

Single Family Homes – Step by Step

1. Preliminary Home Energy Rating & Pre-Construction Team Meeting

- Submit plans and specifications to CET and sign an agreement
- Meet with CET to review results of preliminary Home Energy Rating and strategize about further energy efficiency improvements
- Decide if you will pursue utility incentives and/or the ENERGY STAR label and agree to a plan to meet these goals
- Receive a participation confirmation email from the Mass Save Residential New Construction program
- If building in a town with the Stretch Energy Code, show your building inspector your preliminary HERS index

2. Optional Mid-construction Consultation and Testing

CET recommends mid-construction visits to the home to verify that framing will meet program requirements, to perform rough-in duct leakage tests, and to perform mid-construction blower door tests.

- Meet with your HERS rater on site about best practices for complying with the Thermal Enclosure Rater Checklist
- Get a rough-in duct leakage test and/or mid-construction blower door test

3. Insulation Inspection

- Submit HVAC System Sizing Contractor Checklist and/or Manual J Cooling Load Calculation if your home has ducted air conditioning
- Call CET at least 4 days in advance to schedule an insulation inspection before drywall with your HERS rater
- CET's HERS rater will visually inspect insulation and items on the Thermal Enclosure Rater Checklist

4. Final Inspection and Confirmed Home Energy Rating

- Call CET at least 4 days in advance to schedule a final inspection with your HERS rater
- CET's HERS rater will conduct a visual inspection, a blower door test, a duct leakage test (if the house has ducts), and a ventilation flow test
- CET will provide a final confirmed Home Energy Rating Certificate upon receipt of final payment.
- CET will submit documentation to the Mass Save Residential New Construction program if you have met program requirements and the program will send you an incentive check in 60-120 days

If you have any complaints about the quality of CET's work during this process, please contact Susan Ash at 413-586-7350 x250 or susan.ash@cetonline.org.

2016 Mass Save Single Family Program Incentives

- **Tier 1:** \$750 per home, equipment rebates, free CFLs/LEDs
- **Tier 2:** \$1,250 per home, equipment rebates, free CFLs/LEDs
- **Tier 3:** \$7,000 per home, free CFLs/LEDs

Mass Save Residential New Construction Program Requirements

1. **Overall Energy Efficiency.** A Home Energy Rating must be completed for the home showing at least the following improvement over the Massachusetts Reference Home: Tier I 15%, Tier II 30%, or Tier III 45%. In addition, heating systems and water heating systems must be more efficient than the systems in the Massachusetts Reference Home.
2. **Mechanical Ventilation.** The home must have a ventilation system rated for continuous use. If the ventilation system is located in the living space (such as a bathroom exhaust fan), the sound rating must be ≤ 1.5 sones. Background ventilation level must be set to 100-120% of ASHRAE 62.2-2010 or ASHRAE 62.2-2013 guidelines.
3. **Whole House Building Tightness Testing.** The home must be tested with a blower door and achieve a whole building infiltration rate of 4.5 ACH50 or less. Greater tightness than this may be needed to meet the requirements of the Performance Pathway or Prescriptive Pathway chosen.
4. **Duct Tightness Testing.** If the home has ducted heating or cooling system, duct testing must be performed to show a leakage rate at or below 6 CFM to outdoors per 100 sq. ft. of conditioned floor area.
5. **Cooling System Requirements.** If the home has cooling, an HVAC System Sizing Contractor Checklist must be provided as proof of proper sizing. In addition, a Thermal Expansion Valve (TXV) or Electronic Expansion Valve (EXV) must be included in all cooling systems.
6. **Efficient Lighting.** High efficacy lamps must be installed in at least 80% of light fixtures in the home. Compact Fluorescent Lightbulbs are available for free through the program.
7. **Thermal Enclosure Checklist.** The home's thermal envelope must comply with sections 2 and 4 of the ENERGY STAR v3.1 Rater Field Checklist.
 - a) Section 2, Fully Aligned Air Barriers: This portion of the checklist requires that the insulation in all walls, floors, and ceilings be in full contact with the building's primary air barrier and that wall insulation be encapsulated on all 6 sides (top, bottom, front, back, left, right).
 - b) Section 4, Air Sealing: This portion of the checklist requires that the primary air barrier be continuous and that all penetrations, gaps, and cracks in the air barrier be sealed.

Additional Requirements for the ENERGY STAR v3.1 label

1. **Training.** Builders are required to be ENERGY STAR partners and complete the online Version 3 Builder Orientation. Partnership Agreements and Version 3 Builder Orientation can be found at www.energystar.gov/homesPA. HVAC contractors must be credentialed by an EPA-recognized HVAC Quality Installation Training and Oversight Organization (H-QUITO). Learn more at www.energystar.gov/newhomesHVAC.
2. **ENERGY STAR HERS Index Target.** The specific HERS Index Target for your project must be achieved.
3. **Checklists.** The project must be built in compliance with the HVAC Design Checklist, HVAC Commissioning Checklist, Water Management Checklist, Rater Field Checklist.