

Study Shows 23-Degree Temperature Drop in Attics with Radiant Barriers

Appalachian State University also found that radiant barriers improve air conditioning efficiencies.

By: Jean Dimeo

The Appalachian State University Energy Center in Boone, N.C., recently announced the results of a case study to measure the benefits of adding radiant barriers in home attics. Key findings of the study include:

- A 23-degree F drop in the peak attic temperature.
- A 20 percent reduction in the AC unit's run time during the seven hours of peak attic temperatures.
- A 57 percent efficiency improvement in the cooled air delivered through the air ducts.

"This particular study showed the installation of a radiant barrier in an attic can make it easier for your air conditioner to do its job in the summer heat," Jeff Tiller, a professional engineer at the university, said in a statement. "That translates to lower electricity usage, which also impacts the carbon footprint of homes."

The research team utilized two side-by-side four-bedroom model homes built by Centex Homes in Charlotte, N.C. A total of 61 sensors were installed inside and outside of the dwellings to gather data.

"We're very pleased that this study validates the significant energy saving benefits," said Clayton Traylor, who heads environmental affairs for Centex.

Centex began building homes with radiant barrier roof decking in January as part of its Centex Energy Advantage suite of energy-efficient features.

The study was conducted last summer by the university and led by Tiller, chair of the Technology Department, and Bruce Davis, building research scientist at the ASU Energy Center. It was funded by a U.S. DOE Building America grant provided through the North Carolina Energy Office.

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