

A Second Look: Enhancing HERS with ENERGY STAR

RESNET 2016 – February 29th

1:30 PM





Agenda

- Industry terminology:
 - What Granite and Horse Racing has to do with the HERS Index
- Marketing wins = Fancy Dinners & Engagement rings
 - Because explaining items in appealing & familiar terminology is important
- Costs associated with a HERS Rating/ENERGY STAR
 - Revision 08
 - When a builder stops paying
 - How to transition a builder from the HERS Index to ENERGY STAR and save them money

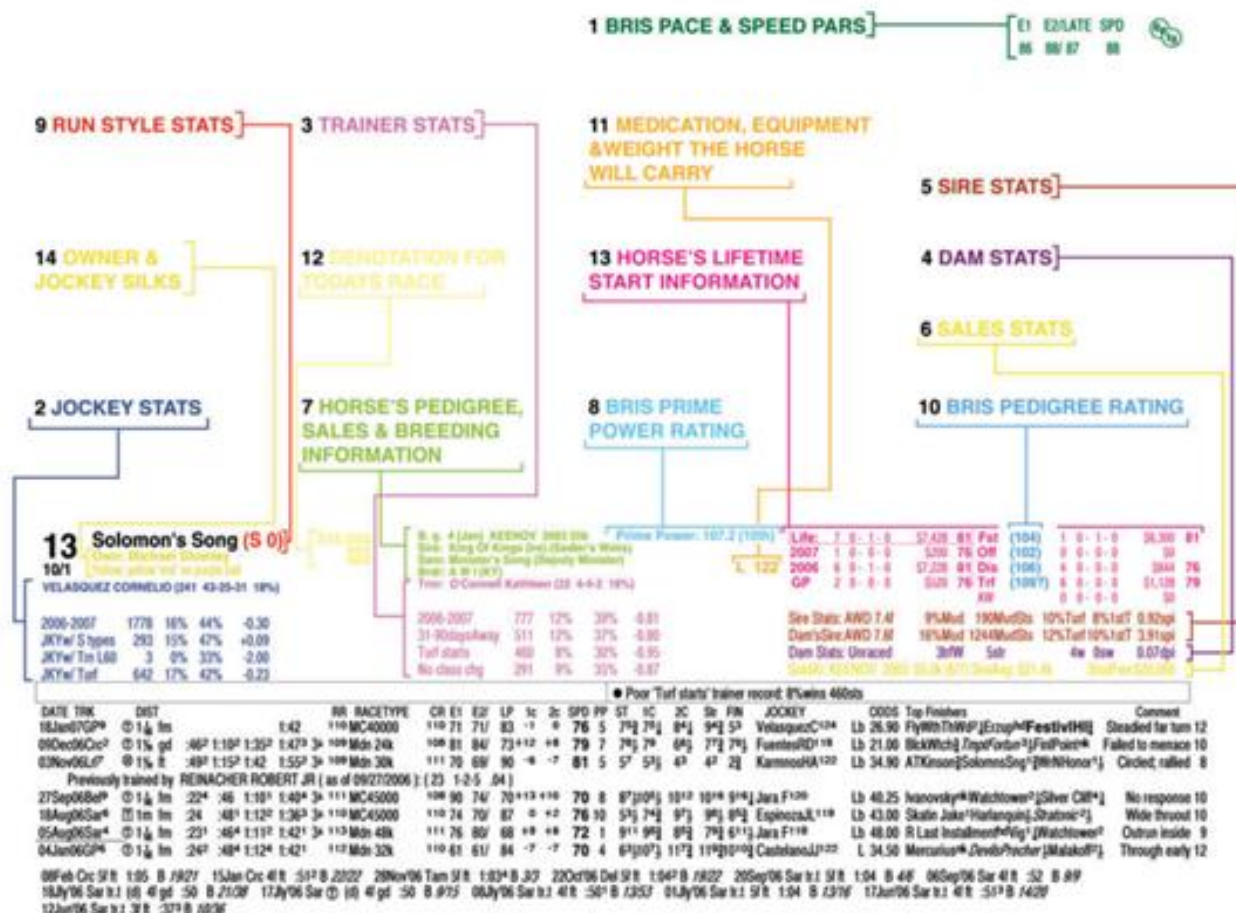




ENERGY STAR. The simple choice for energy efficiency.



ULTIMATE PPs WITH COMMENTS EXPLANATION Pt. 1



RACE SUMMARY EXPLANATION

3 Average Distance/ Surface pace and speed ratings

4 Horse Info

5 Previous Race Ratings

6 Racing Speed Average

7 Pedigree Statistics

8 ACL

9 Mud Speed

10 Date of race, track, & race number

11 Distance, Surface & track conditions

12 Race Type

13 Jockey + Weight

14 Positive & Negative Comments

15 Fractional time of leader, winning time & sign designation

16 Bris Race Rating & Class Rating

17 Horse's Post Position, placement throughout the race, & finish position

18 Medication, Equipment, & Odds

19 Top 3 finishers, comments & number of starters

20 Workout Information

21 Bris Race Shapes

22 Race Summary

23 Race Results

24 Race Statistics

25 Race Comments

26 Race Notes

27 Race History

28 Race Pedigree

29 Race Sire's AWD

30 Race Dam's AWD

31 Race Sire's %

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4 Vibrs (E/P 3)

Own: Mike Tarp
 Red, white cross, red legs on white sleeves
 CASTRO E (175 16-17-25 19%)

\$50,000 Ch. m. 7 FTFEBF 2002 1150K
 Sire: Beau Genius (Bold Ruckus) \$4,000
 Dam: Prospects Hope (Northern Prospect)
 Bro: Clarke Levarato (FL)
 Trar: Romans Date (28 3-4-6 11%)

Prime Power: 127.9 (1st)

Life: 25 4- 4-2 \$18,000 101 Fat (102) 19 3- 4-1 \$14,770 101
 2006 6 1- 2-1 \$3,645 96 Off (99) 4 1- 0-1 \$23,870 88
 2004 6 0- 0-0 \$5,220 85 Dis (102) 14 2- 2-2 \$87,090 101
 GP 2 0- 0-0 \$700 69 Trf (101) 2 0- 0-0 \$440 85
 AW 2 0- 1-1 \$6,490 87

2006-2007 1489 14% 44% -0.46
 JKYwEP types 363 17% 48% -0.71
 JKYw Trm L60 4 25% 50% +1.65
 JKYw Sprints 684 13% 42% -0.81

2006-2007 833 17% 47% -0.40
 +90+ days away 249 19% 47% +0.09
 +Shipper 483 21% 48% +0.21
 Up 2+ classes 6 17% 67% -1.07

See Stats: AWD 6.5f 14% Mud 1495 MudSis 1.54api
 Dam's See: AWD 6.3f 12% Mud 1638 MudSis 1.34api

★ Sharp if worked (Feb09) ★ Won last race (CD 11:08 6.5f Out muddy ICin 25000)

★ Has not raced for more than 2 months

DATE	TRK	DIST	BR	RACE TYPE	CH	E1	E2	LP	3c	3c	SPD	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	JOCKEY	ODDS	Top Finisher	Comment	
08Nov06	CD4	6.5 my*	113	C25000	115	92	107	73	19	19	88	2	6	11	24	31	37	41	45	49	53	Guidy M ¹⁷⁰	Lb 1.10	Vibrs Tide Runner	Superdy Gen*	Inside, brisky edged 7
21Oct06	Kas	6f	113	C25000	115	82	90	91	11	11	87	3	10	10	10	10	10	10	10	10	10	Guidy M ¹⁷⁰	Lb 4.30	Artid Launch*	Genip Jule*	10le 11
07Sep06	TP*	6f	113	C25000	116	89	95	94	11	11	86	1	1	1	1	1	1	1	1	1	1	Loparoux J ¹¹⁵	Lb 1.10	Moonlit Romance*	Vibrs	2.1 E Rose*
02Jy06	CD	6.5 f	115	C50000	113	86	86	76	17	17	75	1	1	1	1	1	1	1	1	1	1	Guidy M ¹⁷⁰	Lb 2.40	Electric Colt*	Guidy Gen*	Ron Doyle*
29May06	CD	6f	114	C30000	118	94	105	87	17	17	96	1	2	11	11	11	11	11	11	11	11	Douglas R ¹⁷⁰	Lb 5.10	Electric Colt*	Vibrs	Tide Runner*
13Apr06	Ker	6f	115	A62000	114	94	95	70	17	17	77	1	1	1	1	1	1	1	1	1	1	Douglas R ¹⁷⁰	Lb 6.10	Flying Fie*	JCin Tr*	Sghs*
10Oct06	Ker	7f	115	C65000	109	95	96	39	17	17	61	1	2	1	1	1	1	1	1	1	1	Fragose P ¹¹⁰	Lb 12.40	Ship Over	Mrs. M ¹⁷⁰	Give And Take*
26Aug04	Sar	6f	114	COC50000	113	97	107	68	11	11	82	1	1	1	1	1	1	1	1	1	1	Albarado R ¹¹⁰	Lb 20.50	Elegit Mobs*	Widde*	SMacho*
05Jy04	Bel	6f	118	A49000	112	101	106	56	17	17	71	1	1	1	1	1	1	1	1	1	1	Santos JA ¹¹⁰	Lb 15.70	Belong To*	Datsch Kln	Karyn*
17Apr04	GP*	5f	115	Relate 3B	115	90	91				85	1	1	1	1	1	1	1	1	1	1	Douglas R ¹⁷⁰	Lb 20.10	Maly OCl*	Dash Moon*	JFom*

●09Feb Prem 4fB :48 H 122/ 31Jan Prem 10 4fB :51 6 232/ 22Jan Prem 4fB :49 B 877 13Jan Prem 4fB :48 H 45/ 31Dec06 Prem 4fB :48 H 89/ 23Dec06 Prem 4fB :48 H 116/ 06Oct06 CD 4fB :48 B 53/ 24Aug06 CD 4fB :49 B 193/ 23May06 CD 5fB :100 B 312 28Apr06 CD 4fB :50 B 243/ 28Mar06 CD 4fB :46 B 177 ●10Mar06 CD 5fB :59 B 17

[2 Date of race, track, & race number]

[3 Distance, Surface & track conditions]

[6 Race Type]

[9 Jockey + Weight]

[1 Positive & Negative Comments]

[4 Fractional time of leader, winning time & age designation]

[7 Bris pace & speed ratings]

[10 Medication, Equipment, & Odds]

[5 Bris Race Rating & Class Rating]

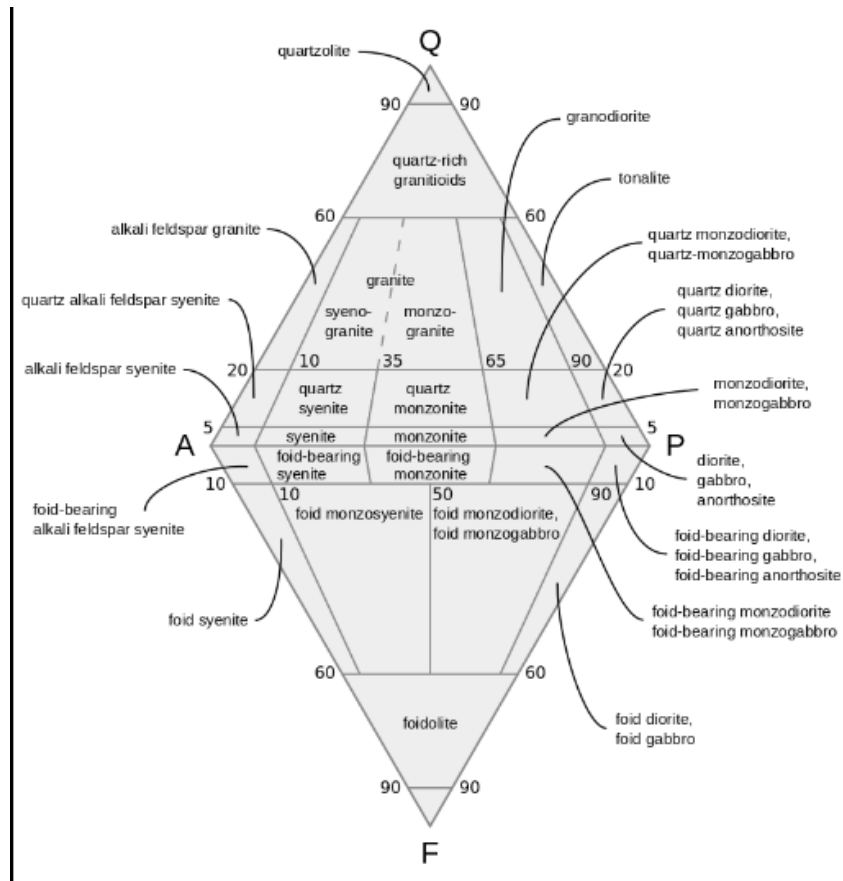
[8 Horse's Post Position, placement throughout the race, + finish position]

[11 Top 3 finishers, comments & number of starters]

[12 Workout Information]

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Granite – Digging Deep



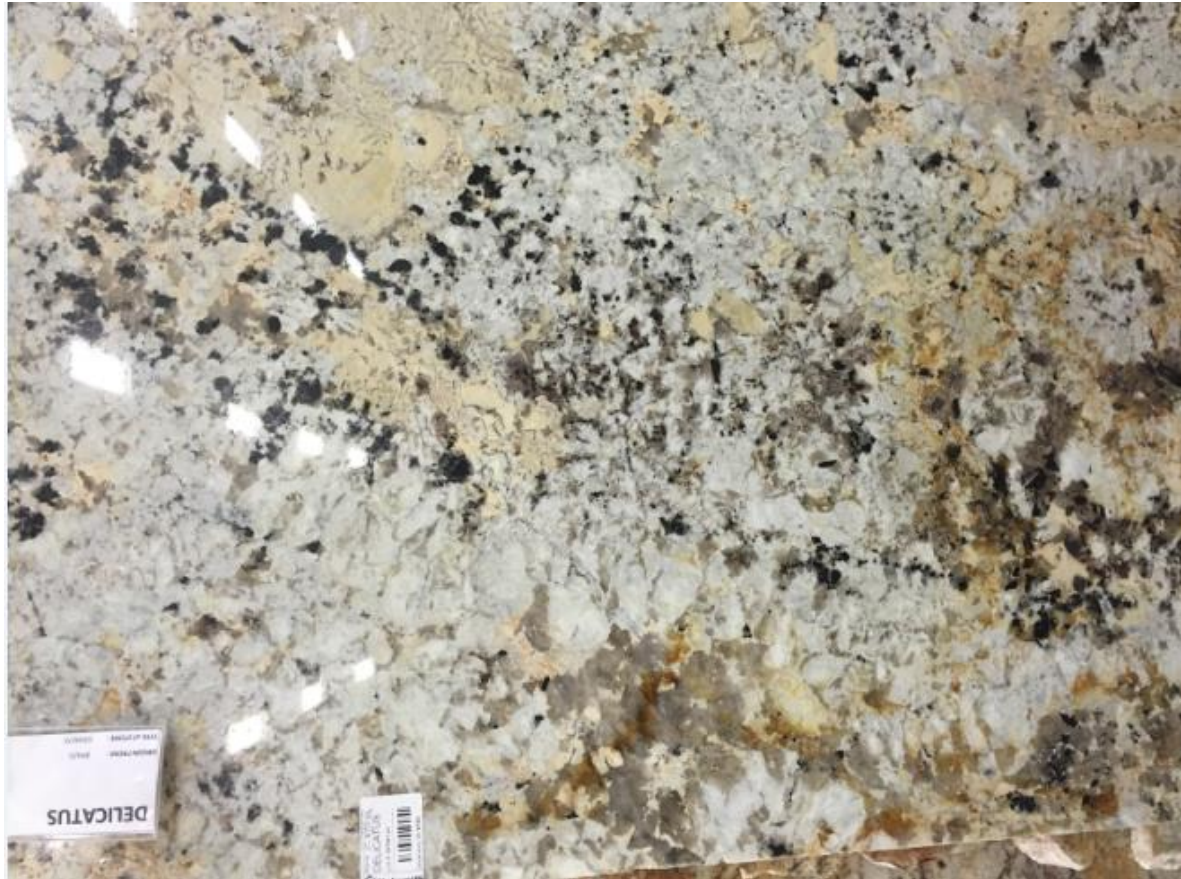
Granite – Digging Deep



Granite - Digging Deep



Granite - Digging Deep



Granite – Digging Deep



Granite – Digging Deep





And what is it whittled down to?

- Will I win money?
- Does it look good in my kitchen?

Marketing Achievements: Getting people to pay premium prices for Slimeheads and Drill Bits



Slimeheads and Toothfishes



Slimeheads and Toothfishes



Slimeheads, Toothfish, Sea Urchin

- Slimehead = Orange Roughy
- Toothfish = Chilean Sea Bass
- Sea Urchin = Uni
- The marketing transformation took decades



Drill bits and saw Monopoly





Marketing FTW

- No one wanted to eat Slimeheads, lobster's, Harlot's eggs, or Patagonia Toothfish
- No one wanted a small piece of rock on their finger until marketers made us associate love with diamonds.
- Nobody knew they needed personal TV's that also worked as phones, or watches that tracked how many steps we took.
- How does this relate back to ENERGY STAR Certified Homes?

The Value of ENERGY STAR



The Value of ENERGY STAR

1. Branding.



ENERGY STAR. The simple choice for energy efficiency.



Every single day,
consumers choose
ENERGY STAR
products more than

800,000 times



ENERGY STAR. The simple choice for energy efficiency.



Awareness
now exceeds **85%** and preference
is **growing**





The Value of ENERGY STAR

1. Branding.



<https://www.youtube.com/watch?v=SDaggV6OK8w>

Or search for "ENERGY STAR Better is Better"



The Value of ENERGY STAR

1. Branding.
2. Preparing for code.

The Value of ENERGY STAR

1. Branding.
2. Preparing for code.
3. Risk mitigation.



The Value of ENERGY STAR

1. Branding.
2. Preparing for code.
3. Risk mitigation.



Sales Training Kit

- What we use to sell people on so they live on a swamp



How to Use It

- The training consists of two 1-hour long modules:
 - Can be completed all at once or in two sessions
 - Designed to be presented during your regularly scheduled sales meetings
- Many resources are provided to help the trainer implement the training.

ENERGY STAR® for HOMES PARTNERS IMPORTANT RESOURCES TO REMEMBER

General ENERGY STAR Resources

Resource	Where to go for more information
ENERGY STAR for New Homes Partner Page	www.energystar.gov/newhomespartners
My ENERGY STAR Account, where you can update your company's contact information	www.energystar.gov/mesa
Partner Locator	www.energystar.gov/partnerlocator
Frequently Asked Questions & Answers	www.energystar.gov/faqs
Tax Credit Information	www.energystar.gov/taxcredits
Training Requirements	www.energystar.gov/newhomestraining

Marketing and Educational Resources

Resource	Where to go for more information
Marketing Resources	www.energystar.gov/newhomesmarketing
Educational Resources	www.energystar.gov/newhomeducation
ENERGY STAR Logos and Identity Guidelines	www.energystar.gov/logos
Weblinking Policy for ENERGY STAR's Partner Locator	www.energystar.gov/weblinking
100% Commitment	www.energystar.gov/mesa in the "My ENERGY STAR Program(s)" section under the link for "Homebuilder"
Consumer Brochures	www.energystar.gov/publications
Printable Home Features Fact Sheets	www.energystar.gov/newhomefactsheets
Upcoming Live Webinar Calendar	www.energystar.gov/newhomeswebinars
Partner of the Year Awards	www.energystar.gov/awards

Technical Resources

Resource	Where to go for more information
<ul style="list-style-type: none"> • National Program Requirements • Regional Specifications • Sector-Specific Policies • Implementation Timeline • Checklists • Policy Changes and Clarifications 	www.energystar.gov/newhomesguidelines
ENERGY STAR Certified Multifamily High Rise Program	www.energystar.gov/mfhr

Other EPA Programs

Program	Where to go for more information
Indoor airPLUS	www.epa.gov/indoorairplus
WaterSense®	www.epa.gov/watersense

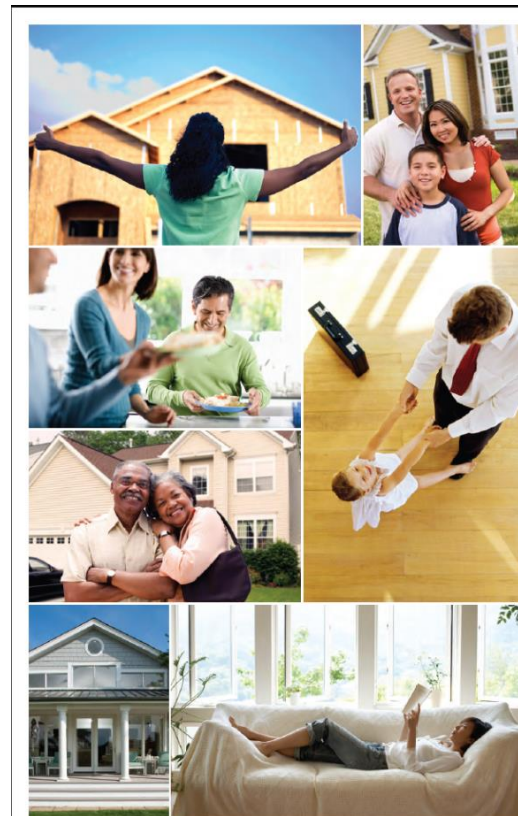


The Resources

1. **Trainer's Guide** that provides the course agenda, learning objectives and step-by-step instructions on how to prepare for the training.
2. **Participant Guide** combined with four in-class activities and an optional field activity.
3. **Participant Guide: *Trainer's Version*** to assist in facilitation of activities.
4. **PowerPoint** with speaker's notes providing the point of each slide and optional narration.
5. **Optional Q&A** to test participants
6. **Certificate of Completion**

Consumer Brochure

(www.energystar.gov/publications)



The little label with a big message. Better is Better.

At first glance, it may seem like a small thing. Your new home's ENERGY STAR label measures just three by five inches. But what it stands for is really big.

The ENERGY STAR label means that your new home has been designed and built to standards well above most other homes on the market today. It means better quality, better comfort, and better durability. It also means that your new home is a better value for today, and a better investment for tomorrow. And it means that your home has undergone a better process of inspections, testing, and verification to ensure that it meets strict requirements set by the U.S. Environmental Protection Agency (EPA).

New homes that earn the ENERGY STAR label deliver energy efficiency savings of up to 30 percent when compared to typical new homes—and the difference is even more striking when put side-by-side with most resale homes.

Every ENERGY STAR certified new home also helps protect our environment. So far, these homes have helped to avoid greenhouse gas emissions equivalent to those from more than 450,000 vehicles.

This better approach to building results in a new home that brings peace of mind, enduring quality, wall-to-wall comfort, and proven value. Your ENERGY STAR certified new home has simply been built better in every way.

ENERGY STAR. It's the little label with a big message: **Better is Better.**

Rev. 08 is Great



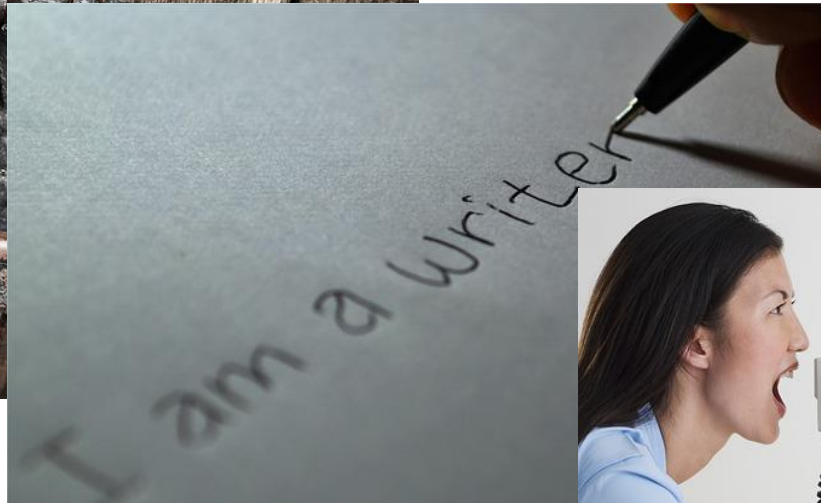
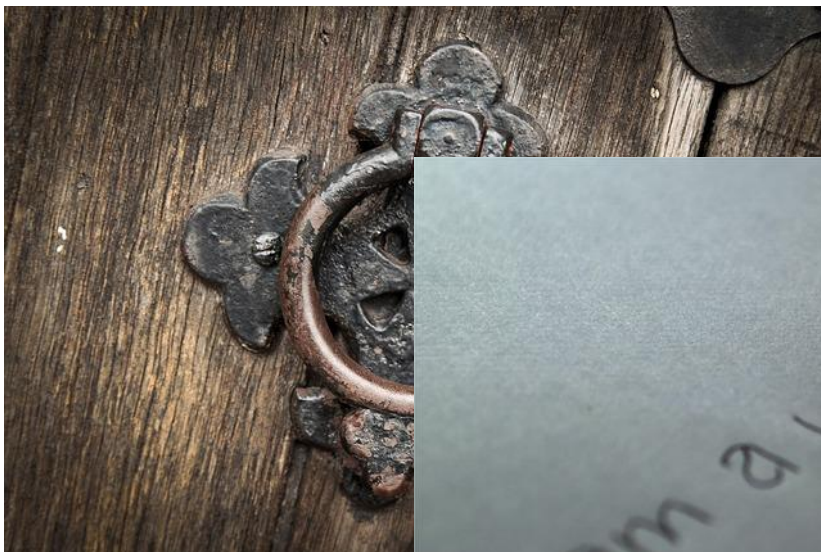


What is a Revision 08?

- 1 It clarifies
- 2 It simplifies
- 3 It improves

What is a Revision 08?

It's driven entirely by your feedback



Partner feedback: Too much paperwork



Solution: Reduce paperwork collection to a single-page

Partner feedback: Challenging workflow



Solution: Front-load req.'s to design stage & simplify final inspection

Partner feedback: More HVAC training & resources needed



Solution: Develop videos and build upon existing platforms



Summary: Why Rev. 08 is Great

For Raters:

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

For Builders:

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

How to transform your builder from a HERS Rated home to an ENERGY STAR home

In 5 easy steps





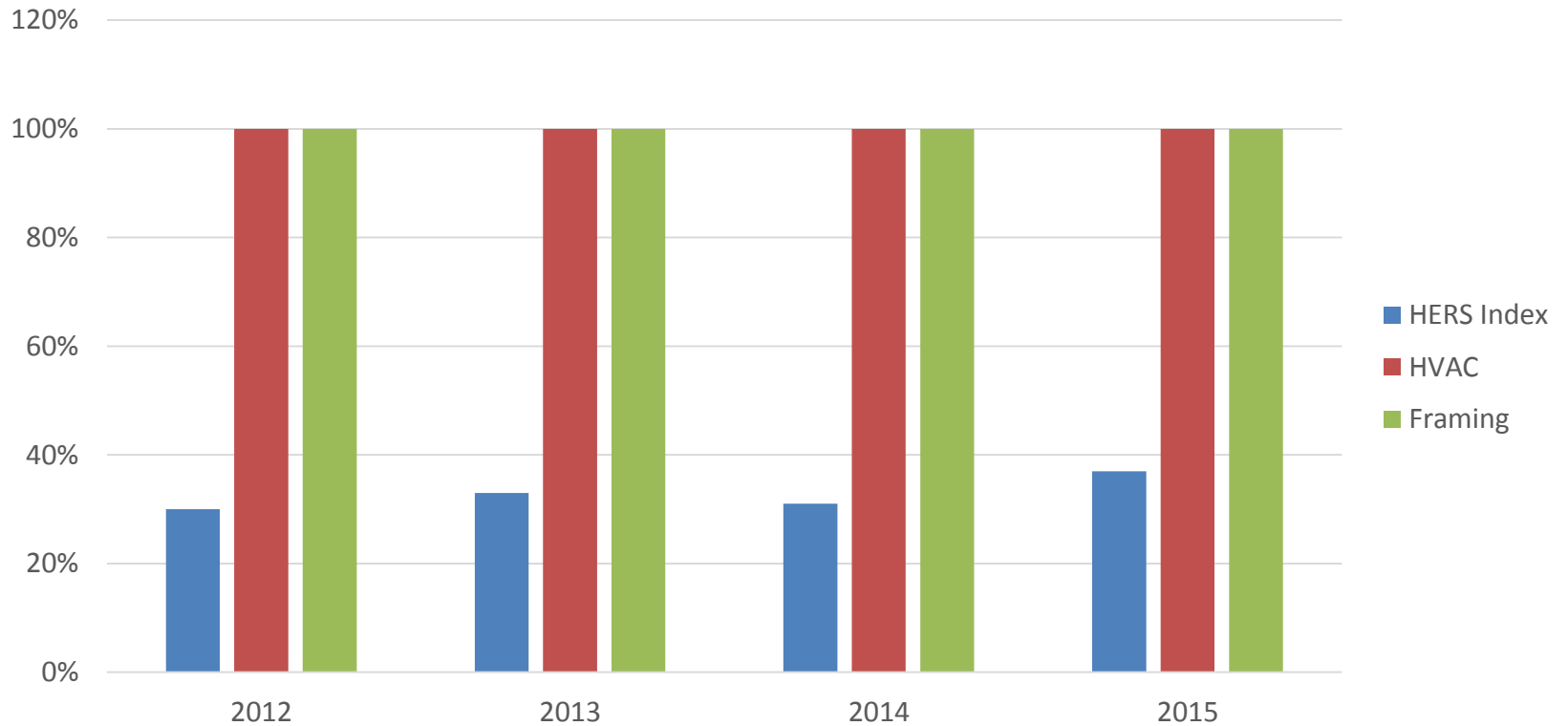
What's a builder really paying for?

- Currently for a HERS Index, a builder is paying Raters to assess the energy performance of his house.
- Why does he care about the energy performance of his house?
 - A utility is giving them money to care.
 - He's trying to sell more of his homes.
- Compared to virtually every other subcontractor, lowest cost subcontractor.



Market penetration for building houses

Market Penetration of subcontractors





Assess the costs associated with the HERS Index

- The national average HERS Index over for 2013 was 64, in 2014 was 63, and as of right now the guess is that it is somewhere in the mid to low 60s for 2015.
- The average HERS Index for a home to meet ENERGY STAR ranges from 75 to 68 depending on the size of the house.
- That means builders are paying a premium for an additional 5 to 8 HERS Index points.
- If builders are only doing the HERS Index as a marketing ploy, how can we help them transition to ENERGY STAR, while saving money?



Find the difference between ENERGY STAR and HERS Index

House Characteristics:

- Built in Abilene Texas
- Square footage = 2917 square feet
- Bedrooms = 4
- Home type = Single Family Detached
- HERS Index = 66
- Target HERS Index to meet ENERGY STAR = 69

Let's make some costs cuts!



Find the difference between ENERGY STAR and HERS Index

Areas of Focus:

- Insulation
- HVAC
- Infiltration
- Lighting

Insulation recommendation

Rim and Band Joist Properties Summary

#	Name	Area	Contin Ins	Framed Ins
1	Exposed	70.3	3.0	13.0
2	Attic	21.0	3.0	13.0

New
Delete

Rim and Band Joist Properties

Name:
Joist Cavity Ins (R-value):

Area (sq ft):
Joist Cavity Ins Thickness:

Continuous Ins (R-value):
Insulation Grade:

Joist Spacing (in. o.c.):

Location:

Programs

V3.0 ENERGY STAR	Passes
V3.0* ENERGY STAR Gu...	Passes
V3.1 ENERGY STAR	Fails
Tax Credit	Fails
DOE Zero Energy Ready ...	Fails
HERS Index	66
NY HERS Score	N/A

Insulation recommendation

Rim and Band Joist Properties Summary

#	Name	Area	Contin Ins	Framed Ins	Thi
1	Exposed	70.3	0.0	13.0	
2	Attic	21.0	0.0	13.0	

New Delete

Rim and Band Joist Properties



Name: Joist Cavity Ins (R-value)

Area (sq ft): Joist Cavity Ins Thickness

Continuous Ins (R-value): Insulation Grade:

Joist Spacing (in. o.c.):

Location:

Programs

V3.0 ENERGY STAR	Passes
V3.0* ENERGY STAR Gu...	Passes
V3.1 ENERGY STAR	Fails
Tax Credit	Fails
DOE Zero Energy Ready ...	Fails
HERS Index	66
NY HERS Score	N/A

Insulation Recommendation

Above-Grade Wall Type Library

Component	U-Value	State
R-11 Steel Framed	0.130	
Mobile Home Wall	0.104	
ICF Wall R-20	0.046	
ICF Wall R-15	0.059	
Max Wood Std U-0.222	0.222	
Max Mason Std U-0.25	0.249	
R-13, R-0.2 Grd I**	0.083	tmp
R-13 Grd I**	0.080	tmp

New Delete Cut Copy Paste Up Down

Input Mode: ☒ Quick Fill Site-Built ☐ Path Layer

Wall Type Name: R-13 Grd I**

Wall Construction: Standard Wood Frame

Continuous Insulation R-Value: 0.0 Stud Spacing (in oc): 16.0

Frame Cavity Insulation R-Value: 13.0 Stud Width (in): 1.5

Cavity Insulation Thickness (in): 3.5 Stud Depth (in): 3.5

Cavity Insulation Grade: I Framing Factor: 0.1900

Block Cavity Insulation R-Value: 0.0 Use Default ☐

Gypsum Thickness (in): 0.500

Note:

OK Cancel Help

HVAC Equipment

#	Type
1	80 AFUE Gas Furn 48k
2	80 AFUE Gas Furn 36k
3	16SEER A/C 3.5 ton**
4	16SEER A/C 2.5 ton**
5	40 gal. 0.62EF Gas**

Programs	
V3.0 ENERGY STAR	Passes
V3.0* ENERGY STAR Gu...	Passes
V3.1 ENERGY STAR	Fails
Tax Credit	Fails
DOE Zero Energy Ready ...	Fails
HERS Index	66
NY HERS Score	N/A

#	Type
1	80 AFUE Gas Furn 48k**
2	80 AFUE Gas Furn 36k**
3	16SEER A/C 3.5 ton**
4	16SEER A/C 2.5 ton**
5	40 gal. 0.62EF Gas**

Programs	
V3.0 ENERGY STAR	Passes
V3.0* ENERGY STAR Gu...	Passes
V3.1 ENERGY STAR	Fails
Tax Credit	Fails
DOE Zero Energy Ready ...	Fails
HERS Index	68
NY HERS Score	N/A

Infiltration

Whole House Infiltration

Measurement Type:

Heating Season Infiltration Value: CFM @ 50 Pascals

Cooling Season Infiltration Value:

Shelter Class:

Code Verification:

Programs

V3.0 ENERGY STAR	Passes
V3.0* ENERGY STAR Gu...	Passes
V3.1 ENERGY STAR	Fails
Tax Credit	Fails
DOE Zero Energy Ready ...	Fails
HERS Index	68
NY HERS Score	N/A

Code

Whole House Infiltration

Measurement Type:

Heating Season Infiltration Value: CFM @ 50 Pascals

Cooling Season Infiltration Value:

Shelter Class:

Code Verification:

Programs

V3.0 ENERGY STAR	Fails
V3.0* ENERGY STAR Gu...	Passes
V3.1 ENERGY STAR	Fails
Tax Credit	Fails
DOE Zero Energy Ready ...	Fails
HERS Index	70
NY HERS Score	N/A

Lighting

Lighting	CFL (%): <input type="text" value="85.0"/>		Interior Fixtures	Exterior Fixtures(%): <input type="text" value="100.0"/>
	Pin-Based FL (%): <input type="text" value="0.0"/>			Garage Fixtures(%): <input type="text" value="100.0"/>
Lighting	<input checked="" type="checkbox"/> Programs			
CFL (%):	V3.0 ENERGY STAR Passes			(%): <input type="text" value="100.0"/>
Pin-Based	V3.0* ENERGY STAR Gu... Passes			(%): <input type="text" value="100.0"/>
	V3.1 ENERGY STAR Fails			
	Tax Credit Fails			
	DOE Zero Energy Ready ... Fails			
	HERS Index 69			
	NY HERS Score N/A			



HERS to ENERGY STAR

Measure	HERS Points
Removed costs associated with flash and batt insulation at the rim joists	HERS Index up 2 points
Advanced Framing techniques	No Change
16 SEER AC to 14.5 SEER AC	HERS Index up 2 points
Increased lighting from 85% to 100%	HERS Index down 1 point
Reduce Cooling Size of AC Units	No Impact
Total	HERS 69 and ENERGY STAR



Cost Savings

Measure	Costs saved
Removed costs associated with flash and batt insulation at the rim joists	\$400
Advanced Framing techniques	\$150
16 SEER AC to 14.5 SEER AC	\$600
Increased lighting from 85% to 100%	(-\$50)
Reduce Cooling Size of AC Units	\$250
Total	\$1400



1

Design Review

Measure	Cost over HERS
Credentialed HVAC contractor	+\$25
HVAC designer completes <u>ENERGY STAR HVAC Design Report</u>	+\$15
Whole-house ventilation system	+\$150 to \$375
Rater completes <u>Rater Design Review Checklist</u>	+\$25
Total	-\$215 - \$440



2

Pre-Drywall Inspection

Measure	Cost over HERS
Rater completes pre-drywall tasks on the Rater Field Checklist	+\$75



3

Final Inspection

Measure	Cost over HERS
Contractor & Rater conduct static pressure test	-\$25
Contractor conducts refrigerant charge test	-\$25
Contractor fills out <u>HVAC Commissioning Checklist</u>	-\$25
Bedroom comfort vents & verification	-\$200
Rater verifies vent. system, exhaust fans, & filter; completes remaining Rater Field Checklist	-\$50
Total	-\$325



4

Total Savings

Measure	Cost over HERS
Total Savings from going from HERS 66 to HERS 69	\$1400
Total Costs going from HERS Index House to ENERGY STAR	\$615 - \$840
Total Savings for the builder	\$560 - \$785



Summary

- ENERGY STAR offers branding and sales support to help builders market their homes.
- For builders pursuing low HERS Index, opportunity for significant cost savings on per house basis.



ENERGY STAR Certified Homes

Web:

Main: www.energystar.gov/newhomespartners
Technical: www.energystar.gov/newhomesguidelines
Training: www.energystar.gov/newhomestraining
HVAC: www.energystar.gov/newhomesHVAC

Email:

energystarhomes@energystar.gov

Social Media:



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