

by James\_Dulley

Dear Jim: I have plenty of fiberglass insulation on the attic floor, but it still seems as though the bedroom ceiling is warm on sunny days and the air conditioner runs like crazy. What can I do to keep it cooler? - Steve P. Dear Steve: If you put your hand against the ceiling, you would be surprised how warm it actually is. This extra heat will increase your cooling electric bills. Low-cost single-sided foil is being installed in an attic. Notice the kraft paper backing is facing upward. - Photo credit - TVM Building Products Attic foil is being stapled under the roof rafters and on the vertical ends of the attic. - Photo credit - TVM Building Products Roll-out continuous attic ridge vent has many passages for the air to flow out of the hottest part of the attic. - Photo credit - Lomanco This schematic shows the hot air flow from an attic through a rigid-type rigid vent. Notice it is covered with shingles for a nice appearance. - Photo credit - Cor-A-Vent

Rigid ridge vent is being installed with a pneumatic nailer and then it will be covered with shingles. - Photo credit - Cor-A-Vent This warmth also radiates to your body making you feel uncomfortably warm even at a reasonably cool room temperature. When this happens people tend to set the thermostat even lower which further increases the electric bills. What you are experiencing is radiant heat transfer from the hot roof to the ceiling below. A dark roof can reach 150 degrees in the afternoon sun. Standard fiberglass insulation is effective for blocking conductive heat transfer, but not for radiant heat. Radiant heat from the roof penetrates through the insulation to the ceiling below. Even the insulation gets warm. The best method to block most of the heat is to install reflective foil underneath the roof and install adequate attic ventilation. The foil will block the direct path of the radiant heat to the ceiling below. The attic ventilation will cool the roof and carry the excess hot air away. In my own home, this combination lowered my bedroom temperature by 10 degrees. Attic foil is commonly referred to as reflective foil because it looks reflective. It actually works not by reflecting the heat back up to the roof, but by its low-emissivity (similar to low-e windows). The foil gets hot, but its shiny, low-e surface does not easily radiate the heat downward. You can find attic foil in long rolls which are about four feet wide. It is similar to heavy-duty kitchen aluminum foil, except it is reinforced with kraft paper or a nylon mesh. The most inexpensive type uses kraft paper with foil on only one side. Although this may sound strange, because the low-e properties are most important, the shiny side should face down. Staple the foil up under the roof rafters. The neatness of the job is not critical. It is only important that most of the roof surface is blocked from the floor below. Leave a small gap above the insulation near the floor and at the ridge so the attic and roof are well ventilated. This is particularly effective with a roll-out or rigid continuous roof ridge vent. Another option is to have the underside of the roof sprayed with a special reflective, low-e paint. This has a similar effect to the foil. If you are replacing the roof sheathing or building a new home, sheathing is available with a foil backing already applied so additional foil is not needed. The following companies offer attic foil: Fi-Foil, (800) 448-3401, [www.fifoil.com](http://www.fifoil.com); Solec, (609) 883-7700, [www.solec.org](http://www.solec.org); TVM Building Products, (888) 313-3258, [www.tvmi.com](http://www.tvmi.com); and ridge vents: Cor-A-Vent; (800) 837-8368; [www.cor-a-vent.com](http://www.cor-a-vent.com); and Lomanco; (800) 643-5596, [www.lomanco.com](http://www.lomanco.com). Dear Jim: I am trying to make my kitchen as energy efficient as possible. I was wondering how often should I vacuum out the coils under the refrigerator? It seems to run a lot during the summer? - Sandy T. Dear Sandy: Keeping the condenser coils clear of dust is important for the refrigerator to operate efficiently. The amount of dust that collects varies from home to home (pet hair is worst), but vacuum it at least once a month. A refrigerator compressor will run more during summer because the kitchen is generally warmer than during winter. The refrigerator is actually fighting itself because the heat from the coils makes the kitchen even warmer. Send inquiries to James Dulley, Bend Weekly, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit [www.dulley.com](http://www.dulley.com).

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