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Is Stucco a "GREEN" Building Product?

Much has been written lately about "Green" building design. Sustainable building design covers many things, one of which is the use of environmentally friendly building materials. As a result of this, manufacturers of building products are performing evaluations to determine if their products can help projects qualify for LEED® Certification. Building products are evaluated on the type[s] of raw material used, the energy used to manufacture the product, the pollution created by the manufacturing process and the transportation costs associated with moving the product from the plant to the construction site. These things are referred to as the "embodied energy" contained in the product.

By volume Stucco is composed of 18% Portland cement, 9% lime and 73% sand, all locally available materials. The weight per square foot is 9 pounds, making Stucco one of the lighter cladding materials. There is also a small amount of steel [lath] involved, about .4 pounds per square foot. Because Stucco is made of generic materials no one has yet determined how much embodied energy is contained in Stucco. Maybe one way to find out if Stucco is an environmentally friendly product is to compare it to another product in the masonry category, brick.

First, let's look at the mortar used to lay brick. The materials used to make mortar are similar to the materials in a stucco mix. According to the brick industry the amount of mortar required to lay 1,000 standard bricks is 19 cubic feet. This is an equivalent area of 148.15 square feet. The amount of material required to cover this same area with 3/4 inch thick stucco is 18.3 cubic feet. So for basically the same amount of mortar material you can cover the wall with Stucco. What about the brick itself? The brick industry tells us that the amount of embodied energy in one standard brick is 14,000 BTU's. For that same 148.15 square feet this would amount to 14,000,000 BTU's. Now that's an energy savings number that is starting to mean something.

So, is Stucco a "GREEN" building product? Yes, I believe it is.

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