

Radiant Barriers

Install Barrier to Reflect Thermal Radiation



SKILL SET

Skilled carpentry - Be sure you have the experience needed for this job. If you are in doubt, hire a contractor. Two people make the task easier.

SAFETY

This job requires working in unconditioned attic spaces, tight clearances and under task lighting. Use a dust mask/respirator, gloves, safety glasses and kneepads.

TOOLS

Utility knife, measuring tape, lights, straight edge, markers, staple gun, hammer

MATERIALS

Radiant barrier material

Whatever material you choose make sure it has an emissivity (a measure of a material's ability to emit heat by radiation) of less than 0.1, the lower the better.

Fasteners – screws, roofing nails, or staples depending on the application

COST BENEFIT

The costs for radiant barrier materials range widely, anywhere from \$0.07 to \$1.00 per square foot, and will depend on product choice and purchase location.

PRIORITY LEVEL

LOW MED HIGH

SKILL LEVEL

DIY PRO



Use walkboards as walking surfaces. If working on the roof, always have someone close by in case of an accident. Work during a cool part of the day, as roof temperatures can exceed 150 degrees on hot, sunny days.

Radiant Barriers

Radiant heat barriers (RHB) are reflective materials that can reduce summer heat gain by the insulation and building materials in vented attics. RHBs work two ways: first, they reflect thermal radiation well and second, they emit (give off) very little heat. RHBs should always face a vented airspace and be installed to prevent dust build-up. They are usually attached to the underside of the rafter, truss top chord or the underside of the roof decking and may be cost effective in hot climates. The roof should have a ridge vent for ventilating hot air produced between itself and the radiant barrier.

If your roof receives direct sunlight in summer and has a full attic underneath, a radiant barrier can reduce your cooling costs, especially if you have mechanical equipment in your attic. Before installing a radiant barrier, make sure you have already addressed areas that will have a larger impact on energy use. The attic should already have at least R-19 insulation and key air sealing areas should be addressed. Radiant heat barriers are never a substitute for insulation.

Action Steps

1. Set up the extension cord, lights and walkboards in the attic.
2. Most radiant barrier products come in a roll from 4 to 6 feet wide. Staple the foil either across the rafters or parallel to them, as specified by the manufacturer. The shiny side should face downward so it does not gather dust over time. As long as the surface remains shiny, it will block radiant heat whether facing upward or downward. Of course, it is best to have a reflective surface on both sides.
3. Repeat step 2 for all sections of the attic.

