



# Masonry Association of Florida, Inc.

## Energy Efficiency Comparison – Masonry vs. Wood Frame



*Life is Better With Block*

**Concrete Block Homes offer:**

- ✦ **Design Flexibility**
- ✦ **Worry-free Durability**
- ✦ **Energy Savings**
- ✦ **Insurance Savings**
- ✦ **Security in the Storm**
- ✦ **Fire-safe Savings**
- ✦ **No Home for Termites**

**[www.floridamasonry.com](http://www.floridamasonry.com)**

### **Thermal Mass**

The energy efficiency of concrete masonry is one of the reasons it has remained the predominate building material in Florida for the past 70 years. Thermal Mass is the secret behind its energy saving attributes.

Thermal Mass moderates the heat flow through a masonry wall. Only heavy walls made of concrete or concrete masonry possess enough “Mass” to store and release energy at different times of the day. This delayed thermal response or the “lag” between the outside air temperature and the response of the high mass wall allows for a portion

of the energy that would have passed through the wall to be reabsorbed back into the outside environment.

Florida is nearly the perfect climate for Thermal Mass to be effective since the temperature across most of the state, and throughout the year, swings above the desired interior temperature (or “set” temperature) during the day and below the set temperature at night.

The Florida Building Code has recognized the value of Thermal Mass for over two decades by requiring much less insulation in masonry walls than in wood frame or steel stud walls.



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### Preventing Moisture Condensation & Mold Growth

Another important advantage of masonry walls is preventing moisture condensation and mold growth within the wall cavity. Condensation occurs when the temperature of an object falls below the “dew point” of the surrounding air. Water on the outside of your iced-tea glass is a perfect example of this. Dew point is determined by the moisture content of air, often referred to as the “percent humidity”. On a dry crisp day in winter your percent humidity may be as low as 10-20%. Alternately, on a hot sticky day in mid-summer your humidity is probably in the 80-90% range.

Typically, wood frame walls in Florida will include a vapor barrier on the EXTERIOR, behind your stucco or exterior paneling. The vapor barrier is placed on the exterior to prevent hot, moist summer air from entering the wall cavity and condensing out on the back side of your interior drywall. Unfortunately, conditions reverse in winter and this arrangement allows warm moist air from the INTERIOR of the home to come into contact with the cold exterior plywood sheathing. The result is condensation that causes both a reduction in insulation value and high potential for mold and mildew growth.

A concrete masonry wall has the additional advantage that it is neither a food source for mold nor is it damaged by mold or moisture. Fiber insulation, stud lumber and plywood do not possess any of these desirable traits.

### Masonry is 100% Florida!

Energy efficiency and moisture control are very important but only two of the many components that make concrete masonry a sustainable building

product. Another important consideration is that concrete, and the cement and aggregates that go into concrete, are 100% locally produced products. This reduces transportation and provides maximum employment to our local economy.

**Concrete masonry is *THE* energy efficient and sustainable choice for Florida home builders.**

**Contact the Masonry Association of Florida  
For more information:**



[www.floridamasonry.com](http://www.floridamasonry.com)

### Resources:

*Florida Building Code –2007* – [www.floridabuilding.org](http://www.floridabuilding.org)

*Technical notes* - [www.ncma.org](http://www.ncma.org) See 6-01B; 6-02B; 6-03; 6-04A; 6-09C; 6-13B; 6-14A and 6-17A.

*Thermal Catalog of Concrete Masonry Assemblies:*  
<http://www.ncma.org/resources/design/Documents/Thermal%20Catalog%20Phase%20I.pdf>

*Life Cycle Analysis:*  
[http://www.imiweb.org/design\\_tools/life\\_cycle/index.php](http://www.imiweb.org/design_tools/life_cycle/index.php)  
*Thermal Mass - Energy Savings Potential in Residential Buildings*