

ENERGY STAR Certified Homes The Year Ahead

RESNET Building Performance Conference

February 16th, 2015





Agenda

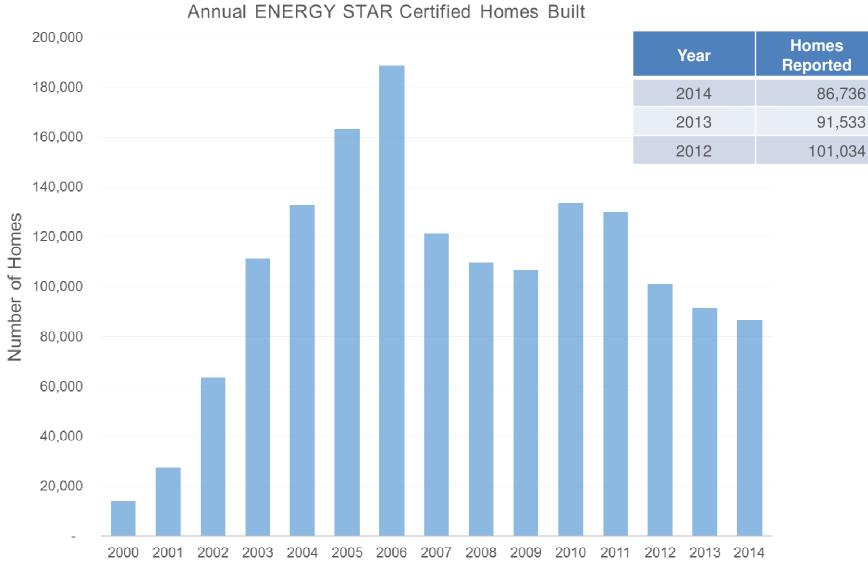
- The numbers
- Checking in on Version 3.1
- Preview of Revision 08
- New & upcoming resources
- Conference track

The Numbers



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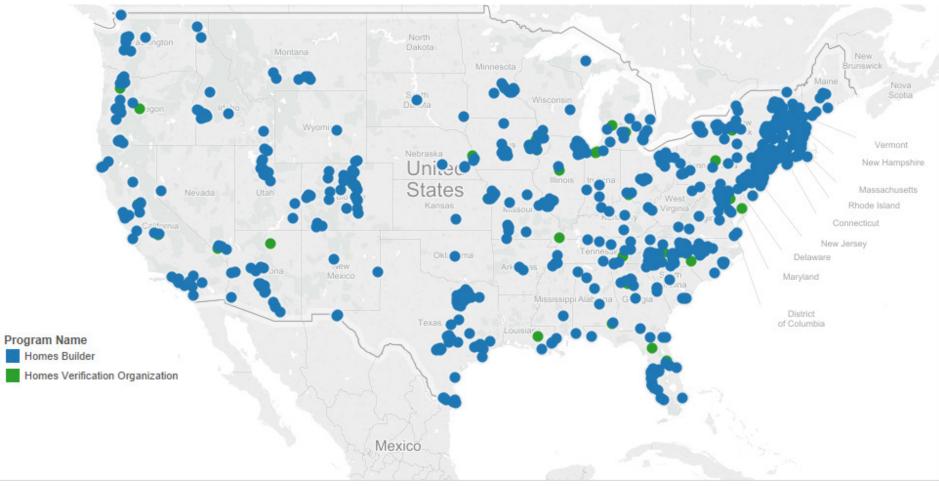




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Over 800 New Partners in 2014!



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Checking in on Version 3.1

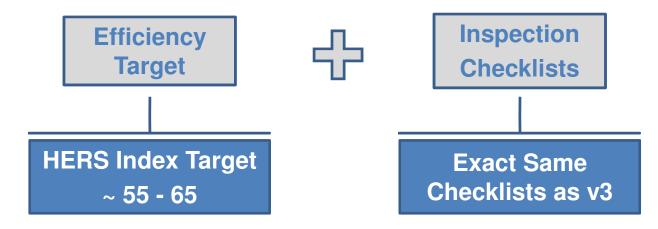


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What you need to know about Version 3.1

• 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.

- Site Information:				Analysis	ųΧ
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- Utility				🗆 Programs	
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Gas:	Default Gas Pr		D 1 F O L V	V3.0 ENERGY.	. Passes
		Croup of Reports to Consider.	Building Selection:	V3.0* ENERG	Passes
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Oilt	None			Tax Credit	Passes
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		ENERGY STAR V3 Certificate (1)		IECC 2006 En	
		ENERGY STAR V3 Label (1)		IECC 2004 En	
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		IECC 1998 Performance (1)		MEC 1992 En.	
		Note: (1) = 1 Bldg Report Only	Create A Group Delete A Gr		



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



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



- 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 <u>only</u> 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.

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Preview of Revision 08: Summary

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ENERGY STAR Certified Homes, Version 3 / 3.1 (Rev. 08) House Plan, Option(s), & Elevation(s):	HVAC System D	esio	n R	enor	f 1						
House Plan. Option(s): & Elevation(s):											
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HVAC System Design Report

- Completed by HVAC designer.
- Collected by Rater once per system design.



Preview of Revision 08: Summary

AMONTANA ANA					
	ENERGY STAR Certified Homes, Version 3	/ 3.	1 (Re	v. 08	3)
Home Addres	ss:City:Btate: _		Permit Dab		
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\frown	Deter Field Ober Histo				
enn	Rater Field Checklists		4 (5	~	
ENERGY STAR	ENERGY STAR Certified Homes, Version 3	3/3.	1 (Re	v. 0	8)
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Thermal E	inclosure System	Must Correct	Builder Vermed ¹	Rater Venhed	N
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	tion meets or exceeds performance selected in item 2.1 of the Rater Design Review Checklist in meets or exceeds levels selected in item 3.1 of the Rater Design Review Checklist	-			H
	ation achieves RESNET-defined Grade I installation. See Footnote 3 for alternative. *				
	gned Air Barriers * lated location noted below, a complete air barrier shall be provided that is fully aligned with the i	on defice	an followr		
bay or a • At exteri • At interi	edge of attic eave in al climate zones using a wind baffle that extends to the full height of the ins tabbed baffle in each bay with a soffle vent that will also prevent wind washing of insulation in ac insurface of wash in all climate zones; and also all interior surface of wals for Ofitimate Zones 44 or surface of floors in all climate zones, including supports to ensure permanent contact and bloc	ijacent b Bill	ays °	ge 7.4	-
	Nais behind showers, tubs, staircases, and fireplaces	-			E
2.3 Wels: V	ttic knee wals and skylight shaft walls ? Nail adjoining porch roof	-		- E	H
2.4 Wals: G	Barage rim / band loist adjoining conditioned space				
	Double-walls and all other exterior walls Floor above garage, floor above unconditioned basement or crawispace, or cantilevered floor				
2.7 Cellings:	Dropped ceiling / sofft below unconditioned attic, and all other ceilings	-	-	-	H
	Thermal Bridging			_	_
Inside fa	lated cellings with attic space above (i.e., non-cathedralized), Grade I insulation extends to the see of the exterior wall below at these levels: CZ 1-5: \ge R-21; CZ 5-8: \ge R-30 ¹⁶				0
	s on grade in CZ 4 and higher, 100% of slab edge insulated to ≥ R-S at the depth specified by 9 IECC and aligned with thermal boundary of the wais 15.12				1
	n beneath attic platforms (e.g., HVAC platforms, walkways) > R-21 in CZ 1-5; > R-30 in CZ 6-8				
		-	-	-	· ·
3.4 One of the	he following options used at above-grade wails separating conditioned from unconditioned space	: (rim / b	and joists e	xempted): «
3.4 One of ti 3.4.1 Co 2 F	he following options used at above-grade wells separating conditioned from unconditioned space ontinuous rigid insulation, insulated sking, or combination of the two; R^{-3} in Climate Zones 1 to 4, R^{-3} in Climate Zones 5 to 5 $e^{+4.24}$, OR ;	e (rim / b	and joists e	xempted): a
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3.4 One of ti 3.4.1 Cc 2.6 3.4.2 St 3.4.3 Ac 3.4.3 c 3.4.3 c	In blowing options used at table-sprace waits separating conditioned from unconditioned space ontinues right insulation. Insulated Stating or combination of the tar; R-3 in Chranet Zones 1 to 4, a R-5 in Chranet Zones 5 to 5 ¹⁴ ¹⁴ ¹⁴ , OR nuctural insulated Panets OR, Insulated Concrete Forms OR, Double-wait framing ^{14,17} panets framing, including at of the items below. Comers insulated 2 R-5 to dog ¹⁴ , NND; Preserve shows (and so dog ¹⁴ , NND); Preserve shows (and so dog ¹⁴ , NND); and a R-5 for at other assembles (e.g., with 2x6 framing ¹⁴ , AND); Framing Timbel at all windows 5 does to be cell of fram studs, plus one pair of flack studs.		and joists e		0: 4
3.4 One of ti 3.4.1 Co 2.6 3.4.2 St 3.4.3 Ao 3.4.3 e 3.4.3 c 3.4.3 c	In blowing options used at above grade waits separating conditioned from unconditioned space ontinuos right canaditation, insulted sating, or combination of the two; R-3 in Charate Zones 1 to 4, a R-5 in Charate Zones 5 to 8 ¹⁴ ¹⁴⁴ , QR, untural insulted Pareis QR, insulted Concete Forms CR, Double-wail faming ^{14,17} vanced framing, including at of the items below. Comers insulted a R-6 to dge ¹⁴ , ARD; Heades above windows 6 doors insulted a R-5 for 2x4 framing or equivalent cavity width, and a R-6 for at other assembles (ca., with 2x6 framing) ¹⁴ , ARD;		and joists e): «I
3.4 One of ti 3.4.1 Cr 2.6 3.4.2 St 3.4.3 Ac 3.4.3 Ac 3.4.3 c 3.4.3 c 3.4.3 c 3.4.3 c	In blowing options used at above-grade waits separating conditioned from unconditioned space ontinuos rigid insulation, insulated saling, or combination of the two; R-3 in Charate Zones 1 to 4, a R-5 in Climate Zones 5 to 5 ¹⁴ ¹⁴⁴ , QR, uturuli insulated Pareis QR, insulated Concrete Forms (R-Duble-wait) faming ^{14,17} banced framing, including al of the items below: Corrents insulated a R-51 to dge ¹⁴ , NDC; Demost singulated a R-51 to dge ¹⁴ , NDC; Preaders above windows & doors insulated a R-51 for 2x4 framing or equivalent cavity with, and a R-61 for al other assembles (Leq., with 2x6 framing) ¹⁴⁴ , AND; Framing limited at all windows & doors to one pair of inci studs, pairs of pair of jacci studs. Per window opening to support the houses and still ¹⁴⁴ , AND; Interior's cateform and intersections insulated as R-14 AND;				
3.4 One of ti 3.4.1 Cc 2.5 3.4.2 8t 3.4.3 Ac 3.4.38 3.4.38 3.4.30 3.4.30 3.4.30 3.4.30 3.4.30	In Sticking options used at table-sprace waits separating conditioned from unconditioned space ontinues right insulated sticking or combination of the targ. R-bin Chinate Zones 1 to 4, a R-bin Chinate Zones 5 to 5 ¹⁴ ¹⁴ ¹⁴ , QR, nuclural insulated R-bits QR, insulated Concrete Forms QR, Double-wait framing ¹⁴ ¹⁶ avanced framing, including at of the items below. It comes insulated 2 R-bit edge ¹⁴ , AND; Therefore shows a down simulated 2 R-bit Regime ¹⁴ , AND; Interform State at a lividious & down simulated 2 R-bit framing ¹⁴ , AND; Framing limited at all windows & down simulated 2 R-bit framing ¹⁴ , AND; Framing limited at all windows & down simulated 2 R-bit framing ¹⁴ , AND; Interfor detection all insections insulated is the state revisite as to of safetior wait. ¹⁴ , AND;				
3.4 One of ti 3.4.1 Cc 2.1 3.4.2 St 3.4.3 Ac 3.4.3 Ac 3.4.3 C 3.4.3 C 4.5 C 3.4.3 C 3.4.3 C 4.5	In blowing options used at takin-sprace wais separating conditioned from unconditioned sear ontinuos tigli caratesi, insulated sating, or combination of the two; RS in Charate Zones 1 to 4, a RS in Charate Sone B to 3 ¹⁴ (14), QR uturbal insulated Parels QR, insulated Concrete Forms QR, Double-wail familing ^{14,16} banced framing, including at of the items below. Comment insulated RS is baged: 1, MAD (2) Headers above windows & adoms insulated as Par 24 framing or equivalent cavity width, and a RS for at other assembles (2), with 26 framing ¹⁴ , AMD, Headers above windows & adoms insulated as Par 24 framing ¹⁴ , MAD, per window opening to support the leader and sil. ¹⁴ , AMD, instruct / sectors all instructions that waited to same R-value as rest of extent wait ¹⁴ , AMD, Minimum sub sector of Film, q2, for 244 framing in al Climate Zones and, in Climate Zones \$ through 1, 24, 16, 56, 175, 254, framing in al Climate Zones and, in Climate 20 (Zones standards to below, "sector" indicates the use of satult, form, or equi us, strats, Junimer, piping, wing, a character strate for extent wait or a AMD.				
3.4 One of ti 3.4.1 Cc 2.1 3.4.2 8t 3.4.3 Ac 3.4.3 ac 4.5	In blowing options used at takin-sprace waits separating conditioned from unconditioned space ontinuos rigid materials, insulated sating, or combination of the two; RS-I in Charate Zanes 1 to 4, a RS-I in Climate Zanes 5 to 5 ¹⁴ 4.14°, QR, utuaturi Insulated Parels QR, Insulated Concrete Forms QR, Double-wall faming ^{14,17} banced faming, including at GH to the terms betw. Comers insulated RS-RE to adget 7, AND; Charate Sating and RS-RE to adget 7, AND; Preaders boxe windows & doors insulated a RS-I for Zx4 finaming or equivalent cavity width, and a R-R for at climate 2, with Zx4 finaming 11, AND; Preaders boxe windows & doors to one pair of ang studs, puis one pair of joing studs. Initiator climate, and interescention for publication base met control work 7, AND; Minimum stud spacing of Fin Lg, CR 2x4 finaming in a Climate Zones and, in Climate Zones 5 through 1, 24 inos, for 25 finaming in al Climate Zones and, in Climate as shards, publicating based based between the state of caviti, foram, or equi- ues shards, publication base and climate States for the conditioned eated, which blocking (finality is a needed.		and joists e		
3.4 One of ti 3.4.1 CC 2.1 3.4.2 Bt 3.4.2 Bt 3.4.3 At 3.4.3	In Etiokovic potenci used at takov-synaet wais secarating conditioned from unconditioned spectrimulos rigid insulation, insulated safeting, or combination of the two; R-3 in Charate Zanes 1 to 4, R-5 in Charate Zoncere Forms (R-Duble-waii) familing "1.5" concerns insulated areas OR, insulated Concere Forms (R-Duble-waii) familing "1.5" comers insulated R-Reis OR; and Concere Forms (R-Duble-waii) familing "1.5" comers insulated R-Reis OR; and the Reis Below: Comers insulated R-Reis or equity (R-R) Presides above windows & Sobors insulated R-F3 for 2x4 familing in subscript Houtes and R-R-fs rol (R-er assembles (R-Q), with 2x6 family "1, AND; Presides above windows & Sobors to one pair of ring studs, plus one pair of jack studs per window opening to support the houses and still.", AND; Interior / section waii Intersections insulated R-R-Risk es rest of exterior waii. ", AND; Interior / section waii Intersections insulated R-Risk (R-Risk), and (R		and joists e		
3.4 One of it 3.4 One of it 3.4 1 Or 2 1 3.4 2 Bi 3.4 2 Bi 3.4 3 Ac 3.4 3a 3.4 3a 3.4 3a 3.4 3a 3.4 3a 3.4 3a 4.3 L Section 2 4.4 Section 2 1.5 L Section 2 1.5	In Elizative performance and a biox-service was secarating conditioned from unconditioned spectrimulos and performance and periodition. Insulted safe ting, or combination of the two; R-3 in Charate Zones 1 to 4, a R-5 in Climate Zones 5 to 5 ¹⁴ ¹⁴⁴ , QR. Tutural insulted Parels QR, insulted Concrete Forms (CR. Double-wall faming ^{14,17}) banced framing, including al of the items below: Comers insulted R-Reis Deg(¹⁴ , 140); Deressing above windows 5 doors insulted a R-15 for 2x4 framing or equivalent cavity with; and a R-fr for al of their assembles (e.g., with 2x4 framing) ¹⁴⁴ , AND; Preades above windows 5 doors to one pair of king studs, plus one pair of jack studs per window opening to support the header and silf. ¹⁴ , AND; Interior's centrol and intersections insulted to R-10 for 2x4 framing or study studes, the centrol wall. ¹⁴ , AND; Interior's centrol and intersections insulted to R-10 for 2x4 framing or all of the centrol wall. ¹⁴ , AND; Interior's centrol and intersections insulted to same R-value as rest of exterior wall. ¹⁴ , AND; Interior's centrol and intersections insulted to same R-value as rest of exterior wall. ¹⁴ , AND; Interior's centrol and intersections insulted to same R-value as rest of exterior wall. ¹⁴ , AND; Interior's centrol and intersections insulted to same R-value as rest of exterior wall. ¹⁴ , AND; Interior's centrol and intersections insulted to a R-10 in a Climate Zones 5 through 1, 2, 4 h, o., the 2x4 framing in all Climate Zones and, in Climate eads, who bioding' (relating, as needs. Is lighting futures adjacent to conditioned aspect ID-11 labeled and gaspecta; Aso, I'rin do aling without at bowe, exterior subce of throw insultate to a R-10 in 2.4 k and higher: as include ins asserting unconditioned and conditioned space and are gaskated. ¹⁴ ¹⁴ and all galaxies ducent to conditioned space secies to truncation or 4 and higher: ¹⁴ and all galaxies ducent to conditioned space secies to the conditioned space and are gaskated. ¹⁴		and joists e		
3.4 One of it 3.4 One of it 3.4 To 2 1 3.4 2 Bi 3.4 32 A 3.4 32 A 3.4 32 3.4 32 3.4 32 3.4 32 3.4 32 3.4 32 3.4 32 4.3 2 3.4 32 3.4 32 4.3 2 3.4 32 4.3 2 5.4 32 5.4 5.4 32 5.4 5.4 5.4 5.4 5.4 5.4 5.4 5.4 5.4 5.4	In blocking options used at takin-sprace waits separating conditioned from unconditioned search microws right materials, insulated safe of concerts \$ to \$ ¹⁴ × 14 ¹ , QR, unclush lineated praces (RL, insulated Concerts \$ to \$ ¹⁴ × 14 ¹ , QR, unclush lineated Parels QR, insulated Concerts Forms QR, Double-wall faming ¹⁴ × ¹⁴ banced faming, including at of the items betw. Comers insulated \$ Rels to dig * 1, AND; Comers insulated \$ Rels to dig * 1, AND; Preaders boxe windows & doors insulated a R-1 for 2x4 filming or equivalent cavity width, and a R-6 for at other assemble (c.g., with 2x6 framing) ¹⁴ , AND; Preaders the same of the comers in the same of the same of the same of the lineitor (calcino) at linear-colons the unclusted to same for all of ang studs, but one pair of joint width, "AND; Minimum stud saccho of F16 µ, gc, for 2x4 finanting in a Climate Zones and, in Climate Zones \$ through 1, 4 h. eq. to 2x6 through a lineitor (calcino) at linear-colons the terming in a Climate Zones and, in Climate caves share, pulming, poling, wing, - extends final Climate Zones and, in Climate caves, share, pulming, poling, wing, - extends final Climate and assigned for final reg. (DT) tabled and page, day, if and d calling vintue at line below, "teasied" indicates the use of caviti, foram, or equi- ues, share, pulming, poling, wing, - extends final Climate and page, Aso, if in d calling vintue at lice bove, extentior surface of thrule insulated to a R-10 in C2. 4 and higher, is include insistention unconditioned and conditioned space ICNT libeled and page, Aso, if in cave share, pulming at lice above, extention and conditioned space at low conditioned as include insistention unconditioned and conditioned space at low conditioned. If paties adjacent to conditioned approximation is space floor. Gaskets as a correlation box-ground all conditioned approximation is space floor. Gaskets as a correlation box-ground all conditioned approximation is space floor. Gaskets as a				
3.4 One of it 3.4 1 One 2 1 3.4.2 Bi 3.4.2 Bi 3.4.3 Ac 3.4.3 Ac 4.2 Recessed Ac 4.2 Recessed Ac 4.3 Ac 4.4 Ac 4.4 Ac 4.4 Ac 4.4 Ac 4.5 Ac 4.5 Conthur 4.5 Con	In Elizative performance and a biox-service was secarating conditioned from unconditioned spectrimulos and performance and periodition. Insulted safe ting, or combination of the two; R-3 in Charate Zones 1 to 4, a R-5 in Climate Zones 5 to 5 ¹⁴ ¹⁴⁴ , QR. Tutural insulted Parels QR, insulted Concrete Forms (CR. Double-wall faming ^{14,17}) banced framing, including al of the items below: Comers insulted R-Reis Deg(). The second		naterial)		
3.4 One of ti 3.4 10 central of the office office of the office	In Etiokovig options used at takov-synaet wais secarating conditioned from unconditioned spectrimulos rigid insulation, insulated sating, or combatination of the two; R-3 in Charate Zanes 1 to 4, R-5 in Charate Zoncere Forms (R-Duble-waii) familing "1. ²⁷ towards framing, including al of the items below: Comers insulated R-64 to egg "1, AND; Comers insulated R-64 to egg "1, AND; Comers insulated R-64 to egg "1, AND; Comers insulated R-64 to egg "1, AND; Preases above windows & doors insulated R-74 for 2x4 framing or equivaent cavity width, and R-67 for al of the researchile (c.g., with 2x6 framing) "4, AND; Framing limited at al windows & doors to one pair of float studs, bus one pair of jack studs. Prevalence spectra and intersections insulated S and Tomate Zones and in Charate Zones 5 through 1, 24 h o, c.h. to 254 framing in 2010 (Tablet Zones and, in Charate Zones 5 through 1, 24 h, c.h. to 254 framing in (Unlines: Otherwise noted Bolew), researd in Classien to use of assult, foram, or equiv Les, smats, jumping, piping, wing, extinues to Karate and searce 2.2 and states of limiting futures adjecent to unconditioned space ICAT liabeled and gaspetch. 24 and type: estimate insecurity above state frances for the states of a states. ²¹ India for futures adjecent to unconditioned space ICAT liabeled and gaspetch. 24 and type: estimate insecurity above states adjecent to conditioned space and are gasteds. ²¹ right and statement to conditioned space states of the states at a state and states and the reserve space states of the states at a states. ²¹ right adjecent to conditioned space states and states at a states. ²¹ right adjecent to conditioned space states at adjecent to can states at 24 min dyne: states at the states at the reserve space states at states at the states at ²¹ states at prior to bolegant to conditioned space states at states at the states				
3.4 One of ti 3.4 10 ene of ti 3.4 2 8t 3.4 2 8t 3.4 3 2 4t 3.4 4 2 4 2 4t 3.4 4 2 4 2 4t 3.4 4 2 4 4 2 4t 3.4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	In blowing options used at takon-synate waits separating conditioned from unconditioned sear ontinuos typic instanto, insulated sating, or combination of the two; RS-In Charles Zones 1 to 4, a RS-In Charles Zones 5 to 5 ¹⁴ (147, QR, instant Zones 1 to 4, a RS-In Charles Zones 5 to 5 ¹⁴ (147, QR, instant Zones 1 to 4, a RS-In Charles Zones 6 forms (R, Double-wail) familing 11.77 branced framing, including all of the items below. Comers insulated RS-Is bage: 11, AND; Presons above windows & adopts insulated a RS-In ZoA framing or equivalent cavity width, granned finited all instanticals and the source and or motion 11, AND; Presons above windows & adopts insulated a RS-In ZoA framing or equivalent cavity width, granned finited all instanticals at course and or motion 11, AND; Presons above windows & adopts instantiated a RS-In RS-In ZoA framing or equivalent cavity width, granned finited all instanticals at charles of the RS-In ZoA framing in all Climate Zones 5 through 1.2 ki. So. for 23 ki famming in all Climate Zones and, in Climate Zones 5 through 1.2 ki. So. for 23 ki famming in all Climate Zones and, in Climate Zones 5 through 1.2 ki. So. for 23 ki famming in all Climate Zones and, in Climate Zones 5 through 1.2 ki. So. for 23 ki famming in all Climate collection of adoption 2 doce ICAT labeled and geological Aso, if in d climate above without atta acove, eather suitates of through subschool, if and in plants follower all instancions in throus finite above and adoption of collections and climate and adoption of the collection of adoption of source 1 hough a source of a collections of the climate and adoption of source in the instanted of a conditioned collection of the collection of collections above and adoption of collections and climate and the source of the collection of collections above and motion of collections above and adoption and collecting at the or diverse above and the instantion of source of the collection of collections above collection of the or diverse above and the instanted source ab		and joists e		
3.4 One of it 3.4.1 (one of it 3.4.2 (one of it 3.4.2 (one of it) 3.4.2 (one of it) 3.4.3 (one of it)	In blocking options used at table-sprace waits separating conditioned from unconditioned sear ontinuos rigid materials, insulated safets of concerts Films 3 ¹⁴ ¹⁴ ¹⁴ , QR, utuatari Insulated Tables 3 (R), and tables Concerts Films 8 (R), QR, utuatari Insulated Tables 3 (R), and tables Concerts Films 8 (R), QR, utuatari Insulated Tables 3 (R), and tables Concerts Films 8 (R), QR, utuatari Insulated Tables 3 (R), and tables Concerts Films 8 (R), QR, utuatari Insulated Tables 3 (R), AND; Comers Insulated R K-16 todget 7 (R), AND; Preams Bolve Windows & doors insulated R F-16 to 24 films or equivatent cavity worth, and R +6 th of a line sectoristic (R), with 2 M films 1 (R), and R + 10 (R), a				
3.4 One of it 3.4 10 ene of it 3.4 2 Bit 3.4 3 A 3.4 3 A 4.5 A 4.5 A 4.5 A 5 A 5 A	In blowing options used at taking-sprate waits separating conditioned from unconditioned sear ontinuos topic frances in to 4, ar 6-in Climate Zones 5 to 5 ¹⁴ 4.14, QR. "Utubal Insulated Panels QR. Insulated Concrete Forms QR. Double-wail framing '1-'' banced framing. Including all of the Items below. Comment Statutes Are to age '14, AND; Headers above windows & Action to an unconditioned search and the sprate per window opening to support the base of the Area (14, AND). Headers above windows & adors insulated s PA for 244 framing or equivalent cavity width, gramma timus di andiastica & Course and March (14, AND). Headers above windows & adors insulated s PA for 244 framing or equivalent cavity width, gramma timus di andiastica & Course and March (14, AND). Headers above windows & adors insulated s PA for 244 framing or equivalent cavity width, gramma timus di andiastica & Course and March (14, AND). Dere window opening to support the header and still. "I, AND. Status and the status of the status of the status as rest of decisions and "Initianiza" caketor and Interactions framma, if an IC Imate Zones and, in Climate Zones & through 1, 24, 16, 6, 6, 175 & 244 framing in al Climate Zones and, in Climate Zones & through a silection to uncertained the insulated to a status of decision, or equiv caves share, pulmet, pipeng, wing, extensit frant, & Climate Zones and, in Climate a climate data advance and conditioned space (14, 15, 16, 16, 16, 16, 16, 16, 16, 16, 16, 16		and joists e		
3.4 One of it 3.4 2 Den of it 3.4 2 Bit 3.4 3 Ad 3.4 3 Ad 4. Air Seall 4.5 Ducts, T 4.5 Ducts, T 8.5 Oorthu, 4.4 Abrows, picco 1 4.5 Oorthu, 4.5 Docts, T 8.5 Oorthu, 5.5 Oort	In blowing options used at takin-sprace waits separating conditioned from unconditioned sear ontinuos tigit caracteristic, in council solation, or combination of the two; R-3 in Chinate Zones 1 to 4, a R-5 in Chinate Zones 5 to 8 ¹⁴ ¹⁴ ¹⁴ , QR. "Utubal Insulated Panels QR. Insulated Concrete Forms QR. Double-wail familing ^{14, 16} barrows familiar barrows (R. Bouble-wail) familing ^{14, 16} barrows familiar R-6 to dog ^{14, 14} , ADC, Comers insulated R-6 to dog ^{14, 14} , ADC, and a R-6 to an other stassenble is class, units 2x6 famming ^{14, 16} Automatic R-10, and a loss insulated a R-10 for 2x4 famming or equivalent cavity width, and a R-6 to an other stassenble is class, units 2x6 famming ^{14, 14} , ADC, Per window opening to support the teader and sit. ¹⁴ , AND, per window opening to support the teader and sit. ¹⁴ , AND, initianal research and the teader and sit. ¹⁴ , AND, 2x0 for \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$		and joists e		

- 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.

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Preview of Revision 08: Summary

The commissioning contractor must be oredentialed, completed Checklist for each commissioned cyclem in Visit <u>www.encrystar.cov/newhomesbrag</u> for infor- tione Address	all be retained by the	oontractor for quality acc dential requirement and th	urance purpose	
I. Refrigerant Charge - Run system for 15 minutes before feating (ote: if outdoor ambient team of the condenser is g 50°F or, if it construct temperature for the cooling cut, then the surger shall not	City:			
lote: If outdoor ambient temperature at the condenseriary 55°F or, if k securing temperature for the cooling cycle, then the avatem shall inclu		State:	Zip Code:	
Note: If outdoor ambient temperature at the condenseriary 55°F or, if k scenating temperature for the opping cycle, then the avatem shall inclu				_
hecklat for this Section. ⁰	known, below the manufa ide a TXV, and the contra	clurer-recommended minimum ctor shall mark "NIA" on the	Contractor Ventred	NIA
1.1 Outdoor ambient temperature at condenser:	_	*F 06	-	
1.2 Return-side air temperature inside duct near evaporator, during	cooling mode:	*F WB		
Water Management Sy ENERGY STAR Certifi				08)
1. Water-Managed Site and Foundation				
 Patio slabs, porch slabs, walks, and driveways sloped ≥ 0.25. 	in, per ft, away from ho	me to edge of surface or 10 ft.	whichever is les	5.1
1.2 Back-fill has been tamped and final grade sloped a 0.5 in. per		-	-	-
1.3 Capillary break beneath all slabs (e.g., slab on grade, basem	ent slab) except crawlsp			eeting,
lapped 6-12 in., or ≥ 1 in. extruded polystyrene insulation with				
1.4 Capillary break at all crawispace floors using ≥ 6 mil polyethyl	iene sheeting, lapped 6	-12 in., & installed using one of	If the following op	16 × 4.4
1.4.1 Placed beneath a concrete slab; OR,				
1.4.2 Lapped up each wall or pier and fastened with furring st	rips or equivalent; OR,			
 1.4.3 Secured in the ground at the perimeter using stakes. 1.5 Exterior surface of below-grade wails of basements & unventional statements and the second statements. 		an fallan an		
 a) For poured concrete, masonry, & insulated concrete forms 				
b) For wood framed walls, finish with polyethylene and adhe				
1.6 Class 1 vapor retarder not installed on interior side of air perm	meable insulation in ext.	below-prade walls, *		
1.7 Sump pump covers mechanically attached with full gasket set	al or equivalent.			
1.8 Drain tile installed at the exterior side of footings of basement the concrete sibb or crawlspace floor. Drain tile surrounded w wrapped with fabric doth. Drain tile level or sloped to discharg 2. Water-Managed Wall Accembly	ith ≥ 6 in. of 55 to 34 in. v	vashed or clean gravel and wi		
2.1 Flashing at bottom of exterior walls with weep holes included	for masonry veneer and	weep screed for stucco clade	ding systems, or	_
equivalent drainage system. 10				
2.2 Fully sealed continuous drainage plane behind exterior claddl Additional bond-break drainage plane layer provided behind a 2.3 Window and door openings fully flashed. ¹²				5.
3. Water-Managed Roof Accembly				
3.1 Step and kick-out flashing at all roof-wall intersections, extend drainage plane above; boot / collar flashing at all roof penetral	tions. 12	-		
3.2 For homes that don't have a slab-on-grade foundation and do empty to lateral piping that discharges water on sloping final g connected to the foundation drain system that discharges wat	grade a 5 ft. from founds	tion, or to underground catch	ment system not	
3.3 Self-sealing bituminous membrane or equivalent at all valleys				
 In 2009 IECC Climate Zones 5 & higher, self-sealing bituming line to > 2 ft. up roof deck from the interior plane of the exterior 4. Water-Managed Building Materials 		alent over sheathing at eaves	from the edge of t	the root
	ind showers.			_
4.1 Wall-to-wall carpet not installed within 2.5 ft. of toilets, tubs, a				
4.2 Cement board or equivalent moisture-resistant backing mater panel assemblies with cauked joints. Paper-faced backerboard	rial installed on all walls rd shall not be used. 4			
4.2 Cement board or equivalent moisture-resistant backing mater	rial installed on all walks rd shall not be used. ** d on the interior side of	air permeable insulation in ab		

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



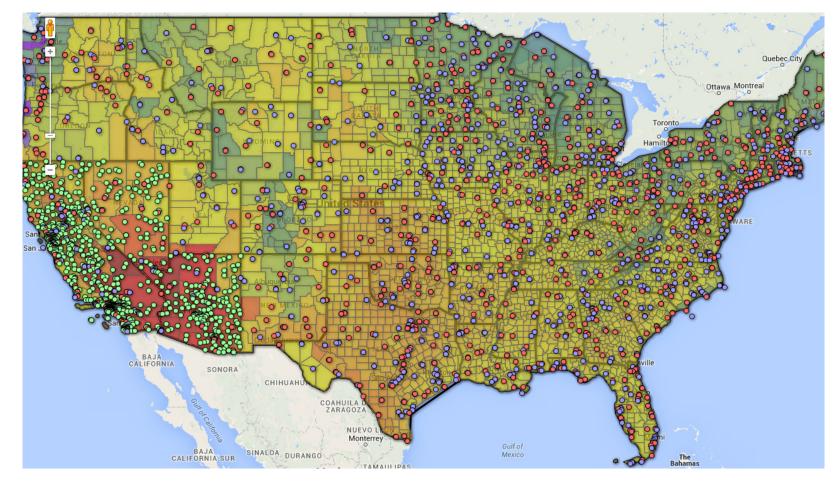
\$EPA

SEPA

Energy ENERGY STAR

New & upcoming resources coming to help you succeed

1. County-level design temperature limits



Energy STAR

New & upcoming resources coming to help you succeed

2. Short informative videos about measuring ventilation airflow



Energy STAR

New & upcoming resources coming to help you succeed

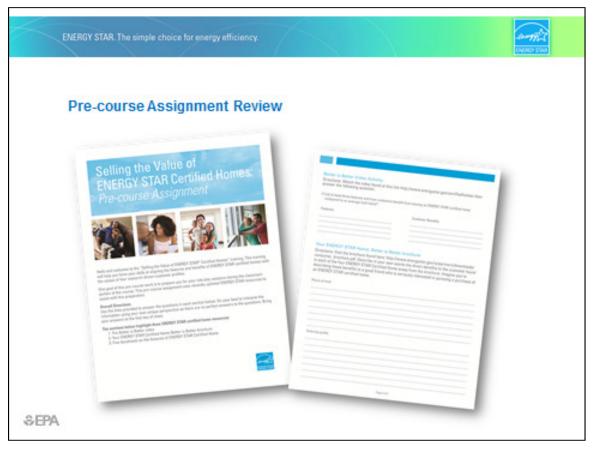
3. Short informative videos about measuring HVAC fan airflow





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

\$EPA



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 Fe	bruary 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?						