Thawing a Buried Waterline

Q. *Is there any way to thaw a plastic waterline when it's buried below frozen ground ?*

A. *Don Birchard responds:* When a waterline is not buried deep enough, it often freezes in an area that is kept clear of snow (a driveway, for example). Lacking the insulating blanket of snow, the frost drives deeper into the ground.

Whenever possible, I thaw the frozen section of a pipe from inside the building it supplies. After shutting the power off to the well pump, I disconnect the plastic waterline at the pressure tank. I chuck a small drill pump on the end of a variable-speed drill, then pump a steady stream of warm water into the plastic waterline. The recirculating

warm water nibbles away at the frozen plug until the line is cleared.

The drill pump has inlet and outlet connections sized for standard garden hose fittings, and can be purchased at most hardware stores for less than $10 (Flotec, 273 Wright St., Delavan, WI 53115; 800/365-6832). I reduce the outlet of the pump with a 1/2-inch insert fitting, attach a length of plastic tubing, and feed the tubing into the waterline until it reaches the frozen section. A 2-foot length of garden hose attached to the inlet side supplies the pump (see photo).

Holding the disconnected end of the waterline over my container of warm water, I carefully pump warm water into the plastic pipe. When the pipe fills with water, it overflows into the container, creating a "loop" of water.

Typically, it takes about 20 minutes to melt the ice plug. Unheated water will work in a pinch, but the thawing process will take longer.

Don Birchard *is a plumber in Montrose, Pa.*

Vinyl Flooring on Slabs

Q. *When installing vinyl flooring on a below-grade slab, how do I check for excessive moisture in the slab?*

A. *Jim Hamrick responds:* There are two "subjective" tests that can be used to check for the presence of excessive moisture levels in a slab on grade.

The simpler is the "Rubber Sheet/Plastic Mat Test." Using duct tape, carefully tape the edges of a 2x2-foot piece of 4-mil poly to the slab for 72 hours. If you observe any moisture droplets or surface color darkening of the slab, excessive moisture is present.

A more definitive approach is the "Bond and Moisture Test." Install a 3x3-foot piece of the actual flooring material per specs, using the proper adhesive. Seal the perimeter of the test area tightly to the floor with duct tape and allow it to cure for at least 72 hours. Remove the tape, and pry the flooring from the slab. You have a moisture problem if the tile comes up easily, the adhesive appears damp and stringy, or the adhesive releases from the concrete and stays on the flooring material.

A more scientific test is the "Calcium Chloride Test," where moisture migration rates are measured using a petri dish covered by a plastic dome. If this test is to be used, contact the flooring manufacturer for the range of acceptable values.

A good reference is the *Armstrong Engineered Installation System* manual, available from the Armstrong company (Armstrong Installation Products Division, P.O. Box 3001, Lancaster, PA 17604; 717/397-0611).

Jim Hamrick *is an architect in York, Pa., and an instructor at Stevens State School of Technology in Lancaster, Pa.*

Engineered Lumber Stringers

Q. *Can I use laminated veneer lumber for stair carriage material? Since it doesn't shrink, it seems it would solve many of the problems associated with the shrinkage of sawn lumber stringers.*

A. *Curtis Eck, P.E., responds:* LVL should work fine for stair carriages in most cases, but you should check with the manufacturer before cutting. Because LVL is intended primarily for use as a beam, manufacturers often warn against notching. Otherwise, it has not only the advantage you mention, but also superior strength. And because LVL is available in wider sizes than dimensional lumber, it may be useful, if sized correctly, for longer stair spans than sawn stringers can safely handle.

The engineered lumber manufacturer can help you select the best product for a stair application. For example, in addition to Microllam LVL, my company, Trus Joist MacMillan, also makes Timberstrand LSL (laminated strand lumber). LSL is less expensive than LVL, is easy to cut, and has great resistance to nail splitting. To assist builders, Trus Joist MacMillan has just introduced a stringer sizing chart that specifies minimum throat depths and allowable stair spans for Timberstrand stringers. For a copy, call 800/628-3997.

Curtis Eck *is a Seattle-based technical representative for Trus Joist MacMillan.*