



A Better Way to Build

RASTRA is the ultimate building solution for economical and environmentally-friendly construction. RASTRA is the solution for this century to build environmentally conscious, energy efficient buildings that provide a safe and healthy living environment. **Over 9 million units in service worldwide.**

Why fiberglass doesn't work

Fiberglass insulation is considered the standard in new construction. Unfortunately, fiberglass has serious flaws that are not well known outside the industry. Some of these may surprise you.

Let's begin with this ... it's a little known fact that fiberglass insulation loses as much as 40% of its insulating capacity when outside temperatures fall below 20°F. When this happens, an R-19 fiberglass insulated wall performs as if it were only R-9. LEED confirms through a Canadian cold weather study that concluded fiberglass loses half its R-value below 0°F. When you need it the most fiberglass insulation cannot properly insulate.

Fiberglass also performs poorly in the presence of humidity within a wall cavity higher than just 30%. In winter this leads to condensation of moisture carried in by warm air through leaks through the wall. This raises humidity levels inside the building.

Once fiberglass insulation becomes damp its performance decreases dramatically. In fact, it only takes a 1.5% increase in moisture content in fiberglass to reduce its R-value by up to 50%. When moisture is trapped in a conventionally-built wall cavity insulated with fiberglass and sealed with a vapor barrier, insulation becomes damp and loses its ability to insulate. This also promotes mold growth and leads to structural damage.

One reason fiberglass is such a poor performer is that for fiberglass insulation to be effective it must be completely enclosed on all six sides without gaps or air pockets. The material must be installed to be in continuous contact with its surrounding surfaces with no pockets of air left between the framing materials and the fiberglass. This is virtually impossible to accomplish on a job site.

Another problem with fiberglass is that for it to work it must be fully expanded to allow its air pockets to perform. If it's stuffed into an opening or compressed by electrical and plumbing lines it simply doesn't work. If you have electrical outlets on an exterior wall it's a safe bet that there's no insulation between the inside and outside of the wall where these outlets are placed. You simply can't install a 3" deep outlet box in a 3½" deep wall cavity and properly insulate.

Lastly, fiberglass wall insulation is designed to be used in framed walls. Everywhere a framing member is placed creates a thermal break between the pieces of insulation that allows air to pass. If 2x4s are used to construct the wall anywhere a 2x4 is positioned the wall only has an R-value of R-3.5. On average 27% of the exterior wall's surface is made up of framing members with an R-value as low as R-3.5.

The opinion that wood frame walls and fiberglass insulation "just doesn't work" isn't just our opinion – it's the opinion of The U.S. Department of Energy after extensive testing by their own Oak Ridge National Labs.

Oak Ridge research concluded that air leakage through exterior walls is the primary factor in moisture accumulation and heat loss.

According to Oak Ridge, "The most common insulation, fiberglass, does not stop air leakage"

RASTRA is an ecological sound building material, consuming recycled raw materials, taking them permanently out of the waste stream and producing a healthy living environment for occupants.

Code Compliance

RASTRA satisfies the International Code Council (ICC), Legacy Report ER-4203, ER-9955 (SBCCI), and UL classified under design U915 for commercial and residential applications.

Contact

mike warren | mwarren@rastra.com | 614.277.0000

rastra.com