Address \_\_\_\_\_ Permit number \_\_\_\_\_

Reviewed by: \_\_\_\_\_ Date \_\_\_\_\_

Path 1. Prescriptive: Sections R401 – R404 & R407 (Not applicable to Stretch Code Communities)									
	Windows & Doors	Skylights	Ceilings	Wood frame walls	Mass walls	Floors	Basement walls	Slab R-value/ depth	Crawlspace walls
	Maximum value			Minimum value					
<input type="checkbox"/> <b>Option A. R-Value</b>	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>Option B. Equivalent U-factor</b>	If Option 1B was selected on the reverse side of this form, the installed materials match provided calculations								
<input type="checkbox"/> <b>Option C. Total UA Alternative</b>	If Option 1C was selected on the reverse side of this form, installed values match the REScheck certificate								
<input type="checkbox"/> <b>Additional Efficiency Packages</b>	The additional efficiency package selected on the reverse side of this form has been installed								

Path 2. Energy rating index (ERI) and Approved Alternatives (R406): <b>MANDATORY FOR STRETCH CODE</b> (optional path in non-stretch communities). Verify the permit applicant has submitted documentation for one of the following options.	
<input type="checkbox"/> <b>Option A. Certified RESNET HERS rating with MA amendments</b>	<ul style="list-style-type: none"> <li>Final HERS certificate indicating HERS rating index score complying with Table R406.4</li> <li>HERS rater verified ENERGY STAR Thermal Enclosure Checklist</li> <li>Copy of certificate required by R401.3 listing the final HERS Index score</li> </ul>
<input type="checkbox"/> <b>Option B. Certified ENERGY STAR® Homes, Version 3.1</b>	<ul style="list-style-type: none"> <li>Final ENERGY STAR® Homes certificate</li> <li>Certified final HERS rating</li> <li>ENERGY STAR® Thermal Enclosure System Checklist signed by Rater</li> <li>Copy of certificate required by R401.3 listing the final HERS Index score</li> </ul>
<input type="checkbox"/> <b>Option C. Certified Passive House (or PHIUS) performance method</b>	<ul style="list-style-type: none"> <li>Updated WUFI or PHPP compliance report demonstrating compliance with PHIUS+2018 (or newer) or PHI performance requirements</li> <li>Passive House Rater's test results</li> <li>Statement that the WUFI or PHPP results are "based on 'as built' conditions, incorporating the relevant test results and documented changes to equipment, materials, and assemblies that impact performance"</li> </ul>

General Mandatory Requirements (ALL PROJECTS). Verify the following measures have been installed and testing documentation has been received.	
<input type="checkbox"/>	<b>1. Air barrier - Mandatory (Table R402.4.1.1)</b> – Continuous air barrier is properly installed, and connections between components are properly sealed
<input type="checkbox"/>	<b>2. Air leakage testing - Mandatory (R402.4.1.2)</b> – Blower door test verification form received. Leakage is not over 3 ACH50
<input type="checkbox"/>	<b>3. Duct sealing - Mandatory (R403.3.2)</b> – All ducts, air handlers and filter boxes are sealed
<input type="checkbox"/>	<b>4. Duct testing and leakage (R403.3.3 and .4)</b> – Duct leakage test verification form received. <i>Exception: All ducts and air handlers are within the building envelope.</i> Leakage is not over <b>4 cubic ft. per 100 sq. ft.</b> of conditioned floor area. (3 cubic ft. if test was performed at rough-in and without air handler installed) <i>NOTE: Leakage may be higher if house complies using the ERI Path.</i>
<input type="checkbox"/>	<b>5. Duct insulation (R403.3.1)</b> – Space conditioning ductwork in vented attics must be R-8 (or R-6 if <3" diameter). Space conditioning ductwork in all other unconditioned spaces must be R-6. (R-4.2 if <3" diameter.)
<input type="checkbox"/>	<b>6. Building framing cavities are not used as ducts or plenums - Mandatory (R403.3.5)</b>
<input type="checkbox"/>	<b>7. Hot water boiler outdoor temperature setback - Mandatory (R403.2)</b> – Installation verified
<input type="checkbox"/>	<b>8. Mechanical ventilation - Mandatory (R403.6.2 as amended)</b> – Airflow testing documentation collected from HERS rater, HERS Inspector, or BPI Certified Professional.
<input type="checkbox"/>	<b>9. Lighting - Mandatory (R404.1)</b> – Minimum 90% of the permanently installed lighting fixtures must contain only high-efficacy lamps (e.g., fluorescent or LED)
<input type="checkbox"/>	<b>10. Certificate - Mandatory (R401.3)</b> – 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 on a wall in the space where the heating system is located, utility room, or other approved location inside the building

**Notes:**