



Frequently Asked Questions

Q: What is a radiant barrier?

A: An effective radiant barrier like Thermastrand creates infrared shade in your attic. With Thermastrand, a thin layer of aluminum foil—perforated to allow necessary ventilation and affixed to the panels as they're manufactured—stops up to 97% of the sun's radiant heat waves. This keeps attic temperatures up to 40 degrees lower.

Q: Why should I use Thermastrand?

A: Thermastrand stops the intrusion of infrared energy before it can transfer heat to your attic space and from there to your living space. Thermastrand radiant-barrier technology thus provides the first line of defense in making your home energy efficient.

Q: What is infrared radiation?

A: Visible light is only one of many types of radiant waves that exist in our universe. Also present, to the very left of visible light on the radiant wave spectrum, are infrared radiation waves emitted by the sun. Radiant waves carry heat that passes through most matter. Wood lets through up to 90% of the heat, but some materials such as gold, silver and aluminum emit or let through only 3%.

Q: How do radiant barriers “block” heat transfer?

A: Aluminum foil, the protective material used in Thermastrand, has two critical advantages as a radiant barrier. First, it stops up to 97% of the thermal radiation that otherwise causes heat to build up in your attic space. (In comparison, wood sheathing on its own stops only 10% of thermal radiation. This results in your attic heating up, with the heat then transferring through conduction into the living areas of your home.) Second, aluminum emits (gives off) very little heat, meaning the heat that is stopped is not transferred to the attic space through conduction.

Q: Is “R” value important in a radiant barrier panel?

A: No. R-value measures a material's resistance to the flow or transfer of conducted heat, NOT radiant energy. Insulation systems, which provide R-values, are not designed to block radiant energy but to slow down or retard the flow of heat

from hotter to cooler air. Radiant heat, however, will drive in a straight line until it's either deflected or absorbed. This means that the sun's radiant energy will eventually pass through insulation if it's not blocked by a quality radiant barrier.

Q: What are the methods of heat transfer in a typical home?

A: *Conduction:* Direct heat flow through matter—for example, how a hot iron makes fabric hot.

Convection: Transportation of heat within a gas or liquid—for example heat moving upward with the natural flow of the air.

Radiation: Transmission of electromagnetic rays through space. This energy moves through space at 186,000 miles/second but only manifests itself as heat when the rays strike an object, such as a roof.

Q: Will Thermastrand trap moisture in my attic?

A: Ventilation is critical in preventing moisture damage in any attic space. In a traditional wood-sheathing roof, however, moisture is removed not by wicking or migration through the wood sheathing, but with proper venting. Thermastrand is perforated with more incisions than any similar product, which allows for some movement or migration of moisture through the panel. To prevent moisture damage, however, the standard attic venting instructions listed in APA publication E30, “Engineered Wood Construction Guide” should be followed. Note: California has special venting requirements; please check code when building in this area.

Q: How much can Thermastrand save me?

A: Since everyone's home, lifestyle and energy rates differ, the precise savings you personally will gain from using Thermastrand cannot be calculated. Nevertheless, it's reasonable to expect that Thermastrand can save you somewhere between 9%–25% of your annual cooling costs.

Q: Is Thermastrand available in different structural grades?

A: Yes, Thermastrand is available in both Struc 1 and rated sheathing. Made with northern wood species, Thermastrand is easily installed as standard OSB sheathing, requiring no special techniques.



Q: How is Thermastrand installed?

A: Exactly like traditional OSB roof sheathing is installed, with the screen side up for traction on the roof. With Thermastrand, the foil side faces down towards the inside of your attic space.

Q: Will Thermastrand damage my roofing shingles?

A: It's extremely unlikely. The Florida Solar Energy Center measured the temperatures of roof shingles above attic radiant barriers on hot, sunny days. The addition of a radiant barrier raised the shingle temperature only 2°–5° F—the same range of increase due, for example, to different colors of shingles. Roofing material is manufactured to withstand the high temperatures to which they are frequently exposed. A 2°–5° F increase in peak temperatures that normally reach 160°–190° F has no adverse affect.

Q: What about my shingle warranty?

A: Shingle warranties should not be subject to cancellation by the manufacturer on the basis of Thermastrand installation. Statements verifying that shingle warranties are not compromised can be found on file from Owen Corning, ELK and other manufacturers. (Contact Ainsworth for a complete listing.) It might be wise, however, to review your particular warranty to be sure that it will not be voided. Inquire directly with your shingle manufacturer. Any changes in coverage should be substantiated in writing.

Q: Can I use Thermastrand for wall sheathing and sidewall applications?

A: Thermastrand is not recommended for wall applications.

Q: Can I use Thermastrand in vaulted ceiling applications?

A: Yes. For vaulted ceilings install Thermastrand with the foil facing down, maintaining a minimum ¾" airspace to the foil. Each rafter space must be ventilated at the top and bottom (ridge and soffit).

Q: What amount of energy savings has been documented?

A: Geoscience LTD, an independent testing facility, has documented through the use of ASTM C-236 testing methodology the following:

- Roof temperatures of up to 123° F (with the heat staying in the roof instead of transferring to the attic) translate into 21%–22% energy savings in air conditioning.
- Roof temperatures beyond 123° F yield even higher savings—between 25%–30%.

Q: How permeable is Thermastrand?

A: Oak Ridge National Labs tested Thermastrand, regular OSB and competitive OSB radiant barrier products in a “wet cup” permeability test. This test subjects the panels to 50% relative humidity on one side of the panel and 100% relative humidity on the other side. The amount of water vapor that passes through is then measured in weight of water per square foot, independent of panel thickness, at a constant atmospheric pressure. Thermastrand proved less permeable than regular OSB but almost twice as permeable as competitive OSB radiant barrier offerings. Remember, attic ventilation is critical in preventing moisture damage in any attic space. Also remember that in a traditional OSB roof, moisture is removed through proper venting, not through wicking or migration through the OSB substrate.

Q: Where can I get additional information on radiant barrier technology?

- Oak Ridge National Laboratory – www.ornl.gov
- Energy Efficiency and Renewable Energy Network (EREN) – www.eren.doe.gov
- Florida Solar Energy Center – www.fsec.ucf.edu
- Ainsworth Lumber Co. Ltd. – www.ainsworth.ca

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