

# It is all wet behind the shower tiles. Why?

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Ed writes from Ajax, Ontario : All 3 walls of my bathroom shower stall are finished with 4" ceramic tiles and are in good shape. When I had to remove one of them, I discovered that the drywall was behind it was so wet that I had to put a fan on it over night to dry it out before I could glue the new tile back on. Now, I had accidentally pierced the vapour barrier a couple of years earlier during a previous repair but I fixed that with duct tape...I think ! Why is the drywall behind the tile so wet? Could my earlier duct tape repair have failed? What should I do? Am I going to have problems if I don't address this?

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It will probably surprise you to learn that all the drywall manufacturers specifically say to not put a vapour barrier between the drywall and the insulation on a tiled wall because there is always some vapour coming through the grout and it gets stuck between the tile and the vapour barrier soaking the drywall. Hence it could be that the basic source of your wet drywall is in fact that vapour barrier. The field of tiles itself presents enough of a vapour retarder to protect the insulation from an overdose of moisture and what does get through, if not trapped by a plastic sheet, will dry out through the wall. We never want two vapour retarders in the same wall. [Click here for more information on VAPOUR RETARDERS.](#)

All of this is why we always put in at least "water resistant" drywall (with wax in it) if not cement boards in the place of drywall before tiling. This will resist accumulating water and holding it between wet and dry periods. If your drywall was not of the water resistant type, your drying efforts probably only helped to dry the outer fraction of an inch, leaving lots of moisture further back. At the first sign of moving tiles, I would remove the whole wall, replace the drywall with something that will not hold moisture and start over. Or better yet, use any drywall you want and built a totally moisture proof shower before you put in the tiles! Why not add half an inch of rigid foam insulation between the studs and the tile base on the outside walls while you are at it! In fact the 2010 Canadian building code will be requiring a waterproof membrane for shower tiles, independent of what kind of wall panels you have.

Tiles are not perfectly moisture tight, even when everything is done right. (That is why water proof membranes below the tiles in the bottom of tiled showers that drain into the floor drain have been mandatory for a long time now -- see: Shower Base.) If there are any cracks in the grout, or any way for water to flow off the higher portion of the wall behind the tiles, or a lack of sealer on the grout -- the moisture that gets behind the tiles will increase. If the plumbing fixtures are not sealed with plumber's putty so that the air gap between the faucets and the tiles is not closed, water will surely get into the wall here. If the insulation is minimal, moisture will be drawn to the cold surface of the drywall. But most surprisingly, with the exception of porcelain tiles, glass tiles and epoxy grout, no tiles and no grouts are vapour proof -- they all let vapour through -- right through the ceramic tiles themselves! This vapour may seem like a very small source of moisture, but if it cannot dry out of the wall behind, it can accumulate into condensation, flow to the bottom of the wall, rot the drywall and wood and even drip on the ceiling below -- all with absolutely no cracks in the tile surface! This is a big time problem with a steam shower and an all too common but mysterious problem with ordinary showers and tub/shower enclosures.

That is one reason why the building code specifically says not to put an insulation vapour barrier behind the drywall of a shower area, the vapour barrier stops all moisture movement from going into the insulation but allows, even forces the moisture to accumulate in the drywall or even in the cement board -- water resistant or not. The best showers are built with a totally vapour proof membrane over the drywall and then the tiles -- you could even say that the tiles are nothing but decoration over the real shower. This keeps all the water out. Check out the Kerdi Membrane -- what I consider to be the

best of the shower systems.

Oh, by the way, cloth duct tape ALWAYS fails. It has no long term holding power and should never be used for ducts. Use it only for TV shows or temporary wrapping. Use the red Contractor Plastic Sheathing Tape to make repairs in a vapour barrier and only aluminum duct tape on hot air ducts. Remember, all drywall manufacturers recommend not using a vapour barrier at all behind shower tiles because it sandwiches the wall board between the water source, the shower, and a dead end, the vapour barrier. When you use the Kerdi membrane, it is right under the tiles and the wallboard not only stays dry, but always has a drying potential through the rest of the wall to the outdoors. The Kerdi is the vapour barrier with no organic material and only a very thin mortar line between it and the shower to accumulate moisture.

[Click here for more details on stopping leaks in existing showers.](#)

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