

Will insulating a floor make it warmer?

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Lee from Portugal Cove, Newfoundland is trying to warm up his floor without warming up his basement. "The floor above the basement is plywood covered with hardwood or vinyl flooring. It is very cold during winter and our 10 month old spends most of his days crawling around on a cold floor. Will insulating the basement ceiling prevent the cold floor? Will a significantly colder basement (after insulating the ceiling) cause the water/sewage piping to freeze?"

First, if you have absolutely no heat source in the basement and you isolate it from the house, even with insulation on the basement walls, you could risk freezing pipes that are near that outside wall. If you want to do this, you can protect those pipes with electric heating cables that have a thermostat which will only turn on the heat when the pipe approaches freezing, which may be never, hence not so expensive to operate.

Second, insulating the floor only has a minimal comfort affect on the floor. Any floor over an unheated space will be colder than a floor over a heated space, and that despite massive insulation. You see this all the time with bay windows that extend out over the foundation wall.

The first thing to do to improve the comfort level of the floor is actually easy and inexpensive. Remove the quarter round trim from all the outside walls, caulk the crack between the wall and the floor to make it air tight and put the trim back on. In older houses that were not built with house wraps, this will stop one of the major points of entry of cold air drafts that will just flow across hardwood or vinyl floors. Then go down into the basement and caulk every crack between the concrete and the floor above. Again, these air leaks are an important part of why a floor is cold.

After that you really need to make a choice of paying to raise the temperature in the basement (not really so expensive if the basement is well sealed and well insulated), or finding a way to add heat to the floor itself. There exist all kinds of hydronic (hot water) in floor heating systems, some that can be added right over the existing floor like Plasco, or into the floor joist area below as well as electrical systems like Easy Heat that are usually built into the mortar in a tile system. This could give you some localised heat specifically in the rooms where the kid crawls most.

Insulation will help a little, but not much. Try it just under one room and you will be able to judge the difference.

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