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## **High R-value of Insulating Concrete Form Walls Boosts Energy Efficiency** *ICFs more than stack up when compared to wood frame walls*

When people talk about insulating concrete form (ICF) buildings, the subject of R-value is almost always part of the equation. *Static* R-value. *Performance* R-value. So what is R-value, anyway? And what difference does it make?

The “R” in R-value stands for “resistance.” A material’s *static* R-value is its ability to resist heat transfer. The higher the R-value, the greater the material’s heat transfer resistance. *ICF buildings have a high static R-value of approximately 20.*

But R-value isn’t the whole story when we talk about a building’s energy efficiency. Energy efficiency encompasses the performance of the entire wall assembly, including the thermal mass of the walls, their resistance to air infiltration, and the wicking of ground temperature. Add the *static* R-value, and we can determine the *performance* R-value of the wall system. ICF buildings have a performance R-value that is even higher than their static R-value. In fact, the performance R-value of an ICF wall has been measured as high as 32, and in some cases, more.

By contrast, the R-value of a wood frame wall is not so high:

- Insulation alone in a 2 x 4 wall = R-13
- Insulation alone in a 2 x 6 wall = R-16

And when you average the R-value of the wood and insulation together, the R-value of the entire wood frame wall system actually drops slightly, because of the low R-value of the wood. Wood frame walls do not have an performance R-value because they allow air infiltration, do not have a lot of mass, and do not wick the ground temperature.

For more information on R-value, energy efficiency and Reward Wall Systems ICFs go to [www.rewardwalls.com/techtips/energyefficiency\\_rvalue.pdf](http://www.rewardwalls.com/techtips/energyefficiency_rvalue.pdf).

*Located in Omaha, Nebraska, Reward Wall Systems, Inc. was the first national manufacturer of two complete and diversified lines of insulating concrete forms used in residential and commercial structures. Reward’s customers include general contractors, residential contractors, concrete contractors and construction supply distributors. To learn more about Reward Wall Systems, Inc., visit [www.rewardwalls.com](http://www.rewardwalls.com). # # #*