



Zero Energy Ready Homes... Using Fiberglass Batts

Back in March, we wrote about the wide array of insulation and air sealing approaches used by homes that meet DOE's Zero Energy Ready Home (ZERH) specification. Among the approaches that can work is the use of fiberglass batts. Mutual Housing California demonstrated how to use batts to achieve ZERH certification in their Mutual Housing at Spring Lake development in Woodland, California. This 62 unit project was the first multifamily, affordable rental development to receive ZERH recognition. However, getting that performance level with batts requires acknowledging a basic fact: the product can get you the performance, but only if the installation is up to snuff.

Performance Achieved by Mutual Housing

Before getting into how they did it with fiberglass batts, let's talk about what they did:

- Energy efficiency: 35% more efficient than California's 2008 building energy code
- Air Tightness: 2.3 ACH50 for the townhomes and just under 4.0 ACH50 for the apartments
- Energy bill savings: by including solar, residents are expected to have monthly utility bills of about \$12
- While the efficiency is great, it's this last bullet that is sure to catch the eye of prospective customers.

How to Get There with Batts

We all know about fiberglass batts. They are recognized as cost effective, versatile, easy to obtain and capable of being installed with minimal training and no special equipment. But, their performance hinges on being combined with both proper air sealing and installation. In DOE's write-up of the project, they state that batt insulation is more prone to shoddy installs than other insulation options, such as blown insulation. Recognizing this fact, but wanting to benefit from the positive attributes of using batts, Mutual Housing had their HERS rater on the project conduct regular site visits and meetings with the project team to ensure proper installation would occur. "Fiber glass batts can be a cost effective way to meet high performance targets, but proper installation is critical" said Vanessa Guerra, Mutual Housing project manager. "By having our HERS rater meet with the project team we ensured expectations on quality were clear and the team was prepared to deliver on them. This collaboration was an important component of success."

Keys to Installation Success

In a webinar for the Insulation Institute, J.R. Babineau, a 20 insulation industry veteran and currently the principal building scientist for Johns Manville, broke down his keys to delivering successful batt installs:

- Outline expectations and oversight opportunities among the builder, HERS rater and contractor
- Use a checklist to define expectations among the key parties
- Define standard operating procedures regarding oversight between project manager, rater and contractor
- Scope penalties for substandard work and/or incentives for delivering quality

Proper Installation Is About a Way of Doing Business

What these points, and the Mutual Housing example, really drive home is that proper installation is about implementing a Business Operating

System (BOS) that makes quality a repeatable outcome. We hear all the common issues: “I don’t have the time to inspect everything,” “crews turn over all the time,” “every build is a bit different.” When you implement a BOS to ensure quality batt installation, other variables (crews, builds etc.) can change without impacting quality. Leading manufacturers all have variants of a BOS to ensure consistent product quality. While a manufacturing environment is different, applying this same thinking here can be beneficial. A little time and effort to implement your own repeatable process can allow you to use the most cost-effective insulation option, batts, to achieve high performance home targets like ZERH. While this may take some time, it can still be more cost-effective than opting for more premium insulation options. The bottom line is that all insulation types, including batts, can allow you to meet high performance home targets as long as you recognize that proper installation is about a way of doing business.