

Why Camping in an Attic is Not Good.

We see a lot of situations where people have been told it is great practice to cross lay fiberglass batt insulation in an attic because that eliminates most of the voids caused by the framing interrupting the bottom layer of batts. That is a good theory with a flaw.

If the bottom layer of batting does not completely fill the ceiling joist cavity, the cross laid top layer leaves voids all through the insulation envelope because it is suspended off the bottom layer by the ceiling joists. I call that 'Tenting'. There will be channels on both sides of every joist where air is not held still, so it moves. In cold weather the air is heated by the room below and it rises out of the tent. Then it is replaced by cold air and the process repeats. In most cases, the gaps result in enough convective heat loss to render the top layer of fiberglass completely ineffective when it is most needed. This also happens when the bottom layer of batting is significantly thicker than the joist because the gap between adjacent batts in the bottom layer is not filled when the top layer is cross laid. Those gaps get the same convective losses as the suspended batts. Poof, the top layer of insulation isn't doing much.

Unfortunately Tenting is also the result when carpenters put furring across the underside of ceiling joists or cathedral rafters to reduce the distance between centers. They do that so the interior finish has more support, but it introduces a gap between the batts and the interior finish on both sides of each furring strip (Tenting) and that gets convection going. If the interior finish is porous, like tongue and groove wood, or fiber tiles, this problem is much larger. In either case, it renders batt type attic insulation much less effective, and blown in insulation helps. If the interior finish is porous, you also need an air barrier between the insulation and the ceiling finish. (see Screen Ceilings)

The remedy for this is using blown in insulation in attics. Unfortunately, if the cross laid batts are already there, it is usually necessary to remove the top layer to reveal the bottom layer before you can install the blow in insulation. That's very labor intensive/expensive.