

INSULATING CATHEDRAL CEILINGS

Scissor truss cathedral ceilings can be blown with cellulose insulation without specialized accessory addition if the pitch is less than 08/12.

The soffit area at the end of the rafter space should not be filled with cellulose. At least a 1.00 inch opening between the top of the cellulose and the underside of the roof deck should be left for ventilation. Regal Industries can provide cardboard or styrofoam air chutes perforated in just the right places for easy installation by the customer to do this.

Once all the rafter spaces in front on the soffit have been prepared, the installer positions himself at the peak (near the hinge of the scissor truss) and works the end of the delivery hose down the rafter space until it is approximately 2 feet from the installed soffit cellulose block/vent. Then the blowing machine is turned on and the hose is gradually retracted as the cellulose builds up to the desired thickness.

The installed density obtained with this method will be slightly greater than a normal attic blow where the hose is always above the insulation as it is installed. So the customer should purchase about 15% more material than would be required for a regular attic.

Rafter only cathedral ceilings are harder to do but are not impossible. If it is new construction, after the roof is in place but the drywall is not installed, air chutes can be installed in the rafter spaced from the roof edge to peak to comply with the shingle manufacturer requirements for a 1.00 inch air space below the roof deck. Many in the insulating industry believe this to be unnecessary but usually the shingles are manufactured by the same people who manufacture fiberglass insulation so they threaten to lower the guarantee time limit on their shingles if cellulose is in direct contact with the roof deck. If you look closely at a shingle warranty, you will see that it is prorated over the life of the installation. Also, there is no warranty difference whether the shingle is white or black. Certainly there will be a roof deck temperature difference between white and black shingles. If venting is such an issue, why isn't color addressed in the warranty? Armin Ruud with the Florida Solar Energy Center authored a paper "Vented and Sealed Attics in Hot Climates". One interesting finding was the shingle in south Florida on an

unvented roof will never get as hot as a shingle on a vented roof in Las Vegas. How can the shingle manufacturer have a shingle warranty for the entire USA?

The attic test facility at the University of Illinois Building Research Center has conducted tests on side-by-side cathedral ceiling bays with and without ventilation. After eight years of exposure, there has been no discernible difference in appearance between the shingles over unventilated roofs and those over ventilated roofs.

Since these facts have come out, some shingle manufacturers have allowed cellulose dense pack to the roof deck. If the shingle guarantee is important to you, you should check with your shingle supplier before installing cellulose without air chutes below the roof deck. Once "to vent or not to vent" is determined, the rafter cathedral ceiling can be blown with cellulose in the same manner as with scissor truss cathedral ceiling.

The peak dry wall piece is left off until all rafter spaces are filled with cellulose. Be careful to place permanent barriers around all recessed lights, fans, chimney, or any other device or area that is a potential source of heat. This is because the insulation retains the local heat and could result in rafters, electrical insulation, or other material to catch on fire. A 3-inch gap between the device and the cellulose insulation is required. The top dry wall piece is put on last and the top is blown with cellulose through 1-inch diameter holes into each cavity that is left. Afterward the holes are plugged and the dry wall is finished.

New construction rafter only cathedral ceilings can be insulated using the Regal Wall System. (a dry blow) Cathedral ceilings with a pitch as steep as 12/12 have been successfully insulated using the Regal Wall System. Before the drywall is installed, insulweb cloth is stapled to the rafters as tightly as possible. Then a specially formulated glue is painted onto the rafter stud through the cloth with a common paint roller. After the glue dries, the cloth/adhesive combination provides a very strong support for the insulation. The glue also totally excludes cellulose from the stud face. Cellulose insulation is tube blown into the cavity and the drywall is installed in the normal manner.

If you are retrofitting an **existing rafter cathedral ceiling** and the shingle guarantee issue is not important to you, you can blow cellulose through 1.00 inch diameter holes into the rafter cavities. These holes should be spaced at 5-foot intervals and can be on the roof side or on the living drywall side. If you decide to blow the cavities from the roof side, the shingles at each hole site must be partially removed.

It is also possible to make a hose access at the peak and then work the hose down for a retracted hose blow. The rafter cavity length should be marked on the hose with a permanent marker or duct tape so you will know when you fed enough hose into the cavity.

Since in these types of blowing procedures you cannot see the cellulose exit from the hose, you must rely upon your hearing and feeling to know when to retract the hose.

When it is time to retract the hose, there will be a noticeable decrease in sound and vibration of the hose as cellulose stops flowing.

Heat generating devices will need blocks around them. This can be done from the drywall wall side. This may be messy and require drywall patching, but it is necessary. If these devices block insertion of the hose from the roof peak, you can fill those cavities from the drywall side when you install the heat ventilation blocks.

After the cavities are blown with cellulose, all holes should be repaired to original condition. The amount of cellulose insulation required for an enclosed cavity blow will be approximately the same as specified on the cellulose bag for sidewall coverage.