

# 2023 Residential Massachusetts Stretch Code Frequently Asked Questions

## EXISTING BUILDINGS

### Additions

**Question:** When is a HERS Rating required for an addition?

**Answer:** A HERS Rating is required where the total added conditioned floor area is greater than 1,000 square feet or the addition exceeds 100% of the existing dwelling unit conditioned floor area.

**Code Reference:** 2023 Massachusetts Stretch Energy Code R502.1.1

**Question:** If multiple additions are made to the same dwelling unit and each is under 1,000 square feet, but the total adds up to more than 1,000 square feet, is a HERS Rating required?

**Answer:** Yes, the floor area of multiple additions being made as part of the same permitted project should be treated cumulatively. When two or more additions add up to greater than 1,000 square feet, a HERS Rating is required. (Note: If two additions are made to a home but at quite different points in time, and a permit is closed on one addition before a new permit is opened for a second addition, then floor area is not treated cumulatively.)

**Code References:** 2023 Massachusetts Stretch Energy Code R502.1.1 with interpretation based on personal communication with the Massachusetts Department of Energy Resources

**Question:** Is the floor area trigger for when a HERS Rating is required for additions based on *conditioned* floor area?

**Answer:** Yes, only *conditioned* floor area is included when determining whether the addition requires a HERS Rating.

**Code References:** 2023 Massachusetts Stretch Energy Code R502.1.1 with interpretation based on personal communication with the Massachusetts Department of Energy Resources

**Question:** Can a HERS Rating be performed on an addition?

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**Answer:** It depends. HERS Ratings may only be performed on *dwelling units*, so if the addition contains areas for living, sleeping, eating, cooking, and sanitation, a HERS Rating may be performed on the addition. If the addition is not a dwelling unit, the HERS Rating must be performed on the existing home plus the addition.

**Code References:** 2023 Massachusetts Stretch Energy Code R502.1.1, ICC/RESNET Standard 301.

**Question:** Is a blower door test required for additions that trigger the requirement for a HERS Rating?

**Answer:** Yes. Blower door testing is a required element of a HERS Rating.

**Code References:** 2023 Massachusetts Stretch Energy Code R502.1.1, ICC/RESNET Standard 301.

**Question:** Is a blower door test required for additions that do not trigger the requirement for a HERS Rating and are allowed to follow the prescriptive path?

**Answer:** In most cases, blower door testing is not required because passing the test would require performing work on the existing building. IECC Chapter 5 states that additions must comply as they relate to new construction “without requiring the unaltered portion of the existing building or building system to comply.” However, where feasible and practical, a code official could require testing of the addition alone.

**Code References:** IECC R502.1 and R502.3.1

**Question:** Is EV readiness required for additions or only for new construction?

**Answer:** EV readiness is only required for new construction as the alterations section in Chapter 5 makes no reference to the EV ready section.

**Code Reference:** 2023 Massachusetts Stretch Energy Code R502 and R404.4

**Question:** Is solar readiness required for additions?

**Answer:** Solar readiness is required for additions that are 1,000 square feet or greater. Additions that are less than 1,000 square feet are exempt.

**Code Reference:** 2023 Massachusetts Stretch Energy Code Appendix RB101.1

## Alterations

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**Question:** If an alteration meets the definition of a Level 3 alteration under the IEBC or an extensive alteration under IRC Appendix AJ, but does not exceed 1,000 square feet or 100% of the existing floor area, is a HERS Rating required? Likewise, if an alteration does not meet the definition of a Level 3 alteration, but exceeds 1,000 square feet or 100% of the existing floor area, is a HERS Rating required?

**Answer:** No. A HERS Rating is only required for alterations that meet the definition of a Level 3 alteration under the IEBC or an *extensive alteration* under IRC Appendix AJ *and* exceed 1,000 square feet or 100% of the existing floor area.

**Code References:** 2023 Massachusetts Stretch Energy Code R503.1.5, International Existing Buildings Code 604.1, International Residential Code AJ109.3

**Question:** Is the floor area trigger for when a HERS Rating is required for alterations based on *conditioned* floor area?

**Answer:** Yes, only *conditioned* floor area is included when determining whether the alteration requires a HERS Rating.

**Question:** Is a blower door test required for alterations that trigger the requirement for a HERS Rating?

**Answer:** Yes. Blower door testing is a required element of a HERS Rating.

**Code References:** 2023 Massachusetts Stretch Energy Code R503.1.5, ICC/RESNET Standard 301.

**Question:** Is a blower door test required for alterations that do *not* trigger the requirement for a HERS Rating and therefore are allowed to follow the prescriptive path?

**Answer:** In most cases, blower door testing is not required because passing the test would require performing work on the existing building. IECC Chapter 5 states that additions must comply as they relate to new construction “without requiring the unaltered portion of the existing building or building system to comply.”

**Code References:** IECC R503.1 and R503.1.1

**Question:** For an alteration that does not trigger the requirement for a HERS Rating, is the project required to meet the prescriptive wall insulation R-value requirement (R-30 cavity-only or R-20&5ci or R-13&10ci or R-20ci)<sup>1</sup>?

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<sup>1</sup> The abbreviation “ci” stands for continuous insulation. Where two R-values are given, the first value is for cavity insulation and the second value is for continuous insulation. For example, R-20&5ci means R-20 cavity insulation and R-5 continuous insulation.

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**Answer:** No. Cavities exposed during an alteration are required to be filled with insulation, but there is no minimum R-value requirement. The same exception applies to all other envelope assembly types.

**Code Reference:** 2021 IECC Section 503.1.1, Exception 2.

**Question:** When installing a new, ducted heating or cooling system in an existing home, is duct leakage testing required?

**Answer:** Yes. All the requirements of R403 (Systems) apply to new heating and cooling systems installed in existing homes, including duct leakage testing. The only exception to duct leakage testing for alterations is for ducts that are extended from an existing heating or cooling system to an addition.

**Code References:** 2021 IECC R502.3.2 Heating and cooling systems.

**Question:** Is EV readiness required for alterations?

**Answer:** No. EV readiness is only required for new construction as *Section R503 – Alterations* makes no reference to the EV ready section.

**Code Reference:** 2023 Massachusetts Stretch Energy Code R503 and R404.4

**Question:** Is solar readiness required for alterations?

**Answer:** No. Solar readiness is not required for alterations. The solar-ready provisions apply only to new construction as *Section R503 – Alterations* makes no reference to *Appendix RB Solar Ready Provisions*. In addition, Appendix RB states that, “these provisions shall be applicable for new construction, except additions under 1,000 sq ft.”

**Code Reference:** 2023 Massachusetts Stretch Energy Code R503 and Appendix RB101.1

## ELECTRIC VEHICLE READINESS

**Question:** Under the Massachusetts Stretch Code, what does it mean for a parking space to be electric vehicle (EV) ready?

**Answer:** For a parking space to meet the *EV Ready Spaces* requirement, the space must be equipped with a dedicated electrical circuit. This means there needs to be adequate electric service capacity and wiring with a termination within 6 feet of the space. The dedicated branch circuit must be identified in

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the electrical panel or subpanel directory as "EV READY." The circuit must terminate in either a NEMA receptacle (standard outlet) or a Society of Automotive Engineers (SAE) Standard SAE J1772 electrical connector for servicing electric vehicles. The termination must also be marked as "EV READY".

**Code Reference:** 2023 Massachusetts Stretch Energy Code R404.4

**Question:** What if the house does not have a garage, where is the circuit supposed to terminate?

**Answer:** The code requires the circuit to terminate within 6 feet of the parking space, regardless of whether there is a garage. The code does not contain termination requirements beyond the types of allowable termination. If a house does not have a garage, the electrician might consider terminating the circuit with a weatherproof outdoor receptacle on the side of the home, embedded in parking area pavement, or on a post near the space.

**Code Reference:** 2023 Massachusetts Stretch Energy Code R404.4

**Question:** Does EV readiness apply to buildings that have no onsite parking?

**Answer:** In the absence of onsite parking, EV readiness is not required. Exception 1 of R404.4 states that, "In no case shall the number of required EV Ready Spaces be greater than the number of parking spaces installed." Further, exception 2 states that, "This requirement will be considered met if all spaces which are not EV Ready are separated from the premises by a public right-of-way."

**Code Reference:** 2023 Massachusetts Stretch Energy Code R404.4, exceptions 1 and 2.

**Question:** Many lake houses have parking spaces located across the street from the main structure. Is electric vehicle readiness required in that case?

**Answer:** Exception 2 of R404.4 states that, "This requirement will be considered met if all spaces which are not EV Ready are separated from the premises by a public right of way."

**Code Reference:** 2023 Massachusetts Stretch Energy Code R404.4, exception 2.

**Question:** Who is responsible for enforcing the regulations regarding wiring requirements? Is it the local building inspector or the electrical inspector?

**Answer:** Decisions regarding enforcement are made at the local level. DOER believes that the building inspector should confirm that the wiring is present, while the electrical inspector ensures that the wiring has been installed to meet the specifications of electric vehicle readiness and the *Massachusetts Electrical Code*.

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**Code Reference:** Personal communication with the Massachusetts Department of Energy Resources (DOER)

## SOLAR READY PROVISIONS

**Question:** If the building design does not allow for the required solar-ready zone area due to obstacles such as vents, chimneys, and roof-mounted equipment, does the project still need to comply with the solar-ready provisions?

**Answer:** Yes. The stretch code adopts the IECC 2021 Appendix RB without amendments, and the appendix states that solar-ready zones shall be free from obstructions. In addition, a section on shading requires that the solar-ready zone be set back by a certain distance from any object on the building or site that will shade the zone. The code does not provide exceptions for rooftops with obstructions that interfere with the free area required for a solar-ready zone, so in these cases, a redesign is required. Designers should consider this requirement early in the design process.

**Code Reference:** *2023 Massachusetts Stretch Energy Code* Appendix RB103.4

**Question:** Is there a minimum solar electric system size for a home to meet the solar-ready provisions?

**Answer:** No. *Appendix RB Solar-ready Provisions* does not contain any requirements related to solar equipment, and as such, does not specify a minimum solar system capacity in kilowatts. The only size-related requirement is the area in square feet of the designated solar-ready zone. For homes with at least 600 square feet of roof area oriented between 110 and 270 degrees of true north, the solar ready zone must be at least 300 square feet. For townhomes with a total floor area of 2,000 square feet or less, the solar ready zone must be at least 150 square feet. The solar-ready zone may be split into multiple zones, but individual zone areas must be at least 80 square feet in area and at least 5 feet wide.

**Code Reference:** Appendix RB Section RB103.3

**Question:** Do the Solar-ready Provisions require conduit or wiring to be installed from the solar-ready zone to the electrical panel?

**Answer:** No. The Solar-ready Provisions require the construction documents to indicate pathways for routing conduit or plumbing from the solar-ready zone to the electrical panel or service hot water system, but no conduit, wiring, or plumbing are required to be installed. In addition, reserved space in

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the electrical panel labeled as “for future solar electric” is required, and for flat roofs, a capped roof penetration must be installed.

**Code Reference:** 2021 IECC Appendix RB RB103.1, RB103.6, RB103.8, and RB103.9

**Question:** Where is the capped roof penetration sleeve required to be located?

**Answer:** The capped roof penetration sleeve in a solar ready design required by Appendix RB must be “adjacent to the designated solar-ready zone.” Note that a capped roof penetration sleeve is only required for roofs with slopes less than or equal to 1:12, which is essentially a flat roof.

**Question:** Does the sleeve for the solar system have to be run to the panels or is a different configuration allowed?

**Answer:** No. There is no requirement to install conduit from the solar ready zone to the electric panel; the roof penetration sleeve as required per the previous Q&A makes it easier to install conduit in the future. The capped roof penetration sleeve shall be sized to accommodate photovoltaic system conduit. The code does not specify how large the diameter of the sleeve needs to be to accommodate a future photovoltaic system, but it does state that the sleeve’s inside diameter may not be less than 1¼ inches.

**Code Reference:** Appendix RB Section RB103.6

## NEW CONSTRUCTION

**Question:** Can a home with a fossil fuel backup generator still qualify as “all-electric” to be eligible for the trade-off for clean energy systems (i.e., 3-point increase in maximum HERS Index)?

**Answer:** Yes. Fossil fuel powered backup generators are allowed in all-electric homes.

**Code Reference:** Personal communication with DOER

**Question:** Would a rooftop fireplace/grille disqualify a building from being all electric?

**Answer:** DOERs approach to the subject of fireplaces and grilles is based on whether they are built-in and piped in or freestanding.

So, for example having a portable grill with a replaceable propane cannister/tank on the deck is fine, having a built-in cooking area or fireplace than relies on a replacement cannister/tank is also fine, but

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having a built-in grill or fireplace with a permanent in-ground propane tank or gas supply line makes it a mixed-fuel building. Essentially if the fossil fuel infrastructure is built-in to the building even if serving an outdoor area then it is mixed fuel. If the fuel using equipment is easily movable from one home to another – e.g., a standby generator or portable grill then it is fine.

**Code Reference:** Personal communication with DOER

**Question:** If an abutting commercial space were not all-electric, would this disqualify a building from being all electric? For example, a café below two stories of housing

**Answer:** For mixed use buildings. The stretch code allows you to use different compliance paths for different portions of the building. So, a mixed-use building with restaurant/retail on the ground floor and residential units above can be mixed fuel on the ground floor and still be all-electric for the residential units. This means that it can use HERS 44 or 55 or Passive house for the residential space and be all-electric even if the restaurant/retail space is using gas and is mixed fuel following the prescriptive or ASHRAE path.

Of course, any gas supply to the restaurant cannot also be used to provide heating or cooking in the residential units or in the common space of the residential use if they want to be all-electric residential.

**Code Reference:** Personal communication with DOER

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