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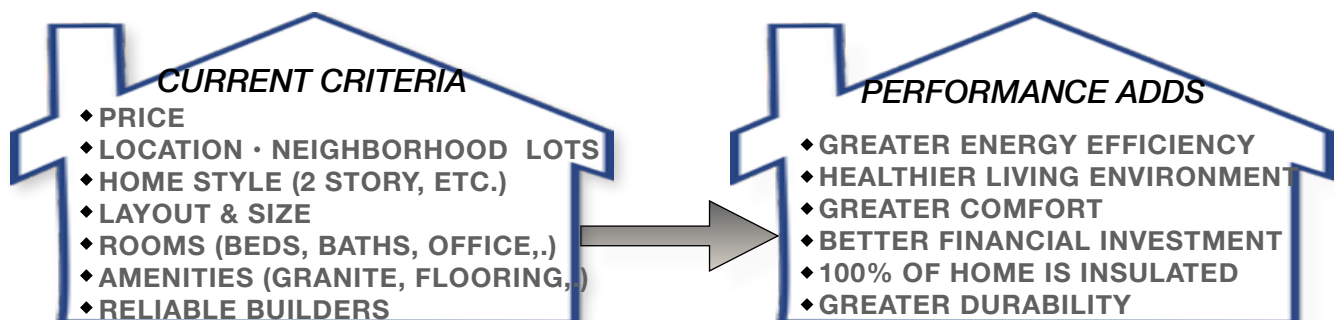
There is one simple question . . .

***Would you ever buy a new home knowing the living space is not fully insulated? We have never had one person answer “YES”.***

- Yet, it is estimated over 98% of new homes sold in Minnesota last year, did not have 100% of the living space insulated.
- Why? *The Minnesota building code does not require it.* Most builders build at or close to the base building code.

This checklist will save you money and provide each of the following benefits.

1. **Greater Comfort** - A 40% increase in insulation & 100% coverage of the living space.
2. **Healthier Living Environment** - Substantially reduces chance for mold and allergens.
3. **Energy Efficiency** - Saves homeowners money and it is much better for the environment.
4. **Financially Wise** - Performance Homes have consequential financial benefits.
  - Higher Home Value - HUD requires appraisers to compare with other energy efficient homes. This should increase appraisals over 2%. Studies also show higher resale values.
  - Reduced Energy Bills - The projected cost savings typically run \$10,000-\$40,000 over the life of a mortgage. Energy cost savings grow as energy prices rise each year.
  - Affordable Energy Upgrades - It costs about 2% more to build a Performance Home. This investment is often covered by increased appraisal and energy savings in the very first year.



# Homebuyer Energy Checklist



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	MN Code Built	PRECISION BUILDERS	Builder Name:
<b>INSULATION - WALLS, CEILINGS &amp; FLOOR</b>			
Insulation <i>OUTSIDE</i> of Stud Wall Frame (R 5 or more)	NO	R 5.5	
Rigid Insulation Board UNDER Basement (R 10 or more)	NO	YES	
Insulated Spray Foam Used In Walls and/or Attic	NO	YES	
Insulated Spray Foam Used Over Garage	NO	YES	
<b>Estimated % of Living Space Insulated</b> <i>(Subtract 25% if no insulation OUTSIDE studs &amp; subtract another 10% if no insulation under basement or slab floor)</i>	<b>65%</b>	<b>100%</b>	
<b>HOME AIR SEALING</b>			
Blower Door Test Results (ALL homes are tested)	3.0	1.0 (or Less)	
Smart Poly Vapor Barrier (Releases Wall Moisture)	NO	YES	
<b>HVAC - HEATING, AC &amp; VENTING</b>			
Energy Efficiency of Furnace	91%	96%	
AC SEER Rating	13 Seer	15 Seer	
Advanced Programmable Thermostat	NO	YES	
Advanced ECM Air Exchanger	NO	YES	
<b>OTHER ENERGY ITEMS</b>			
High Efficiency Water Heater	NO	YES	
All EnergyStar Appliances	NO	YES	
100% Energy Efficient LED Lighting	NO	YES	
Well Suited for Solar Panels	NO	YES	
<b>ENERGY RATINGS &amp; USAGE</b>			
<b>2017 HERS® Score Rating (With Gas Water Heater)***</b>	<b>64</b>	<b>44</b>	
<b>Estimated Heating &amp; Cooling Savings vs Code Built</b>	<b>0%</b>	<b>37%</b>	

Builders provide a variety of options in & home style may affect elements of this chart, depending on those options.

\* All homes have air exchangers, not all are ECM energy saving.

\*\* Actual R Value performance is often less than listed due to no outer layer of insulation.

\*\*\* HERS® Ratings system CHANGED 1/1/17 reducing all scores by about 4 points from 2016.

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## INSULATION - WALLS, CEILINGS & FLOOR

**Insulation *OUTSIDE* OF Stud Wall Frame** - Wood wall studs on average comprise about 25% of a new homes' wall system. They are not insulation! They actually carry outside temperatures to the drywall. THIS CAUSES MANY PROBLEMS. Would you every buy a winter jacket missing insulated lining? Often this layer of insulation is called a "thermal blanket" for the home. Finally, this outer layer of insulation greatly reduces the chance of mold growth in the wall, due to great temperature variations that can occur inside the wall cavity without this insulation. This is why all building science experts recommend that all homes should have an outer layer of insulation.

**Rigid Insulation Board Under Slab (R 10)** - Very few homes without in floor heat are insulated under the basement floor or slab. An R 10 layer provides much greater comfort for the home.

**ANY Closed Spray Foam Used In Wall Cavity** - The use of spray foam in wall corners, tight spaces between studs and on upper all rim joists between all floors. Spray foam is more expensive, otherwise all builder would use in strategic locations. It insulates better (per inch) and is very effective in tight spaces where fiberglass is not effective. It also air seals vulnerable locations around and between stud walls.

**ANY Closed Spray Foam Used In Attic** - There should be at least an R10 layer in the attic. It seals the living space. Recessed light and ceiling fans often leak badly. Spray foam provides a superior layer of protection compared to thin plastic sheathing that is cut to install lights and fans.

**Estimated % of Living Space Insulated** - Again, walls typically account for 25% of walls and floors account for at least 10% of the living space. Therefore, if there is no insulation outside the frame:  $100\% - 25\% = 75\%$ . If no insulation under the basement floor or slab, subtract another 10%.

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## HOME AIR SEALING

**Blower Door Test Results** - ALL new Minnesota homes require a blower door test by completion. A tightly sealed home is good, when an air exchanger is installed (also required on new homes). ACH50 score of 3.0 is required. Homes at 1.0 or less are very energy efficient and well built.

**Smart Poly Vapor Barrier (Releases Wall Moisture)** - This material is a very special plastic that releases moisture from the wall cavity. Most homes have regular plastic behind the drywall. Regular plastic traps moisture produced in the wall cavity, thus making it far more prone to *mold* than Smart Poly.

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## HVAC - HEATING, AC & VENTING

**Energy Efficiency of Furnace** - An energy efficient structure reduces energy use by 25% or more. That means a furnace and AC units can be downsized by 25%. Therefore, that savings can be used to upgrade the furnace efficiency. This is money well spent.

**AC SEER Rating** - SEER ratings are yet one more used measurement only used by AC units. The higher the rating, the more efficient the AC unit is.

**Advanced ECM Air Exchanger With Damper** - All Minnesota homes have air exchangers. The "ECM" air exchangers save more energy.

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## OTHER ENERGY ITEMS

**High Efficiency Water Heater**- Much energy is water in hot water heating and distribution. 100% efficient standard water heaters are a must if electric.

**All EnergyStar Appliances** - No excuse not to have energy saving appliances and washer/dryers.

**100% Energy Efficient LED Lighting** - A great energy saver and should be required on all homes.

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## ENERGY RATINGS & USAGE

**Estimated % Energy Savings of Heating & Cooling vs Code Built** - Homes that have been tested always give this number. This number allows you to know if energy savings can cover the improvements. Good energy efficient homes always save money. Over time, savings are often in the \$10's of thousands.

**Well Suited for Solar Panels** - Solar panels are good and very expensive. They only make sense if you install them on an energy efficient home. If a home uses 25% more energy, than you need 25% more solar panels. That cost alone typically pays for the energy improvements of the home structure.

**HERS® Score Rating** - **\*Special Note\*** *THE HERS® RATING SYSTEM SOFTWARE CHANGED JAN.1ST, 2017. IT BASICALLY RAISED SCORES 4 POINTS. IF A HOME WAS RATED IN 2016, ADD 4 POINTS TO THE SCORE. THERE ARE A NUMBER OF HOMES BUILT LAST YEAR WITH LOWER SCORES.*

Think of this as an “MPG” for the home. The HERS® rating takes into account *most* of the elements listed above, including the blower door test. A final report provides the energy savings over a current code built home & a home built to the 2006 code. Typically this rating is *VERY ACCURATE*. The lower the number, the better. *It is very hard to lower the number below 50 without insulation outside the frame.* Here is a gage of what scores are on the HERS® rating scale. Some show the old 2016 ratings.

- *An Existing Home - HERS® 130.*
- *A Home Built to the 2006 Building Code - HERS® 100.*
- *Minnesota Code Built - 2017 HERS® 64 • (2016 HERS® 60)*
- *Energy Efficient Home - 2017 HERS® 47 or less. • (2016 HERS® 42)*
- *Energy Efficient Homes With Solar - 2017 HERS® 20 or less. • (2016 HERS® 16)*