



Protection is a concrete idea.

## Certificate Of Compliance

### Thermal Values For Korfil Hi-R Masonry Wall System

This will certify that the thermal values published for the Korfil Hi-R Masonry Wall System comply with the standard outlined in the National Concrete Masonry Association's (NCMA) TEK 6-1B "R-Values Of Multi-Wythe Concrete Masonry Walls" and TEK 6-2B "R-Values and U Factors of Single Wythe Masonry Walls". The standards are based on The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.2 which requires the series-parallel (isothermal planes) calculation method to be used for concrete masonry units (cmus). This Standard is further clarified in the ASHRAE Handbook of Fundamentals, Chapter 22. This method accurately accounts for thermal bridging that occurs through the web area of a cmu.

Credit for thermal mass is not included in the Korfil Hi-R thermal values. NCMA's Standard and ASHRAE 90.2 do not include the value for thermal mass in the cmu R-Value for two reasons:

The value of thermal mass differs greatly in cold versus the hot climates where greater mass benefits are found, so it's impractical to show a single R-Value that includes mass for both cold and warm climates.

Building codes recognize thermal mass by reducing the R-Value requirements of mass walls versus light weight walls. Energy compliance software such as the US Department of Energy COMcheck Program has thermal mass compliance reductions built into their software. It would be incorrect to use a cmu R-Value that includes thermal mass in a software program that reduces the R-value requirement because of mass. It would be taking credit for mass twice.

There has been a recent trend for some insulated Concrete Masonry Units to market what they call "Effective R-Values" or "Equivalent R-Values". These values are often based on an academic assessment of the mass contribution to the wall system. Korfil Hi-R Values conform to the NCMA and ASHRAE Standards mentioned above and can be used with energy compliance software programs such as COMcheck. "Effective R-Values", "Equivalent R-Values" or any other calculation procedure not recognized by ASHRAE are not accepted by the US Department of Energy.

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To make a fair comparison between various insulated cmus, please consider requiring each company to document the R-Value they present complies with the National Concrete Masonry Association's and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards.

Signature David L. Nickerson Date 8 Sept 2009  
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