

## **2017 Mass Save New Construction rebate program prescriptive air sealing requirements.**

As specified in the rebate program Terms and Conditions (application), the home must be compliant with two sections of the Energy Star Rater Checklist- section 2 and section 4 (see next page)

These are all common-sense air sealing details. The 2015 IECC building code requires that the home achieves an overall airtightness result of <3 ACH50.

If you follow these details and ensure all contractors are on board with the air barrier strategy, then you should pass this with flying colors.

As efficient building practices are now mainstream, we assume that you understand these construction details.

However, we are available for **any** questions you have, so **ask early in the construction process (at design phase is best!)** and we'll be happy to support your air sealing strategy with our expertise.

The most common missed or incorrectly executed items are:

- Walls 2.2 - air barrier behind shower units, before sheetrock goes up
- Foundation sill 4.3 - airtight gasket under bottom plate
- Attic Flat 4.5 - interior wall top plates are sealed with foam or caulk
- Attic Hatch 4.10 - attic hatch insulated and gasketed to be made airtight.

<b>2. Fully-Aligned Air Barriers</b> <sup>5</sup> At each insulated location below, a complete air barrier is provided that is fully aligned as follows:				
<b>Ceilings:</b> At interior or exterior horizontal surface of ceiling insulation in Climate Zones 1-3; at interior horizontal surface of ceiling insulation in Climate Zones 4-8. Also, at exterior vertical surface of ceiling insulation in all climate zones (e.g., using a wind baffle that extends to the full height of the insulation in every bay or a tabbed baffle in each bay with a soffit vent that prevents wind washing in adjacent bays). <sup>6</sup>				
2.1 Dropped ceilings / soffits below unconditioned attics, and all other ceilings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Walls:</b> At exterior vertical surface of wall insulation in all climate zones; also at interior vertical surface of wall insulation in Climate Zones 4-8 <sup>7</sup>				
2.2 Walls behind showers, tubs, staircases, and fireplaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3 Attic knee walls and skylight shaft walls <sup>8</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4 Walls adjoining porch roofs or garages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5 Double-walls and all other exterior walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
<b>Floors:</b> At exterior vertical surface of floor insulation in all climate zones and, if over unconditioned space, also at interior horizontal surface including supports to ensure alignment. See Footnotes 10 & 11 for alternatives. <sup>9, 10, 11</sup>				
2.6 Floors above garages, floors above unconditioned basements or crawlspaces, and cantilevered floors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7 All other floors adjoining unconditioned space (e.g., rim / band joists at exterior wall or at porch roof)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>4. Air Sealing (Unless otherwise noted below, "sealed" indicates the use of caulk, foam, or equivalent material)</b>				
4.1 Ducts, flues, shafts, plumbing, piping, wiring, exhaust fans, & other penetrations to unconditioned space sealed, with blocking / flashing as needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
4.2 Recessed lighting fixtures adjacent to unconditioned space ICAT labeled and gasketed. Also, if in insulated ceiling without attic above, exterior surface of fixture insulated to $\geq R-10$ in CZ 4-8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Above-grade sill plates adjacent to conditioned space sealed to foundation or sub-floor. Gasket also placed beneath above-grade sill plate if resting atop concrete / masonry & adjacent to cond. space <sup>25,26</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4 Continuous top plate or blocking is at top of walls adjoining unconditioned space, and sealed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Drywall sealed to top plate at all unconditioned attic / wall interfaces using caulk, foam, drywall adhesive (but not other construction adhesives), or equivalent material. Either apply sealant directly between drywall and top plate or to the seam between the two from the attic above.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6 Rough opening around windows & exterior doors sealed <sup>27</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
4.7 Walls that separate attached garages from occupiable space sealed and, also, an air barrier installed and sealed at floor cavities aligned with these walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8 In multifamily buildings, the gap between the common wall (e.g. the drywall shaft wall) and the structural framing between units sealed at all exterior boundaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.9 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially air-tight with weatherstripping or equivalent gasket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.10 Attic access panels, drop-down stairs, & whole-house fans equipped with durable $\geq R-10$ cover that is gasketed (i.e., not caulked). Fan covers either installed on house side or mechanically operated. <sup>28</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Effective for homes permitted <sup>29</sup> starting 07/01/2016

Revised 09/15/2015

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Other resources:

A detailed photo rich guide to air sealing by [Energy Star can be downloaded here.](#)