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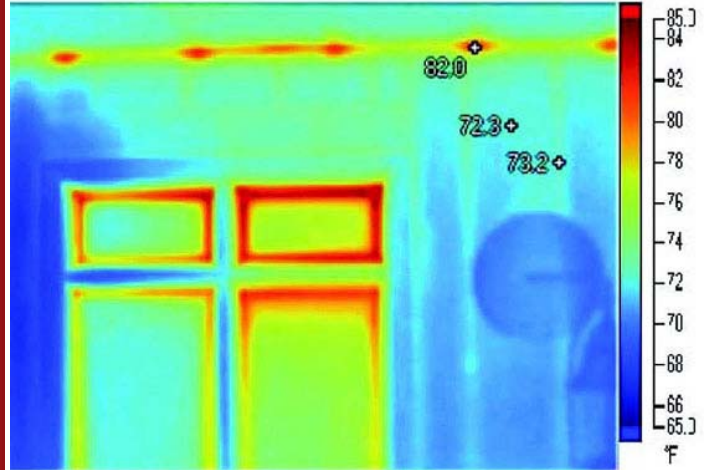
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Wrapped in green: Low-E Housewrap provides year-round energy efficiency

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Date: December 2008
URL:



There are many ways for a home to be green. From metal roofing and reflective coatings, low-VOC paints to solar panels, bamboo floors to compact fluorescent lighting, dual-flush toilets to low-fl ow bath fixtures and Energy Star appliances, contractors have countless ways to influence a project to be more energy efficient and environmentally friendly. One way that may not be so obvious is by using certain housewraps on your residential projects.

New Oxford, Pa.-based Environmentally Safe Product Inc.'s Low-E Housewrap is a different type of housewrap. While most housewraps provide air and moisture blockage, a Low-E Housewrap provides the added benefit of insulation.

Low-E Housewrap does more than just stop drafts, it also effectively seals up cracks or gaps in the external sheathing, blocking up to 97 percent of radiant heat, resulting in better year-round efficiency and comfort levels.

Dustin Muller, marketing manager for ESP, said that while other housewrap products are excellent weather-resistive barriers, Low-E Housewrap offers the additional benefit of an insulation value of R-4 to the wall system.

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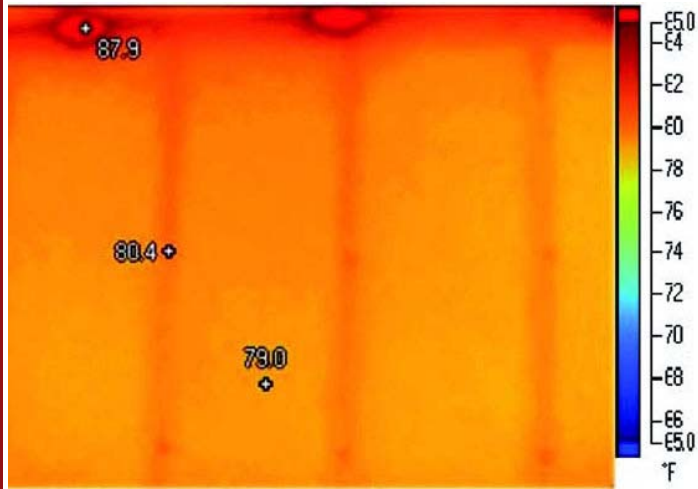
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How It Works

Low-E Housewrap consists of 99.4 percent polished aluminum facing that's heat bonded to one or both sides of closed-cell polyethylene foam and then pin perforated to produce an air infiltration barrier, effectively sealing gaps or cracks in the external sheathing. Additionally, Low-E's foam core is made from pre- and post-consumer content.

Muller compares it to an old-fashioned Thermos bottle that uses aluminized glass within an air space to keep your coffee hot and your iced tea cold.

Installing Low-E Housewrap is simple, and it comes in rolls so installation cost and procedures are not impacted when compared to other weather-resistive barriers, Muller said. Completely nontoxic, the flexible and durable Low-E can be installed easily with a staple gun, razor knife and foil tape. In new construction, it can be applied directly over oriented strand board or plywood, and for retrofit applications, it can be installed over old siding.

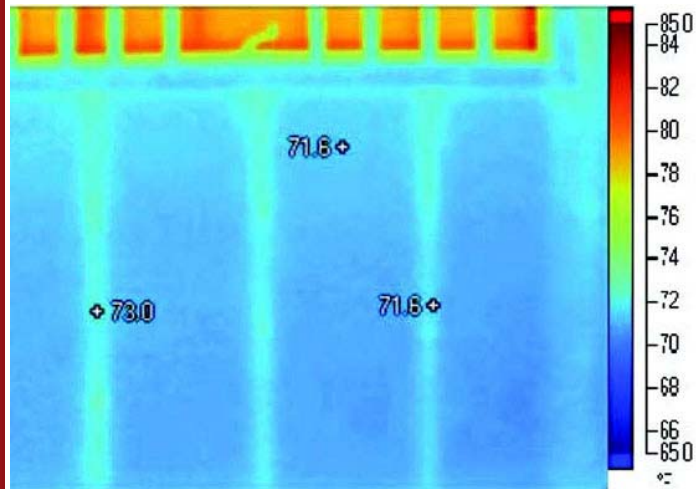
Garth Callahan of Garth Callahan Construction in Sun Valley, Idaho, said the Low-E Housewrap helps to take out some of the imperfections in the wall in addition to providing a more substantial filling between the siding and sheathing in the wall assembly that helps stop air infiltration.



The Proof

In spring 2007, ESP conducted an experiment with two neighbors in Springfield, Ill. Both homeowners lived in houses that were approximately 1,900 square feet (177 m²), built within two months of one another by the same company and set approximately 25 yards (23 m) from each other. The only difference in the two homes was that one was built using Low-E Housewrap and the other wasn't.

The homeowners agreed to have their homes measured via thermal photography over the course of two years to compare the efficiency and energy costs of the homes. In the first 12-month period, the average annual energy savings for the Low-E home amounted to more than \$250.



Benefits

In addition to the benefits of adding insulation to the wall system and adding a radiant barrier to the outside of a home, Low-E Housewrap is also nontoxic, flexible, durable, Class A Class 1 fire rated, and insect and bird resistant.

"By incorporating Low-E Housewrap into the wall system, one is increasing the thermal performance of the system when compared to a noninsulating weather-resistive barrier," Muller said. "This equates more control of comfort for the homeowner and lower utility consumption to achieve that comfort. Lower utility consumption equals lower cost to the consumer and less kilowatts and/or therms needed. Lower kilowatts/therms equals less energy used, and less energy used equals less [carbon dioxide and carbon monoxide] emitted into the atmosphere."



Low-E Housewrap addresses all forms of heat loss/gain: convection, conduction and radiant. "Because Low-E Housewrap has a 99 percent pure aluminum facing, its results for atmospheric emittance were 0.03," Muller said. "This means its surfaces reflect 97 percent of radiant heat, or absorb 3 percent of radiant heat." Most mass insulations have e-values of 0.80 to 0.90, meaning they absorb 80 to 90 percent of radiant heat. "Mass insulations work on the concept of slowing down or resisting conductive heat transfer, which is not a bad thing, but does not directly address radiant heat gain/loss," Muller continued.

Low-E Housewrap also increases the thermal performance of the wall system, allowing contractors to reach the same U-value on 2- by 4-inch (51- by 102-mm) construction with R-13 in the cavity as with 2- by 6-inch (51- by 152- mm) construction with R-19 in the cavity.

Callahan said he thinks Low-E Housewrap is a beneficial product. "I don't really use other housewraps anymore, as most of my clients see the benefits of Low-E. In our climate it really lowers the need for air conditioning."

Muller believes Low-E can provide a positive impact on a contractor's business. "If [a contractor] is just trying to meet code, our product included into the wall system can allow them to meet a 0.060 U-value (2x6 R19 wall) by building on 2 by 4s. This allows them to reduce their cost in both materials and labor. If one is trying to build a wall system that exceeds code or meets LEED standards, our product provides an affordable alternative that still yields results."