

... to slow building heat-gain / heat-loss - infra-red reflectors.

Aluminum IR Reflectors

... provide greater comfort and energy savings by filling the gap in building insulation.

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HOW THEY WORK

Infrared and visible wavelengths radiated by the sun are converted, to some extent, into heat by the first surface they strike. Most building materials convert about 90% of radiant energy into heat and become **hot**. In contrast, aluminum reflects 97% of radiant energy and remains **cool**. Consequently, radiant energy does not become heat.

Heat travels through matter by convection and conduction. Conventional insulation (dead air spaces surrounded by poor conductors) resists heat flow. R-values grade insulators' ability to Resist heat flow. Insulation can only slow energy flow! Aluminum InfraRed (IR) reflectors reject radiant energy, filling the gap left by conventional insulation.

Is Your Attic Energy-Efficient?

- slows heat flow
- rejects 97% of exterior radiant energy input
- retains 97% of interior radiant energy output

IR Reflectors

- reflect 97% of radiant energy so it doesn't become heat
- save heating & cooling costs
- installs over existing insulation
- increases comfort
- extremely light-weight
- clean, safe, non-toxic

and now ...

- inexpensive and easy to install

EFFECTS

Greater Comfort ... People are excellent IR absorbers (about 98% efficient). We all love the feel of "the warm sun" at high elevations and dislike the blast of hot air in a windy desert - the difference of being warmed by radiant energy versus convection.

Savings ... Laboratory tests document heat loss reductions of 33% to 45% in the summer, 15% to 20% in winter.

Additionally, not experiencing the usual IR gain in summer and loss in winter, most people are comfortable setting their thermostats 2°- 4° F higher in summer and lower in the winter.

Reductions in ceiling heat flow due to placing aluminum IR reflector above R-19 attic floor insulation:

	whole house tests			test cell tests	
	summer	winter		FSEC	TVA
stapled under rafters:	24%	27%	7%	26%	8%
unrolled on attic floor:	35%	33%	19%	41%	15%

Mineral Insulation Manufacturers Association · Oak Ridge National Laboratory · Florida Solar Energy Center · Tennessee Valley Authority

COST

The benefits of reflective insulation have been known for some time. However, high material costs and labor-intensive installation methods have made broad application impractical (\$1-\$2 / sf with a cost recovery time of 10-20 years).

All that has changed with the advent of Aluminized Mylar®. These IR reflectors can quickly and easily be broadcast over conventional attic insulation. Installation on an average-size residence takes about 1 to 2 hours and costs as little as 5¢ to 20¢ / sf!

See the "Aluminized Reflectors" section at www.probonoscience.org for explanation and scientific papers.