



Wheelchair Accessible Shower

Q. *We are building a new home on a slab foundation that is already poured. The customer uses a wheelchair and wants a curbless shower in a bathroom with a tiled floor. Is it possible to keep the bathroom floor level with the finish floors in the other rooms, while still providing some slope for drainage in the shower?*

A. *Tilesetter Tom Meehan, owner of Cape Cod Tile Works in Harwich, Mass., responds: The only way to install a curbless shower with adequate slope for drainage without raising the floor level higher than the finish floors in other rooms is to jackhammer the slab and drop the floor about 3 inches.*

But if the homeowner is willing to compromise, you can install the tile without demolishing the existing slab. After installing the drain assembly, set flush with the slab, install a waterproof membrane like NobleSeal TS (Noble Company, 800/878-5788, www.noblecompany.com), bonded to the slab with thinset. Apply more thinset on the top side of the membrane, and then install a Portland cement mud base at least 1¹/₄ inches thick, providing a pitch to the drain. If possible, the slope should be 1/4 inch to the foot; if the slope is any shallower, you risk ponding problems. The last step is to install the tile. This will result in a floor that may be about 2¹/₂ inches higher than the finish floor of any adjacent room, depending on flooring material, but a beveled saddle at the door threshold should accommodate a wheelchair.

Swelling of OSB Roof Panels

Q. *We build timber frame homes and wrap them with insulated panels made with skins of OSB on the outhouse and*

rigid foam insulation on the inside. We've been pleased with the results except for one thing: the swelling of the OSB at the edges. We've seen no damage to the roof structures, but the ridging is unsightly when the roofs are covered with asphalt shingles. So far, we haven't been able to find a solution, other than to make sure that the roofer covers the roof immediately with felt and uses a good-quality shingle. Have you seen any instance where this swelling has contributed to roof failure?

A. *Contributing editor Paul Fisette responds: The problem, caused by moisture adsorption, is fairly common with stressed-skin panels installed on roofs. The panel edges take on moisture more quickly than the rest of the panel and swell as a result — one of the shortcomings of OSB. What can happen with roof panels is that warm, moist air from inside the house leaks through the seams. As the indoor air cools, the moisture condenses and wets the panel edges. The moisture may also collect on the underside of the impermeable asphalt roof felt and shingles, compounding the problem. The solution is to meticulously seal the seams of adjoining panels with a product like spray urethane. Inject foam-in-place urethane into the seams before assembly or drill holes and fill the seams after the panels have been installed. Be careful about using spray-in-place urethane to seal panels in cold weather. The necessary heat of reaction is wicked away by the cold, which can interfere with the curing process and leave an unprotected seam. Check with the spray-foam manufacturer for recommendations on cold weather installations.*

Gas Appliances in Basement

Q. *I am remodeling a single-family house with a full basement. The furnace and water heater are located in the basement. The local fire marshal said that it's okay to locate propane appliances such as furnaces and water heaters in the basement. He cites the International Residential Code (chapter 24) and the National Fire Prevention Association LPG code. The local building inspector, however, cites the Uniform Plumbing Code, which he says disallows liquid-fired appliances below grade, including in a basement. UPC 1213.6 is specific only to water heaters. Who is right?*

A. *Mike Casey, a licensed plumbing contractor in California and Connecticut and coauthor of Code Check (Plumbing and HVAC) responds: Sounds like the fire marshal and the code official need to chat. In most municipalities, the building official has the final say when it comes to residential property modifications. Additionally, the codes the fire marshal cites may not be adopted in your town.*

The 2000 *Uniform Plumbing Code*, section 1213.6, does indeed prohibit water heaters from being installed in a basement or pit where "heavier than air gas might collect and form a flammable mixture." The 2000 *Uniform Mechanical Code*, section 304.6, states about the same for all liquid-fuel gas appliances.

I have known some jurisdictions to allow the installation in basements as long as there are provisions to allow unburned gas to drain away (like a pipe) and/or an automatic sensor and gas shutoff. You might

Q&A

ask the building official whether he would approve an alternative method like that.

Frozen Air Hoses

Q. *In cold weather I always have problems keeping nail guns working, due to frozen air hoses. Is there a solution?*

A. *Framing contractor Michael Davis responds:* I thought I knew a thing or two about working in cold weather until I went to build condominiums on Colorado's Western Slope, with morning temperatures of 6° or 7°F and highs in the 20s. Everything is frozen solid, even the lumber, which is 19% moisture. Cutting a board results in a shower of ice crystals and frozen wood particles, and hitting your finger with a hammer at those temperatures is definitely something you want to avoid.

Keeping air nailers working under those conditions is a challenge, because compressed air contains moisture. But there are things you can do.

I start by tenting the compressor as close to the power supply as possible to avoid blowing breakers and burning up motors. I put an electric heater next to the compressor inside the poly tent, which is held up by a simple wooden framework. Keeping up the temperature of the compressor tank ensures that the air coming out of the tank is warm, so it doesn't condense moisture in the hoses or guns. Draining the moisture from your compressor tank is always important, of course. In warm weather, I do it every afternoon; in cold weather, I do it four times a day. When I put the compressor to bed at night, I keep the heater going and let it warm all night. Starting out in the morning with a warm, dry compressor gives you a big head start.

I also store my nailguns and hoses in a large metal box and keep a heater going in there, as well. I put a piece of wire mesh across the box in front of the heater, so that nothing comes in

direct contact with it. I drape an insulated concrete blanket over the box to keep the heat in. In the morning, my hoses are dry and pliable, and the air tools are toasty warm. Nailers always need oil, but in cold weather it's especially important. When I put them in the box at night, I give them a few drops of oil and stand them on end, air connector up. This lets the moisture rise out of the tool as it is heated, and lets the warm oil drain down into the works.

If you go to the trouble of tenting your compressor at the power pole so it blows warm air, you want to ensure that that air is still warm when it hits the tool at the other end of the line. So don't lay the hose in the snow. The ground is frozen, so you can't drive stakes to hold it up. Instead, I fill a bunch of 5-gallon paint buckets with sand and set one every 10 feet or so in a line from the compressor to where I'm working. Then I pull my hose over the buckets and wire it to the handles so that it stays taut. At the building, I nail some loops of banding to the wall and run the hose through them to keep it up out of the snow and out of the way. I do the same with the electric lines. Keep everything up out of the snow and ice. There is nothing worse than freezing your hands off trying to roll up wet, icy cords and hoses at the end of a cold day.

Finally, depending on how cold it is, you may have to keep extra tools and hoses in the warming box and swap periodically. If you follow these steps, you should be able to work in about any cold, short of Antarctica. And if it's that darn cold, stay home!

Got a question?

Send it to Q&A, *JLC*, 186 Allen Brook Ln., Williston, VT 05495; or e-mail to jlc-editorial@hanley-wood.com.

