

How to insulate around a steel beam in a Garage

Last Updated: Wednesday, March 27th, 2013, Created: Tuesday, September 14th, 1999

Russ in Bomanville Ontario sent us in a video which showed a steel beam right across the center of his garage ceiling. The beam supports the brick on the bedroom wall above. He wants to insulate the ceiling to make a workshop, but leave the beam exposed so he can use it to lift heavy things, like car motors. The problem is how to avoid cold from coming in along the beam and causing condensation problems on the inside. First, notice his cinder block pillar which holds up the beam. He has no room for insulation there, but he has carried his vapour barrier right across. The part of the plastic where there is no insulation will get cold, and condensation will form. Either he needs to get some ridged foam between the vapour barrier and the blocks, or he needs to insulate the blocks on the outside of the house. But if he can't do either, it would probably be best to remove the vapour barrier over the un-insulated blocks and seal it to the edge of the blocks where it starts to protect the fiberglass. This will prevent moisture from getting trapped behind the drywall. If the metal beam is totally inside the thermal envelope of the garage, you don't need to do much. But wherever it is exposed to the cold on one side, you need to do something. For instance if the top of the beam next to the bedroom above is not insulated, then the bottom should be. Where it comes over the support blocks, it will bring in cold. The best solution, but not always practical, is to get some insulation on the end of the beam to block the cold from even getting to the metal in the first place. If you can't do that, then insulate a foot or so into the room, probably with a spray in place foam, or ridged foam sealed to the beam to prevent water from sneaking behind the foam. The rest of the insulation can go in the rafters above the beam, leaving that portion of the beam exposed inside the warm garage.Â

Keywords:

Thermal Bridging, Insulation