

New addition; roof leak when it snows.

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We caught a consumer in the hardware store and he was asking about the leaking roof on his new addition in the Beaches area of Toronto. Often in that area, a back porch is converted into living space with what we call a "compact roof" -- a roof/ceiling assembly that is about one foot thick with inadequate insulation and little or no ventilation. Usually it also has a very low slope to it. When snow accumulates, the heat loss through the compact roof melts the bottom of the snow pack and the water easily backs up under the snow, leaking into the new room. You can add more insulation to this assembly by putting rigid foam insulation over the ceiling and covering it with another sheet of drywall. But it is a good idea to arrange the ventilation within the roof assembly so that air can flow from the soffits up and out someplace higher up (often difficult to do if this roof butts into the house) to take away the heat that you cannot stop from travelling up through the ceiling. This will keep the snow frozen on the roof so you don't get leaks every time it snows. For more details check out "Ice Dams" in the Nuts&Bolts section.

So the next time you build an addition like that, make the whole assembly thick enough to have about one foot of insulation plus several inches of ventilation that lets air come in freely low on the roof, and go out freely high up on the roof. And make sure there are no hot air leaks into this barely heat-balanced compact roof. Full sized attics give you a lot more margin for error.

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