

ENERGY STAR. The simple choice for energy efficiency.



ENERGY STAR Certified Homes

The Year Ahead

RESNET Building Performance Conference

February 16th, 2015





Agenda

- The numbers
- Checking in on Version 3.1
- Preview of Revision 08
- New & upcoming resources
- Conference track

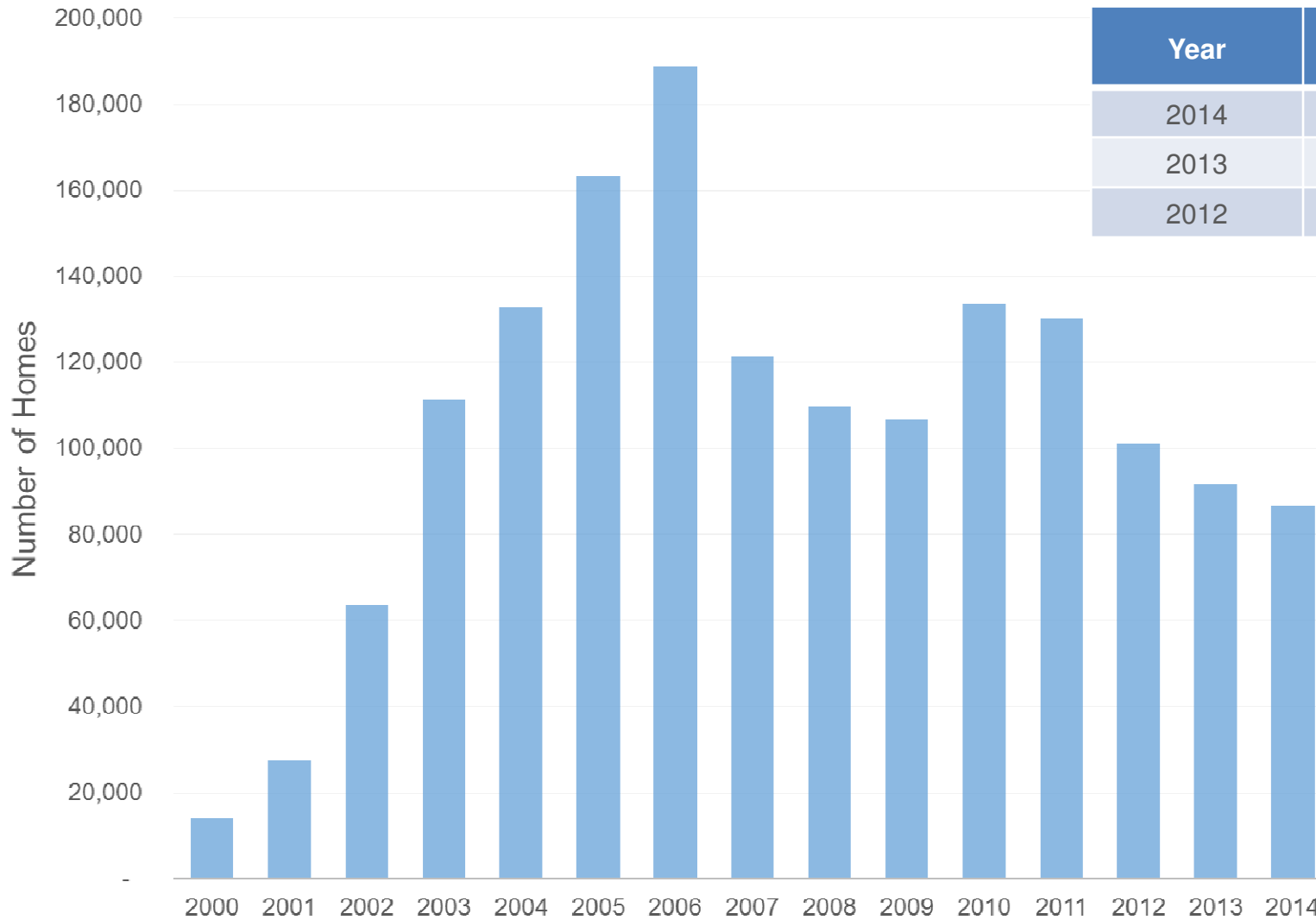
The Numbers



ENERGY STAR. The simple choice for energy efficiency.



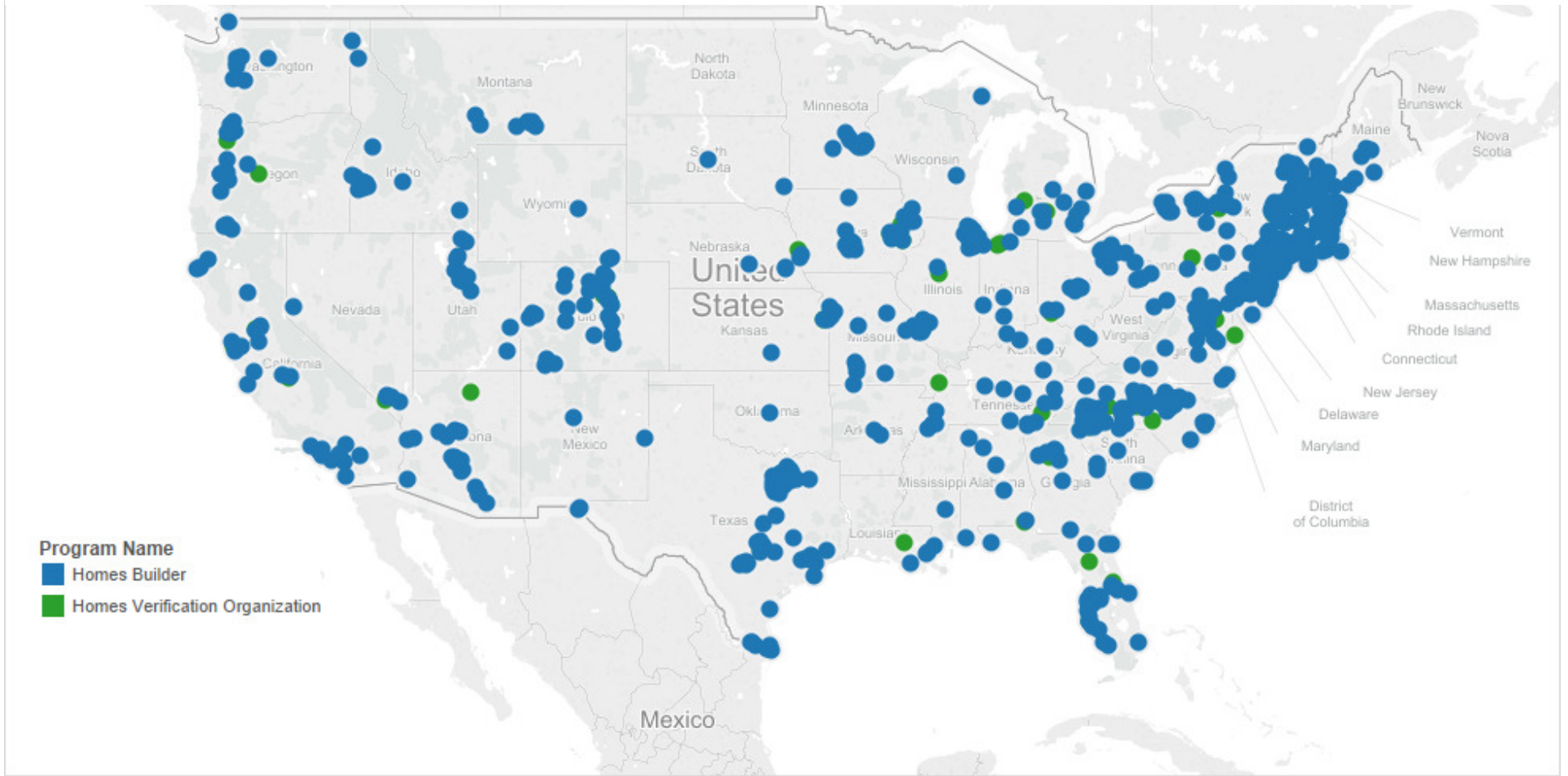
Annual ENERGY STAR Certified Homes Built



Year	Homes Reported
2014	86,736
2013	91,533
2012	101,034



Over 800 New Partners in 2014!



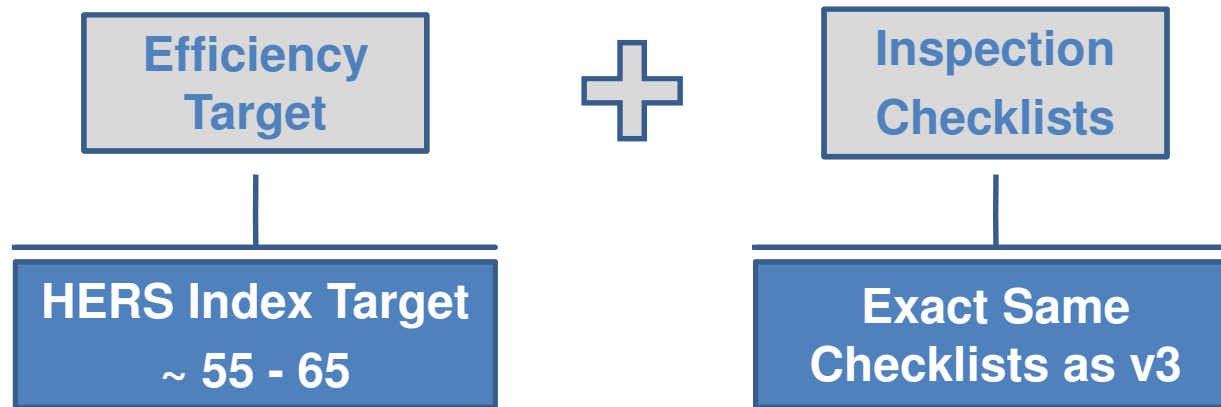
Checking in on Version 3.1





What you need to know about Version 3.1

- Maintains meaningful savings in states that adopt the 2012 IECC or equivalent.





What you need to know about Version 3.1

- REM/Rate can run v3.1 compliance report today, even for states that have yet to adopt v3.1.

The screenshot displays the REM/Rate v14.5 software interface. A 'Report Selection - NEW Reports' dialog box is open, showing a list of reports to consider. The 'ENERGY STAR V3.1 Home (1)' report is highlighted in blue. The 'Add >>' button is also highlighted. The 'Analysis' panel on the right shows a list of programs and codes, with 'V3.1 ENERGY...' highlighted in red and 'Passes' status. The 'Analysis' panel also shows 'Updated: 02:29:00 PM' and a list of programs including 'V2.0 ENERGY...', 'V2.5 ENERGY...', 'V3.0 ENERGY...', 'V3.0* ENERGY...', 'Tax Credit', 'DOE Zero En...', 'HERS Index', 'NY HERS Score', and 'Code'.

Program	Status
V2.0 ENERGY...	Passes
V2.5 ENERGY...	Passes
V3.0 ENERGY...	Passes
V3.0* ENERGY...	Passes
V3.1 ENERGY...	Passes
Tax Credit	Passes
DOE Zero En...	Fails
HERS Index	58
NY HERS Score	N/A
Code	
IECC 2012 En...	Passes
IECC 2009 En...	Passes
IECC 2006 En...	Passes
IECC 2004 En...	Passes
IECC 2003 En...	Passes
IECC 2001 En...	Passes
IECC 2000 En...	Passes
IECC 1998 En...	Passes
ECCCNYS-2010	Fails
ECC of Southe...	Passes
MEC 1995 En...	Passes
MEC 1993 En...	Passes
MEC 1992 En...	Passes
ASHRAE 90.2 ...	Passes



What you need to know about Version 3.1

- No new mandatory measures in v3.1!
- To hit the lower HERS index target, you'll likely need to:
 - Make incremental improvements to infiltration, windows, HVAC efficiency, and lighting.
 - And pursue one of the following:
 - Ducts in conditioned space, or,
 - High efficiency water heaters.



What you need to know about Version 3.1

- There are now eight states, along with the District of Columbia, for which the implementation date has been defined for v3.1:

State	Applicable to Homes with the Following Permit Date
MA	On or after 01/01/2015
DC, IL, MD, RI	On or after 04/01/2015
IA	On or after 06/01/2015
DE	On or after 12/01/2015
MN	On or after 04/01/2016
NV	On or after 07/01/2016

Preview of Revision 08





We're doing well. We're planning to do even better..

**REVISION
08**

- Based on partner feedback, we want to address the following concerns:
 - Too much paperwork
 - Challenging workflow
 - Discomfort regarding Rater oversight of HVAC requirements



Guiding Principles for Revision 08

1. Keep, but streamline, the requirements that provide the most value.
2. Eliminate requirements that create the most hassle, and provide the least value.
3. Better align the process for ENERGY STAR with a HERS rating.



Preview of Revision 08: Greatly reduced paperwork

- Raters will no longer collect water management system checklist.
- Raters will no longer collect full load calculations, an AHRI certificate, or a test & balance report.
- Raters will no longer collect the HVAC system commissioning checklist.
- Raters will only collect a single HVAC design report per system design.
- Thermal Enclosure System and HVAC System Rater checklists will be consolidated into:
 - A half-page Rater Plan Review Checklist
 - A single-page Rater Field Inspection Checklist



Preview of Revision 08: Greatly improved workflow

- Old HVAC System QI Contractor Checklist split into two parts:
 - HVAC Design Report goes from designer to Rater once per system design, earlier in the process.
 - HVAC System Commissioning Checklist held by contractor; no longer collected by Rater.
- Rater Plan Review Checklist completed once per plan/system design, typically at same time as HERS modeling is completed.
- Rater Field Checklist has fewer items at final inspection, reducing uncertainty.



Preview of Revision 08: Reduced HVAC oversight role for Raters, for time-being

- No document collection from installing contractor.
- No more math check on refrigerant charge.
- No more collection or verification of Test & Balance report.
- No more basic system controls check.
- Streamlined visual inspections for ventilation inlets and exhaust ducts, though airflows will still be measured.
- Raters will continue to measure static pressure, but will no longer check against contractor readings.
- Sound limits for intermittent exhaust fans recommended, but not required.



Preview of Revision 08: Summary

- HVAC System Design Report

- Completed by HVAC designer.

- *Collected by Rater once per system design.*

HVAC System Design Report ¹
ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 08)

House Plan, Option(s), & Elevation(s): _____

System Description ² _____ Cooling system for temporary occupant load? ³ Yes No

1. Whole-Building Mechanical Ventilation Design	Designer Verified ¹	N/A								
A whole-house ventilation system has been designed and specified that meets the following requirements ⁴ :	<input checked="" type="checkbox"/>	-								
1.1 Airflow: Ventilation airflow design rate & run-time meet the requirements of ASHRAE 62.2-2010 or 2013.	<input checked="" type="checkbox"/>	-								
Vent. Design Rate: _____ CFM Max. Cycle Time: _____ Hours Fractional On-Time: _____ Hours										
1.2 Controls:										
System Type: <input type="checkbox"/> Supply <input type="checkbox"/> Exhaust <input type="checkbox"/> Balanced Control Location: _____ (e.g., Master bath, Utility room)										
1.2.1 Specified controls allow the system to operate automatically, without occupant intervention.	<input checked="" type="checkbox"/>	-								
1.2.2 A readily-accessible ventilation override control has been specified and a label has also been specified if its function is not obvious (e.g., a label is required for a stand-alone wall switch).	<input checked="" type="checkbox"/>	-								
1.2.3 If the system specifies an intake duct to the return side of the HVAC system, then the specified controls are designed to operate intermittently and automatically based on a timer and to restrict outdoor air intake when not in use (e.g., motorized damper). ⁵	<input checked="" type="checkbox"/>	-								
1.3 Sound: The fan of the specified system shall not exceed ≥ 3 sones for intermittent systems and ≥ 1 sone for continuous systems (exceptions for HVAC and remote-mounted fans).	<input checked="" type="checkbox"/>	<input type="checkbox"/>								
1.4 Efficiency:										
1.4.1 If system utilizes the HVAC fan, then the fan type shall be ECM / ICM, or the controls shall reduce the stand-alone ventilation run-time by accounting for hours when the HVAC system is heating or cooling.	<input checked="" type="checkbox"/>	-								
1.4.2 Bathroom fans used as part of a whole-house mechanical ventilation system shall be ENERGY STAR certified, unless rated flow rate ≥ 500 CFM.	<input checked="" type="checkbox"/>	-								
1.5 Air Inlet Location: If air inlet location is specified, it shall meet the following requirements:										
1.5.1 Inlet is not within an attic, crawlspace, garage or adjacent dwelling unit.	<input checked="" type="checkbox"/>	-								
1.5.2 Inlet is ≥ 3 ft. of stretched-string distance from known contamination sources (e.g., stack, vent, exhaust hood, or vehicle exhaust) exiting the roof and ≥ 10 ft. from known contamination sources not exiting the roof.	<input checked="" type="checkbox"/>	-								
2. Heating & Cooling System Design										
2.1 Room-by-room heating & cooling loads calculated for home to be built per following methodology (see Footnote 7 and energystar.gov/ loadsdesign): ⁷	<input checked="" type="checkbox"/>	-								
<input type="checkbox"/> ACCA Manual J v8 <input type="checkbox"/> 2008 ASHRAE <input type="checkbox"/> Other per AHJ: _____										
2.2 Equipment Selected per ACCA Manual B (see Footnote 8 and energystar.gov/ loadsdesign): ⁸	<input checked="" type="checkbox"/>	-								
2.3 Ducts Designed per ACCA Manual D (see Footnote 9 and energystar.gov/ loadsdesign): ⁹	<input checked="" type="checkbox"/>	-								
2.4 Indoor Design Temperatures used were 70°F for heating; 75°F for cooling.	<input checked="" type="checkbox"/>	-								
2.5 Outdoor Design Temperatures: (See Footnote 10 and energystar.gov/ loadsdesign for guidance) ¹⁰	<input checked="" type="checkbox"/>	-								
County Where Home Will be Built: _____ Cooling Season: _____°F Heating Season: _____°F										
2.6 Number of Occupants Served by System: ¹¹ _____	<input checked="" type="checkbox"/>	-								
2.7 Conditioned Floor Area in Rated Home: _____ Sq. Ft.	<input checked="" type="checkbox"/>	-								
2.8 Window Area in Rated Home: _____ Sq. Ft.	<input checked="" type="checkbox"/>	-								
2.9 Predominant Window SHGC in Rated Home: ¹² _____	<input checked="" type="checkbox"/>	-								
2.10 Infiltration Rate in Rated Home: ¹³ _____ Summer: _____ Winter: _____	<input checked="" type="checkbox"/>	-								
2.11 Mechanical Ventilation Rate at Design Conditions: _____ CFM	<input checked="" type="checkbox"/>	-								
Loads at Design Conditions, By Orientation: ¹⁴										
	N	NE	E	SE	S	SW	W	NW		
2.12 Latent Heat Gain (BtU/h):									<input checked="" type="checkbox"/>	-
2.13 Sensible Heat Gain (BtU/h):									<input checked="" type="checkbox"/>	-
2.14 Total Heat Gain (BtU/h):									<input checked="" type="checkbox"/>	-
2.15 Total Heat Loss (BtU/h):									<input checked="" type="checkbox"/>	-
2.16 Variation in Total Heat Gain (Value 2.13) Across Orientations $\leq 15\%$: ¹⁴ (Max. Gain - Min. Gain) / Min. Gain = _____ %									<input checked="" type="checkbox"/>	-
2.17 Design HVAC Fan Airflow: ¹⁵ _____ Cooling Mode: _____ CFM Heating Mode: _____ CFM									<input checked="" type="checkbox"/>	-
2.18 Design HVAC Fan Speed Setting: ¹⁷ _____ Cooling Mode: _____ Heating Mode: _____									<input checked="" type="checkbox"/>	-
2.19 Design Total External Static Pressure: ¹⁸ _____ IWC									<input checked="" type="checkbox"/>	-
3. Selected Cooling Equipment, If Cooling Equipment to be Installed										
3.1 Equipment Type: <input type="checkbox"/> Cooling-Only Air Conditioner or <input type="checkbox"/> Cooling & Heating Heat Pump	<input checked="" type="checkbox"/>	<input type="checkbox"/>								



Preview of Revision 08: Summary

Rater Plan Review Checklist
ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 08)

Home Address: _____ City: _____ State: _____ Permit Date: _____

1. Partnership Status	Must Correct	Rater Verified	N/A
1.1 Fenestration meets or exceeds performance selected in Item 2.1 of the Rater Design Review Checklist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Insulation meets or exceeds levels selected in Item 3.1 of the Rater Design Review Checklist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 All insulation achieves RESNET-defined Grade 1 installation. See Footnote 3 for alternative. ³	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Rater Field Checklists
ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 08)

Home Address: _____ City: _____ State: _____ Permit Date: _____

Thermal Enclosure System	Must Correct	Builder Verified	Rater Verified	N/A
1. Fenestration & Insulation				
1.1 Fenestration meets or exceeds performance selected in Item 2.1 of the Rater Design Review Checklist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Insulation meets or exceeds levels selected in Item 3.1 of the Rater Design Review Checklist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1.3 All insulation achieves RESNET-defined Grade 1 installation. See Footnote 3 for alternative. ³	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Fully-Aligned Air Barriers				
At each insulated location noted below, a complete air barrier shall be provided that is fully aligned with the insulation as follows: • At interior or exterior surface of ceilings in Climate Zones 1-3; at interior surface of ceilings in Climate Zones 4-8. Also, include barrier at interior edge of attic eave in all climate zones using a wind baffle that extends to the full height of the insulation. Include a baffle in every bay or a baffle in each bay with a soffit vent that will also prevent wind washing of insulation in adjacent bays. ⁴ • At exterior surface of walls in all climate zones; and also at interior surface of walls for Climate Zones 4-8. ⁴ • At interior surface of floors in all climate zones, including supports to ensure permanent contact and blocking at exposed edge. ⁴				
2.1 Walls, Walls behind showers, tubs, staircases, and fireplaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 Walls, Attic knee walls and skylight shaft walls ⁵	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.3 Walls, Walls adjoining porch roof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.4 Walls, Garage rim / band joint adjoining conditioned space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.5 Walls, Double-walls and all other exterior walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.6 Floors, Floor above garage, floor above unconditioned basement or crawlspace, or cantilevered floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.7 Ceilings, Dropped ceiling / soffit below unconditioned attic, and all other ceilings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Reduced Thermal Bridging				
3.1 For insulated ceilings with attic space above (i.e., non-cathedralized), Grade 1 insulation extends to the inside face of the exterior wall below at these levels: CZ 1-5: ≥ R-21; CZ 6-8: ≥ R-30 ¹⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2 For stairs on grade in CZ 4 and higher, 100% of slab edge insulated to ≥ R-5 at the depth specified by the 2009 IRC and aligned with thermal boundary of the walls. ¹⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3 Insulation beneath attic platforms (e.g., HVAC platforms, walkways) ≥ R-21 in CZ 1-5; ≥ R-30 in CZ 6-8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4 One of the following options used at above-grade walls separating conditioned from unconditioned space (rim / band joists exempted): ¹⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.1 Continuous rigid insulation, insulated siding, or combination of the two; ≥ R-5 in Climate Zones 1 to 4; ≥ R-6 in Climate Zones 5 to 8. ^{14, 15, 16, 17} OR:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.2 Structural Insulated Panels OR, Insulated Concrete Forms OR, Double-wall framing. ^{14, 17}	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3 Advanced framing, including all of the items below:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3a Corners insulated ≥ R-6 to edge. ¹⁴ AND:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3b Headers above windows & doors insulated ≥ R-3 for 2x4 framing or equivalent cavity width, and ≥ R-5 for all other assemblies (e.g., with 2x6 framing). ¹⁴ AND:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3c Framing limited at all windows & doors to one pair of king studs, plus one pair of jack studs per window opening to support the header and sill. ¹⁴ AND:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3d Interior / exterior wall intersections insulated to same R-value as rest of exterior wall. ¹⁴ AND:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3e Minimum stud spacing of 16 in. o.c. for 2x4 framing in all Climate Zones and, in Climate Zones 6 through 8, 24 in. o.c. for 2x6 framing. ¹⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Air Sealing Unless otherwise noted below, "sealant" implies the use of caulk, foam, or equivalent material)				
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"/>	<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 ≥ R-10 in CZ 4 and higher.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Light tubes include lens separating unconditioned and conditioned space and are gasketed. ¹⁸	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4 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. ^{14, 19}	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Continuous top plate or blocking at top of walls adjoining unconditioned space, and sealed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6 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"/>
4.7 Rough opening around windows & exterior doors sealed. ¹⁴	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8 All seams between Structural Insulated Panels sealed per manufacturer's instructions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.9 In multifamily buildings, the gap between the common wall (e.g. the drywall shaft wall) and the structure framing between units sealed at all exterior boundaries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.10 Doors adjacent to unconditioned space (e.g., attics, garages, basements) or ambient conditions made substantially airtight with weatherstripping or equivalent gasket	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11 Attic access panels, drop-down stairs, & whole-house fans equipped with durable ≥ R-10 cover that is gasketed (i.e., not caulked). Fan covers either installed on house side or mechanically operated. ¹⁷	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Effective for homes permitted starting 6/01/2013 Revised 6/01/2013 Page 3 of 9

• Rater Plan Review Checklist

- 1/2 page.
- Contains checks on partnership/credential status, insulation, fenestration, and HVAC design.
- *Completed by Rater once per plan / system design.*

• Rater Field Inspection Checklist

- 1-page, front and back.
- Contains elements from old Thermal Enclosure System and HVAC System Rater Checklists.
- *Completed by Rater on every home.*



Preview of Revision 08: Summary

HVAC System Commissioning Contractor Checklist ¹
 ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 08)

The commissioning contractor must be pre-qualified, is responsible for these items, and shall sign this Checklist. The completed Checklist for each commissioned system shall be retained by the contractor for quality assurance purposes. Visit www.energystar.gov/newhomes/docs for information about the pre-qualification requirement and this Checklist.

Home Address: _____ City: _____ State: _____ Zip Code: _____

1. Refrigerant Charge - Run system for 15 minutes before testing

Note: If outdoor ambient temperature at the condenser is $\geq 35^{\circ}\text{F}$ or, if known, below the manufacturer-recommended minimum operating temperature for the cooling cycle, then the system shall include a TXV, and the contractor shall mark "N/A" on the Checklist for this Section.¹

	Contractor Verified	N/A
1.1 Outdoor ambient temperature at condenser: _____ °F DB	<input type="checkbox"/>	<input type="checkbox"/>
1.2 Return-side air temperature inside duct near evaporator, during cooling mode: _____ °F W/B	<input type="checkbox"/>	<input type="checkbox"/>

Water Management System Builder Requirements ^{1,2}
 ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 08)

1. Water-Managed Site and Foundation

1.1 Patio slabs, porch slabs, walks, and driveways sloped ≥ 0.25 in. per ft. away from home to edge of surface or 10 ft., whichever is less.¹

1.2 Backfill has been tamped and final grade sloped ≥ 0.5 in. per ft. away from home for ≥ 10 ft. See Footnote for alternatives.¹

1.3 Capillary break beneath all slabs (e.g., slab on grade, basement slab) except crawlspace slabs using either: ≥ 6 mil polyethylene sheeting, lapped 6-12 in., or a 1 in. extruded polystyrene insulation with taped joints.^{1, 4, 5}

1.4 Capillary break at all crawlspace floors using a 6 mil polyethylene sheeting, lapped 6-12 in., & installed using one of the following options:^{1, 4, 5}

1.4.1 Placed beneath a concrete slab, OR,

1.4.2 Lapped up each wall or pier and fastened with furring strips or equivalent, OR,

1.4.3 Secured in the ground at the perimeter using stakes.

1.5 Exterior surface of below-grade walls of basements & unvented crawlspaces finished as follows:

a) For poured concrete, masonry, & insulated concrete forms, finish with damp-proofing coating.⁷

b) For wood framed walls, finish with polyethylene and adhesive or other equivalent waterproofing.

1.6 Class 1 vapor retarder not installed on interior side of air permeable insulation in ext. below-grade walls.¹

1.7 Bump pump covers mechanically attached with full gasket seal or equivalent.

1.8 Drain tile installed at the exterior side of footings of basement and crawlspace walls, with the top of the drain tile pipe below the bottom of the concrete slab or crawlspace floor. Drain tile surrounded with ≥ 6 in. of 16 to 24 in. washed or clean gravel and with gravel layer fully wrapped with fabric cloth. Drain tile level or sloped to discharge to outside grade (daylight) or to a sump pump.¹

2. Water-Managed Wall Assembly

2.1 Flashing at bottom of exterior walls with weep holes included for masonry veneer and weep screed for stucco cladding systems, or equivalent drainage system.¹⁰

2.2 Fully sealed continuous drainage plane behind exterior cladding that laps over flashing in item 2.1 and fully sealed at all penetrations. Additional bond-break drainage plane layer provided behind all stucco and non-structural masonry cladding wall assemblies.^{14, 11}

2.3 Window and door openings fully flashed.¹²

3. Water-Managed Roof Assembly

3.1 Step and kick-out flashing at all roof-wall intersections, extending ≥ 4 " on wall surface above roof deck and integrated shingle-style with drainage plane above; boot / collar flashing at all roof penetrations.¹³

3.2 For homes that don't have a slab-on-grade foundation and do have expansive or collapsible soils, gutters & downspouts provided that empty to lateral using that discharges water on sloping final grade ≥ 5 ft. from foundation, or to underground catchment system not connected to the foundation drain system that discharges water ≥ 10 ft. from foundation. See Footnote for alternatives & exemptions.^{1, 14}

3.3 Self-sealing bituminous membrane or equivalent at all valleys & roof deck penetrations.¹

3.4 In 2005 IECC Climate Zones 5 & higher, self-sealing bituminous membrane or equivalent over sheathing at eaves from the edge of the roof line to > 2 ft. up roof deck from the interior plane of the exterior wall.¹

4. Water-Managed Building Materials

4.1 Wall-to-wall carpet not installed within 2.5 ft. of toilets, tubs, and showers.

4.2 Cement board or equivalent moisture-resistant backing material installed on all walls behind tub and shower enclosures composed of tile or panel assemblies with caulked joints. Paper-faced backerboard shall not be used.¹⁶

4.3 In Warm-Humid climates, Class 1 vapor retarders not installed on the interior side of air permeable insulation in above-grade walls, except at shower and tub walls.¹

4.4 Building materials with visible signs of water damage or mold not installed or allowed to remain.¹⁶

4.5 Framing members & insulation products having high moisture content not enclosed (e.g., with drywall).¹⁷

- **HVAC System Commissioning Checklist**

- Completed / maintained by HVAC installing contractor .

- *Not collected by Rater.*

- **Water Management System Builder Requirements**

- No per-home documentation required to be completed by builder.

- *Not collected by Rater.*



Key Takeaways for Revision 08

For Raters:

- Reduces all paperwork collection to a one-page report per plan.
- Greatly improves predictability at final inspection.
- Easier than ever to include ENERGY STAR certification in your offerings.

For Builders:

- Estimated to reduce costs by ~\$275 from Revision 07.
- Less hassle-factor for them and their trades.
- Continues to help improve performance and reduce cost of HVAC system.



Preview of Revision 08: Timeline

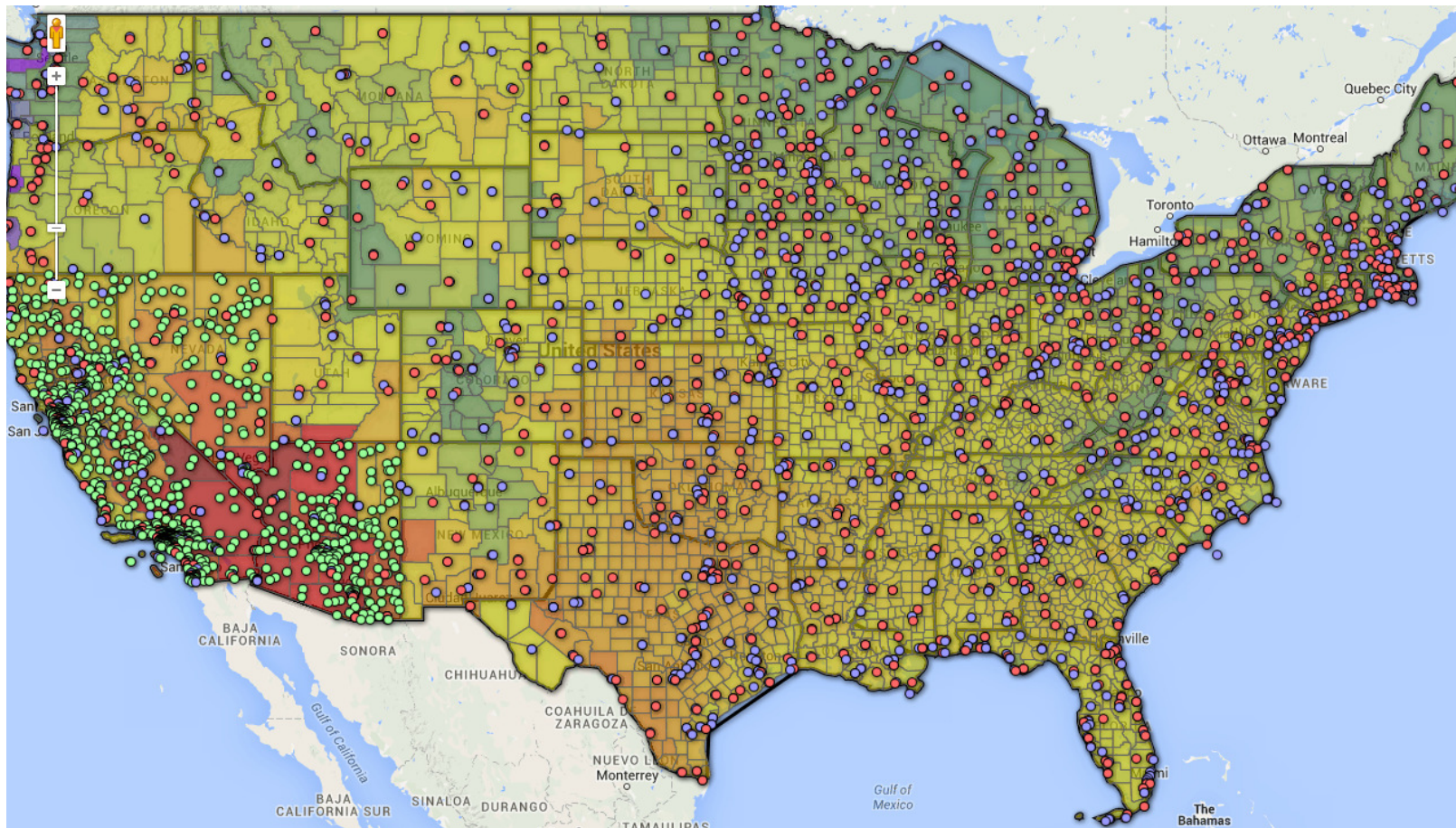
- Additional informal vetting with partners over next month.
- Expected release in May-June, 2015.
- Can be used immediately once released.

New & Upcoming Resources



New & upcoming resources coming to help you succeed

1. County-level design temperature limits





New & upcoming resources coming to help you succeed

2. Short informative videos about measuring ventilation airflow

ENERGY STAR Certified Homes:
How to Measure Whole-House Ventilation Airflow

 Video 3 of 4 – Outlet Terminal



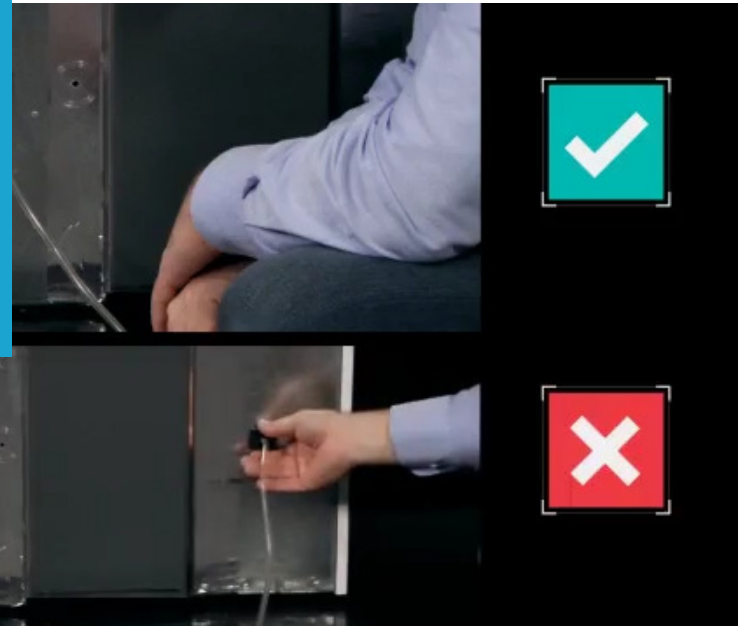


New & upcoming resources coming to help you succeed

3. Short informative videos about measuring HVAC fan airflow

ENERGY STAR Certified Homes: How to Measure HVAC Fan Airflow

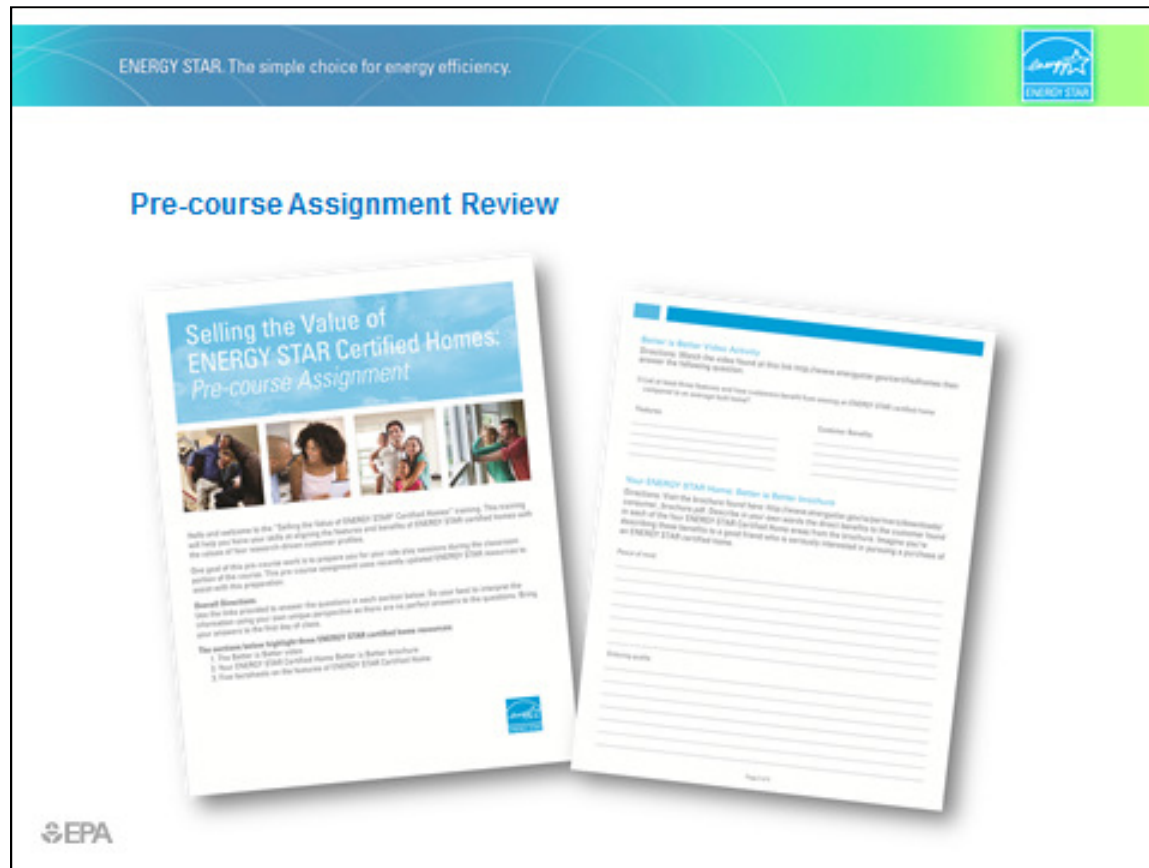
 Video 3 of 5 – How to Measure Static Pressure





New & upcoming resources coming to help you succeed

4. ENERGY STAR training for builders' sales managers





New & upcoming resources coming to help you succeed

5. ENERGY STAR training for builders' field supervisors



Conference Track





EPA & DOE Conference Sessions

Session	Nautilus 1	Nautilus 2
Monday February 16, 2015		
3:30-5 PM	Stepping up from HERS to ENERGY STAR	Getting into Hot Water: Moving it from A to B the Right Way
Tuesday February 17, 2015		
8:30-10 AM	Meet the Home of the Future: Zero Energy Ready Homes	More Science, Less Art: Successful HVAC Design
10:30-Noon	Water Efficiency and IAQ: The Next Frontiers in Whole Home Performance	Stop the Madness: Locating Ducts in Conditioned Space
1:30-3 PM	Until They Sell Themselves: New Marketing Tools for ENERGY STAR Homes	Clearing the Air: Ventilation
3:30-5 PM	Greasing the Skids: Tips for Completing the ENERGY STAR HVAC Checklists	Applying Effective Marketing and Sales Strategies to Zero Energy Ready Homes
Wednesday February 18, 2015		
8:30-10 AM	High-Performance Enclosures: Is it all about the R?	