

EMBRACING THE HERS INDEX



Introduction

*Ross Anderson
Residential Science Resources*

- *RESNET Certified Rater*
- *RESNET QA Provider*
- *RESNET Training Provider*
- *Utility Program Implementer*

Overview

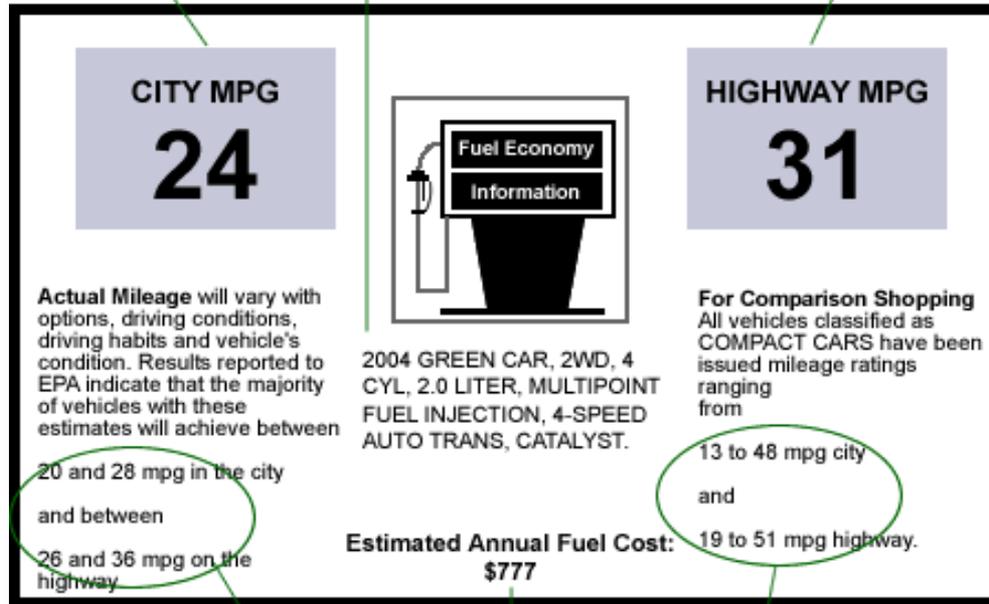
- *What is HERS?*
- *What is a HERS Rater?*
- *How is the HERS Index Generated?*
- *How is the HERS Index Being Used?*
- *How do I Become a Certified Rater?*

What is HERS?

Average estimate for city driving.

Vehicle characteristics, such as model year, name, engine size, number of cylinders, transmission type, and fuel system type.

Average estimate for highway driving.



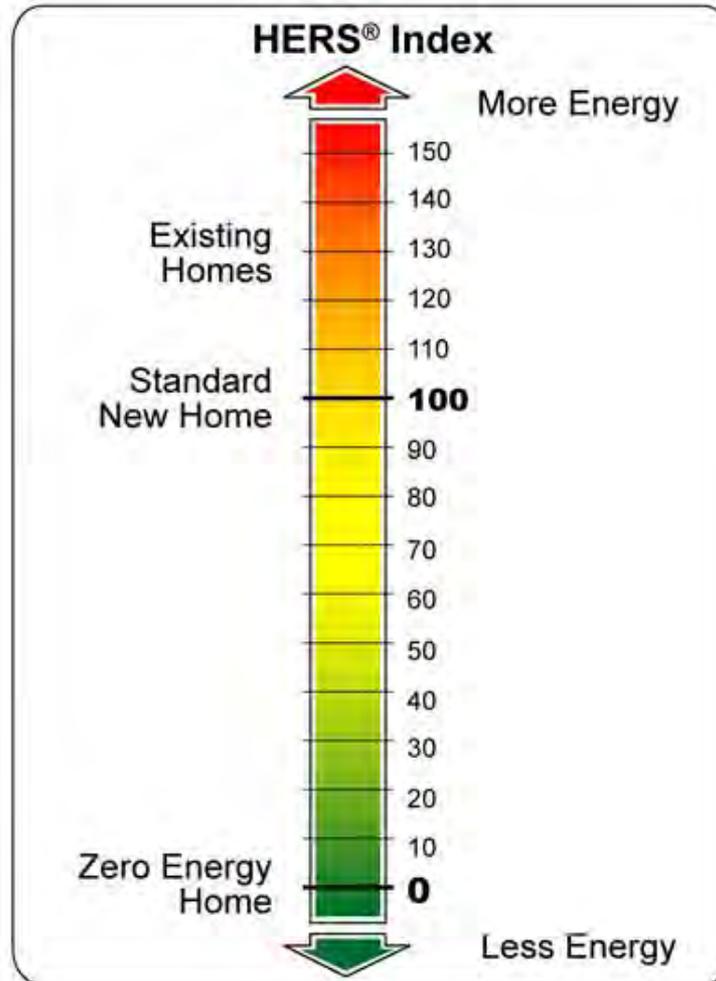
Fuel economy range that most drivers achieve with this particular model.

Annual fuel cost estimate based on 15,000 miles/yr usage and an average per-gallon fuel price determined by EPA.

Fuel economy range for other models of this size class.

HERS INDEX

The MPG of your Home!



What is a Certified Home Energy Rater

A Certified Home Energy Rater or Rater is a person trained and certified by an accredited Home Energy Rating Provider to inspect and evaluate a home's energy features, prepare a home energy rating and make recommendations for improvements that will save the homeowner energy and money.



THE SCIENCE OF
BETTER BUILDING

What is a Certified Home Energy Rater

How does a Rater compare to an Auditor?



THE SCIENCE OF
BETTER BUILDING

What is The History of RESNET

Back in 1981, a group of mortgage industry leaders got together to set up the National Shelter Industry Energy Advisory Council. The purpose of the Council was two-fold:

1. To establish a way to measure the financial savings generated by energy efficient features in a home
2. To credit that home's energy efficiency in the mortgage loan



THE SCIENCE OF
BETTER BUILDING

What is The History of RESNET

The history of energy mortgages dates back to the early 1980s when Fannie Mae, Freddie Mac, the U.S. Department of Housing and Urban Affairs, Federal Housing Administration (FHA) and the Veterans Administration (VA) all adopted energy mortgage programs. These programs, however, were not widely used due to a number of reasons including:

What is The History of RESNET

1. A lack of consumer and lender awareness
2. No uniform method of efficiency evaluation (except in a few states with home energy rating systems)
3. Complicated program procedures

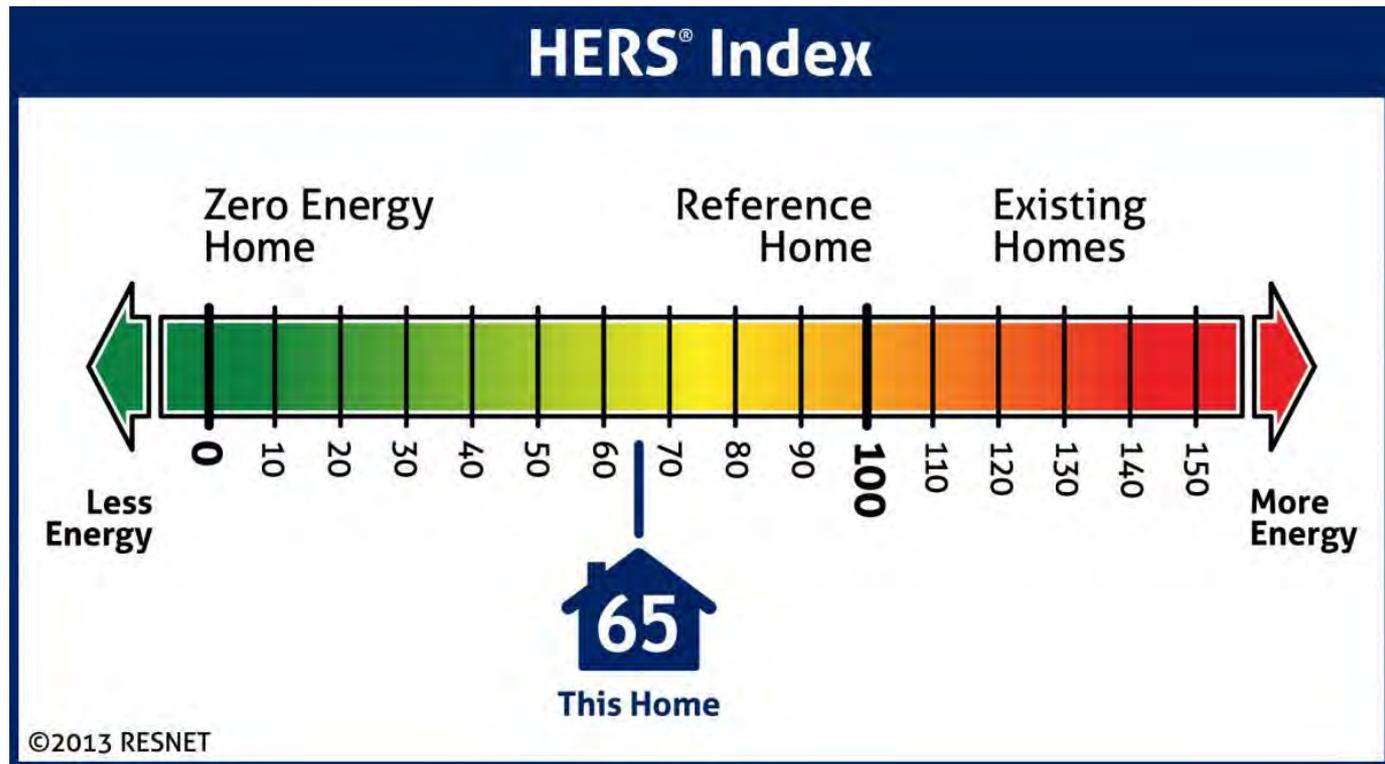
What is The History of RESNET

In April 1995, representatives of the national mortgage industry, the National Association of State Energy Officials, and Energy Rated Homes of America decided to do something about this by founding the Residential Energy Services Network (RESNET). RESNET's task was to develop national standards for home energy ratings and to create a market for home energy rating systems and energy mortgages.



THE SCIENCE OF
BETTER BUILDING

How to Generate a HERS Index



Framing inspection



Framing inspection





Insulation inspection



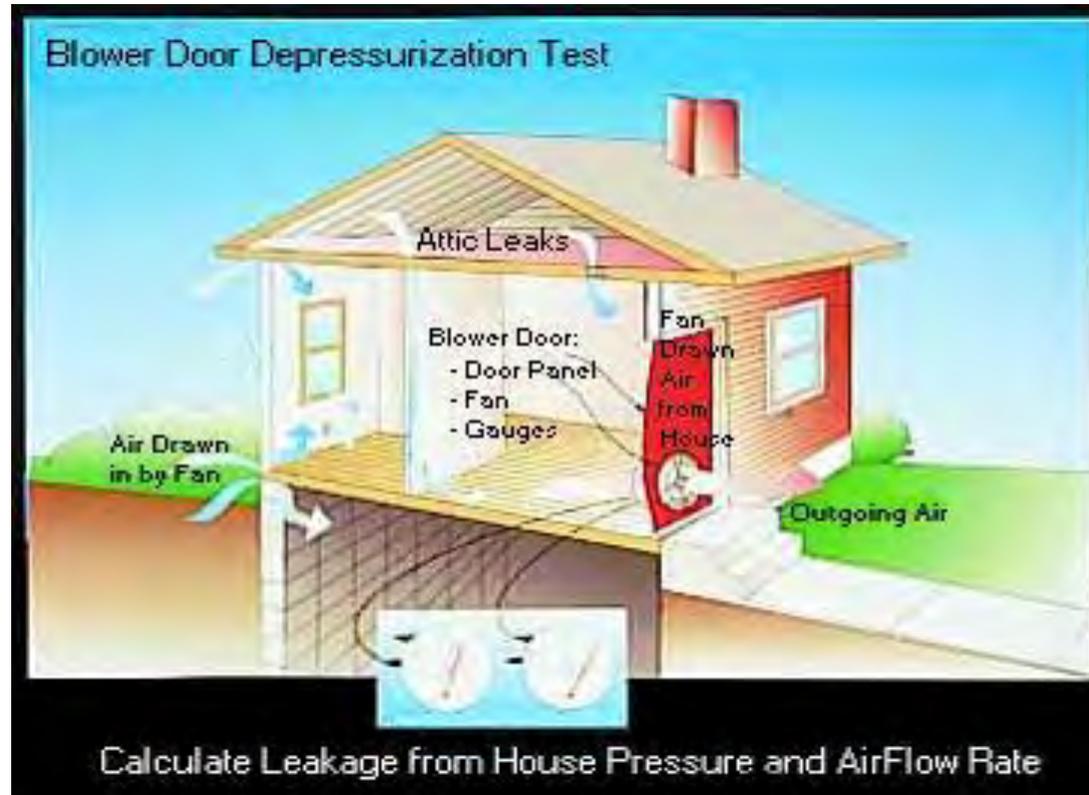
Insulation inspection



Blower Door Test

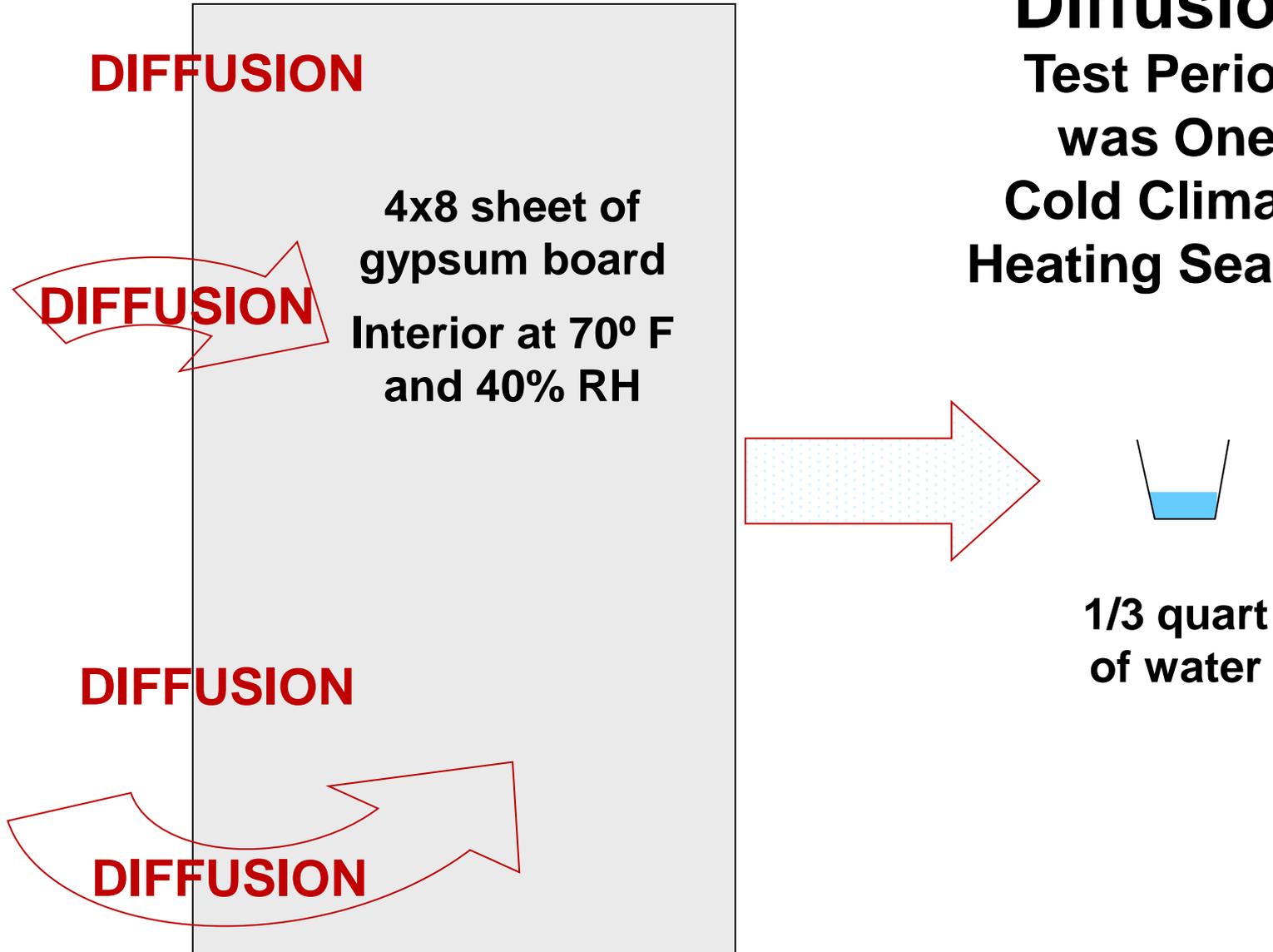


Blower Door Test



Diffusion

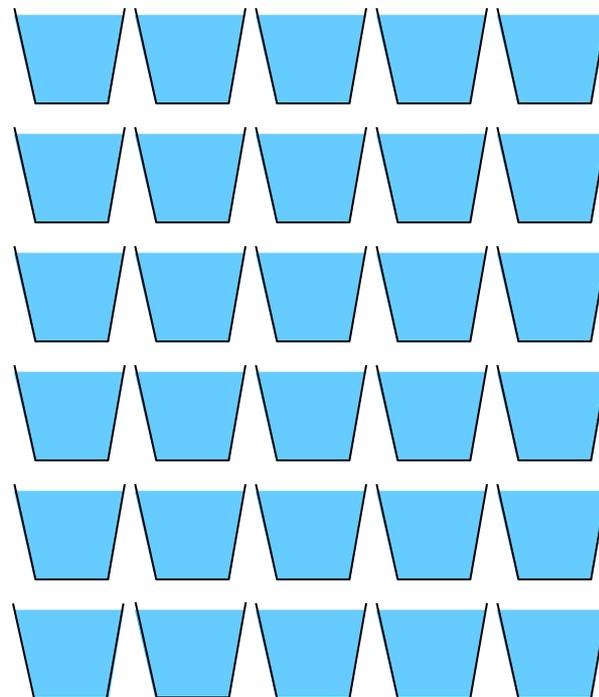
Test Period
was One
Cold Climate
Heating Season



Air Transported Moisture

**Test Period
was One
Cold Climate
Heating Season**

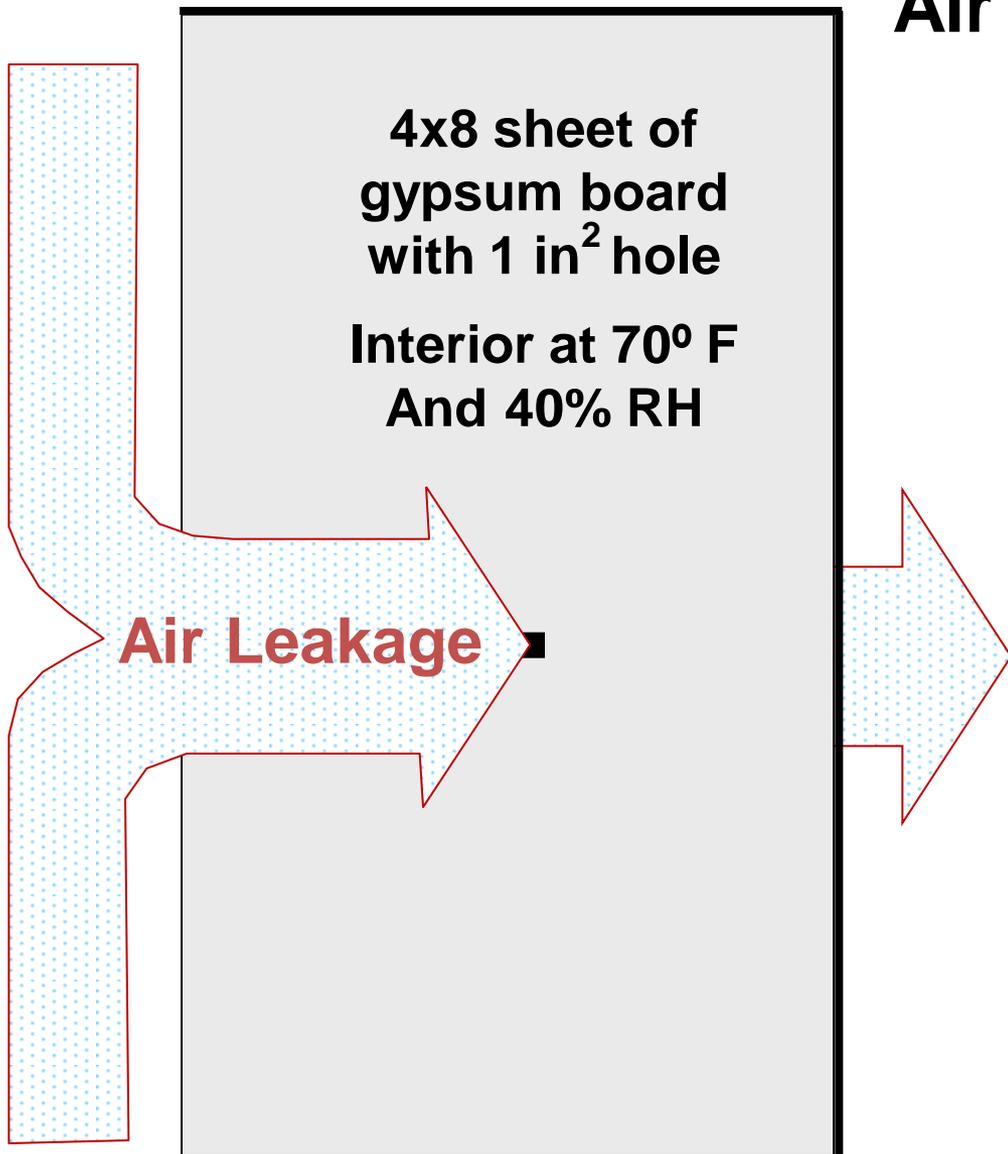
**30 quarts
of water**



**4x8 sheet of
gypsum board
with 1 in² hole**

**Interior at 70° F
And 40% RH**

Air Leakage



Duct Blaster Test



HVAC System Assessment



HVAC System Assessment



Infrared Images



Infrared Images



CONSULTING REPORTS

Framing

Insulation

Final Testing




Framing Site Walk Report

RSR File Number: 08-XE-123-01 Site Walk Date: May 1, 2008



Home: Jane and John Doe
4520 Summerfield Avenue S, Hometown, MN 5555

Development: Happy Meadows
Cordova

Builder: Greenway Builders
543 Railroad Avenue, Woodbury, MN 55555

Potential Concerns:

1. Blocking missing 6
2. Drainage plane 7
3. Framing/sheathing 8
4. Insulation 9
5. Vapor barrier



Floor system blocking missing
Air from unconditioned spaces can move into floor assemblies if rim joint locations are inadequately sealed. This degrades insulation performance, can lead to uneven floor temperatures and decreased occupant comfort and safety. Install and seal solid blocking at rim joint locations to isolate insulated floors from un-insulated floors, garages and attic spaces.



Apron flashing reversed
Apron flashing installed over house wrap can direct water into the building. Install house wrap shingle fashion over apron flashing to drain water down and out.




08-000-000 Xcel Sample Report Generator for sample reports 08100-000-0 www.residentialscience.com (855) 984-1234 1 of 3




Insulation Site Walk Report

RSR File Number: 08-XE-123-01 Site Walk Date: May 7, 2008



Home: Jane and John Doe
4520 Summerfield Avenue S, Hometown, MN 5555

Development: Happy Meadows
Cordova

Model: Cordova

Builder: Greenway Builders
543 Railroad Avenue, Woodbury, MN 55555

Quality Details



Floor system blocking missing
Air from unconditioned spaces can move into floor assemblies if rim joint locations are inadequately sealed. This degrades insulation performance, can lead to uneven floor temperatures and decreased occupant comfort and safety. Install and seal solid blocking at rim joint locations to isolate insulated floors from un-insulated floors, garages and attic spaces.



Apron flashing reversed
Apron flashing installed over house wrap can direct water into the building. Install house wrap shingle fashion over apron flashing to drain water down and out.



Windows/doors head flashing reversed
Head flashing installed over house wrap can direct water into the building. Install house wrap shingle fashion over head flashings to drain water down and out.



Chase gaps/penetrations
Gaps in chase enclosures can lead to uneven interior surface temperatures and unconditioned air leakage into the structure. Seal all gaps before enclosing the chase.




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Final Testing and Completion Report

RSR File Number: 08-XE-123-01 Site Walk Date: July 5, 2008



Home: Jane and John Doe
4520 Summerfield Avenue S, Hometown, MN 5555

Development: Happy Meadows
Cordova

Model: Cordova

Builder: Greenway Builders
543 Railroad Avenue, Woodbury, MN 55555



Energy Star Rating
This Home meets the Energy Star Requirements

HERS Index	63
Thermal Bypass Checklist (TBC)	Pass
Duct Leakage	Meets
AC Sizing	Verified



Tax Credit Status
This home is 62 % more efficient than the 2004 IECC

Tax Credit Target	137.4	MMBtu/year
Tax Credit Designed	98.8	MMBtu/year

Homes over 50% may be eligible for 2005 EPACT



HERS Index
RESNET Ratings provides a relative energy use index called the HERS Index—a HERS Index of 100 represents the energy use of the "American Standard Building" and an index of 0 (zero) indicates that the Proposed Building uses no net purchased energy (a Zero Energy Building). The HERS Index is a linear metric where every percentage point that a building's energy use is reduced represents a decreased point reduction on the index.

Your home scored a **63**



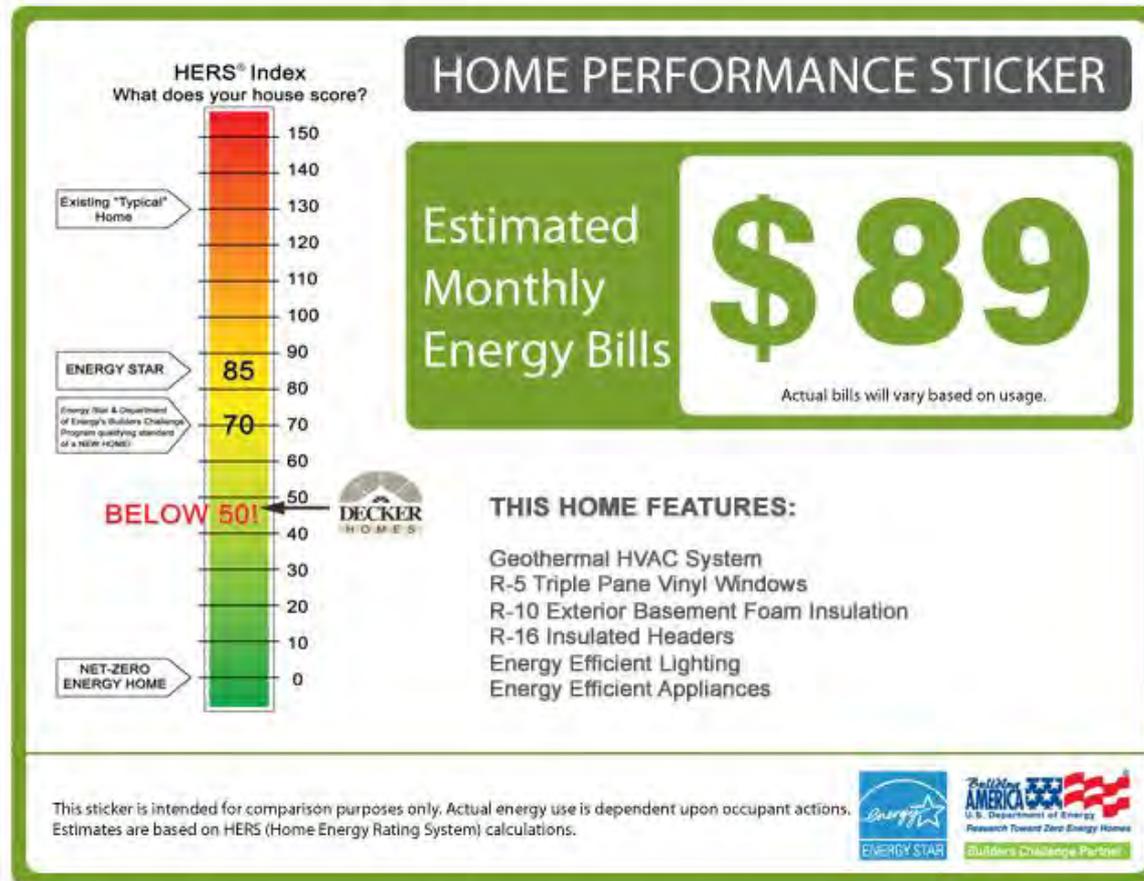
Home Performance Testing Results

Blower Door Results	Duct Leakage Results
Tested CM50: 880	CM25 Leakage to outside: 65
CM50/Sqft of Surface Area: 0.21	Ventilation Flow Results
ACH50: 2.5	Target: 65
CM50/Sqft of Floor Area: 0.25	Actual Flow: 79




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Home MPG Report



How is the HERS Index Being Used By the Building Industry?

What Opportunities are out there to take advantage of??

REGIONAL PARTNERS

Builders

Homebuyers

Raters

Government

Utilities

Realtors

HBA



LEED
for HOMES



OPPORTUNITY

The Northstar
Multiple listing
service has added
the HERS Score as a
Searchable Item!



Affordable housing Programs Requiring Energy Star V3 For Funding



ENERGY STAR NEW HOMES BENEFITS

Third party inspections during construction

Building Science Consulting

Sell more homes

Branding

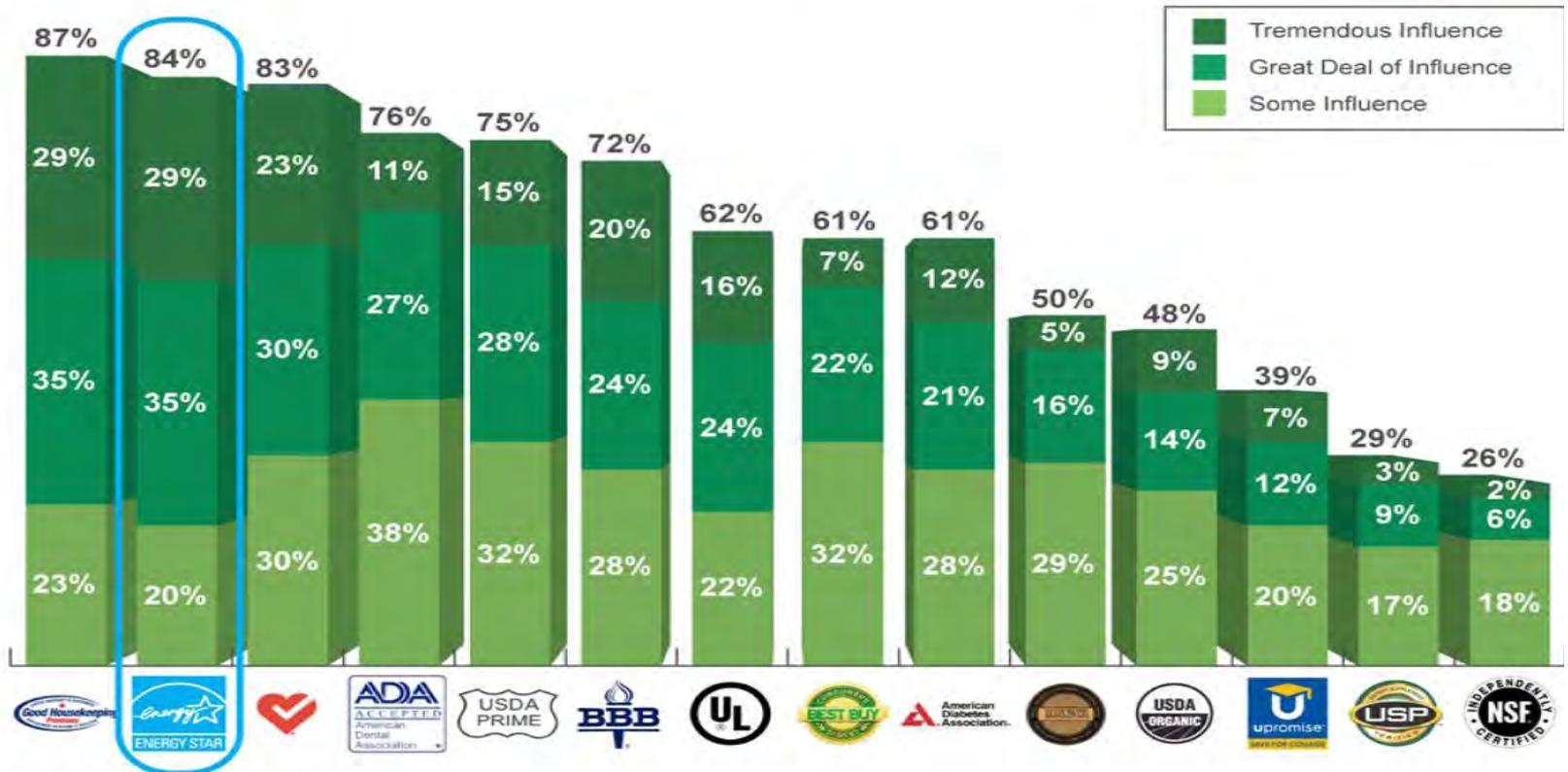
Increases profit margin

Reduce warranty calls

\$2,000 tax credit



ENERGY STAR ADVANTAGE



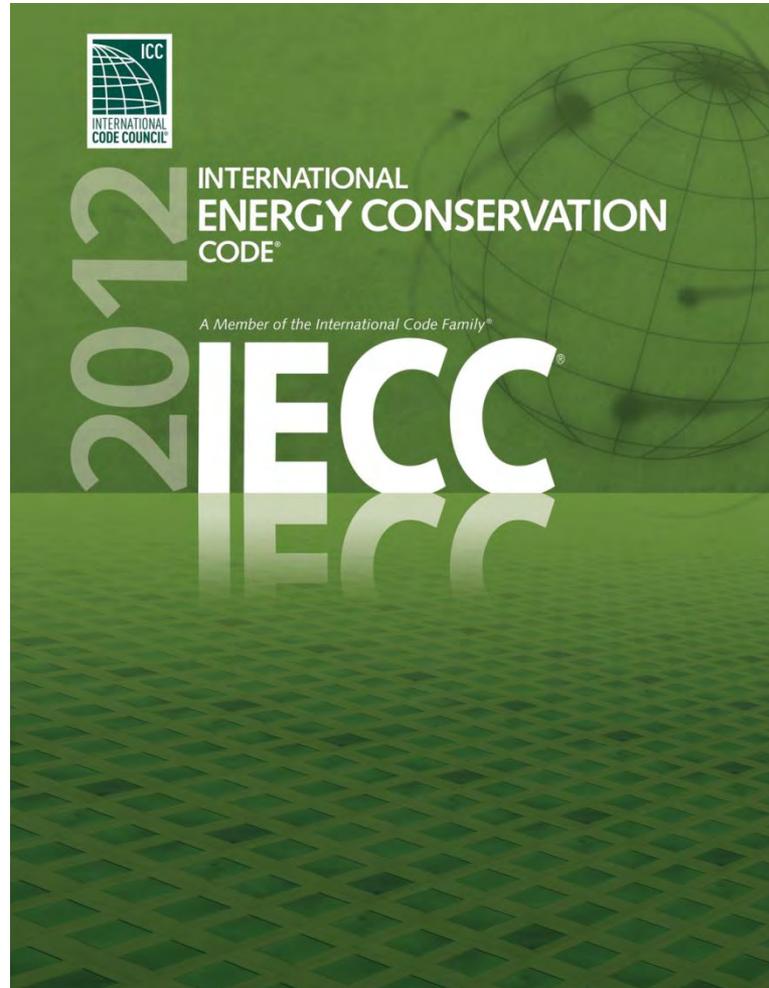
Source: Fairfield Research, Summer 2007



The ENERGY STAR mark ranks among the highest level of influence on product purchase among all consumer emblems, similar in ranking to the *Good Housekeeping Seal*.



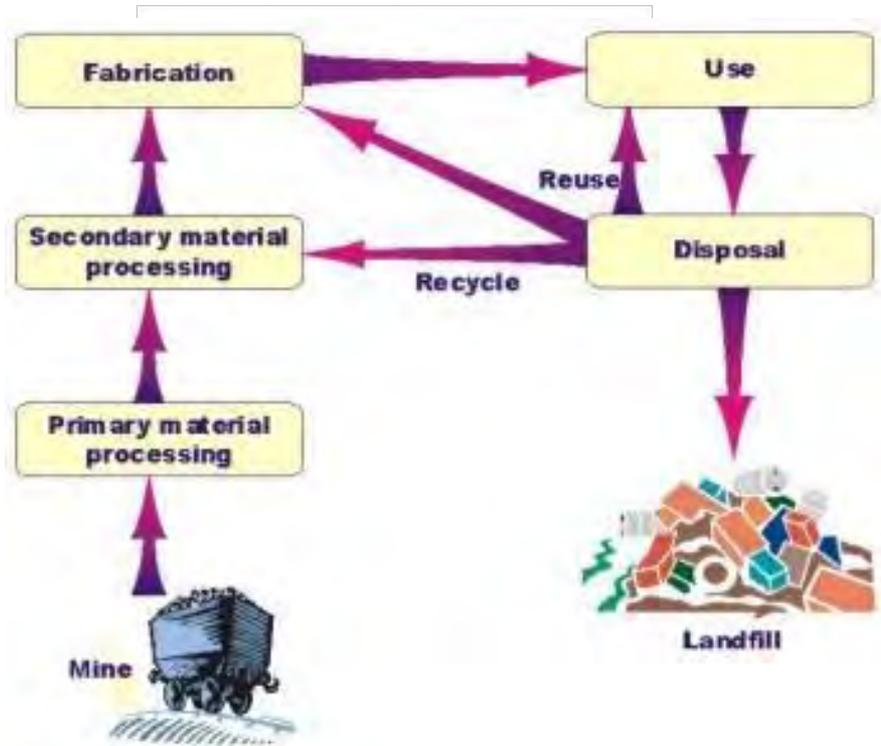
CODE COMPLIANCE



WHAT IS A GREEN HOME

Green Home Building is a Process, not a Product

- Design
- Construction
- Operation
- Maintenance
- Deconstruction



What Does it Take To Get Certified?

RATER Candidates must attend a HERS Rater Training Course presented by a RESNET Training Provider.

- Standard course is 40 hours over 5-10 days.
 - The Course includes basic building science training
 - An Overview on the RESNET Standards
 - Equipment training on the Blower Door, Duct Blaster and IR camera.
 - Training on the RESNET Approved Modeling Software.
- To Successfully Pass the Rater Training, candidates must pass the Rater exam and complete 2 supervised ratings.

What Does it Take To Get Certified?

After successful completion of the RESNET Training course, The perspective Rater must Join a RESNET rating Provider in order to be mentored through 3 probationary ratings.

After completion of the probationary ratings, the individual will become a Certified Rater and will be given a Rater number.

What Does it Take To Get Certified?

- Certified Raters Pay yearly dues to a provider to be able to submit confirmed ratings.
- The Certified Raters Provider is responsible for Quality assurance on the Rater.
- Raters will also have to complete 18 RESNET Approved Professional Development Hours every 3 Years.

What Does it Take To Get Certified?

Quality assurance:

One of the most crucial components of the RESNET Home Energy Rating system is that quality assurance (QA) is integral to the process. RESNET Rating Providers must perform thorough quality assurance review of a minimum of 10% of rating files submitted for certification, and must perform on-site QA review on a minimum of 1% of ratings submitted by a Rater annually

Questions??

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