



## EF Block R-Value 23.16

The benefits of owning an EF Block ICF home are numerous. One of the primary benefits is energy savings recorded to range from 30-90% compared to a wood-frame or concrete block home (depending on your climate).

### **Near Zero Air Infiltration**

An EF Block ICF home is extremely air-tight. No joints exist between walls, or walls and floors. This prevents conditioned air from leaking from the interior to the exterior of the home. Energy savings from reduced air infiltration are obvious when compared to the large amount of heating and cooling losses experienced in traditionally built houses.

### **Continuous Insulation**

Another key benefit to EF Block ICF walls is the consistency of the insulation in the wall system. In wood frame walls and concrete block walls, stud, plate and header areas are solid wood, which allows heat to be conducted more easily. The insulation, which is the real barrier to heat loss, is interrupted at these locations. This means that often up to 15% of your wood frame wall or concrete block has no insulation at all. EF Block ICF walls have a consistent and continuous EPS composite insulation.

### **Thermal Inertia / Thermal Mass**

Another benefit of EF Block ICF construction is the concrete's ability to buffer, or absorb and later release heat, due to its large thermal mass. Much like an adobe wall in New Mexico, heat slowly builds up in the wall, as the sun shines on it during the day, to release it into the interior during the night. This 'Thermal Mass effect', or ability to store heat and release it when needed, also saves energy, especially when outside temperatures fluctuate above and below the inside temperature daily.

### **Superior Insulation Values**

EF Block ICF assemblies are up to three times higher in real R-values than local code built construction. In Fountain Hills, Arizona two similar houses were built, one using EF Block ICF, the other being traditional wood construction. A utilities cost comparison provided these numbers:

EF Block ICF Monthly Utility Cost: \$20.68

Stick Frame Monthly Utility Cost: \$49.49

This shows an astonishing savings of 58.2%. And the importance of these numbers only increases when we see utilities costs on the rise throughout the US. I should note here that savings well over 58.2% can be achieved with ICF construction.

### **The True R-Values**

CTL labs in Kentucky, completed a series of hot box testing on ICF wall assemblies. A hot box test is a far more accurate analysis of heat loss than calculated R-Values. Although the calculated or "static" R-value of most ICF forms is R-22, the certified hot box testing of ICF walls resulted in the following equivalent R-values for the wall assemblies only, at the locations shown, based on an 1800 square foot ranch home with 20% glazing area.