Q&A

Getting Rid of Vent Gas Smell

Q. *Is there any practical way to get rid of the smell of vent gas coming up through the traps in a house? The house has a septic tank, and the venting appears to be to code. The problem is persistent, especially after rain.*

A. *Dave Yates responds:* You can try replacing the closet gaskets, but that may not fix the problem. Also check for missing traps at all the sink, tub, and shower locations. If nothing is amiss, there is a solution we have used successfully many times over the years.

Septic tank systems are missing one element that we're required to install on sanitary sewer lines connected to municipal systems — namely, a trap set in the main line. When dealing with the problem you describe, we install a standard 4-inch trap set consisting of a sanitary T laid on its back, a house trap, and two cleanouts (see drawing, below). The trap set should be installed with a 1/4-inch-per-foot fall and laid in crushed stone to prevent it from settling back and lying in the wrong direction.

The trap stops the septic tank odors, while the fresh air vent permits free passage of air by natural convection up and out through the roof vents, carrying away any foul odors within the home's drainage system.

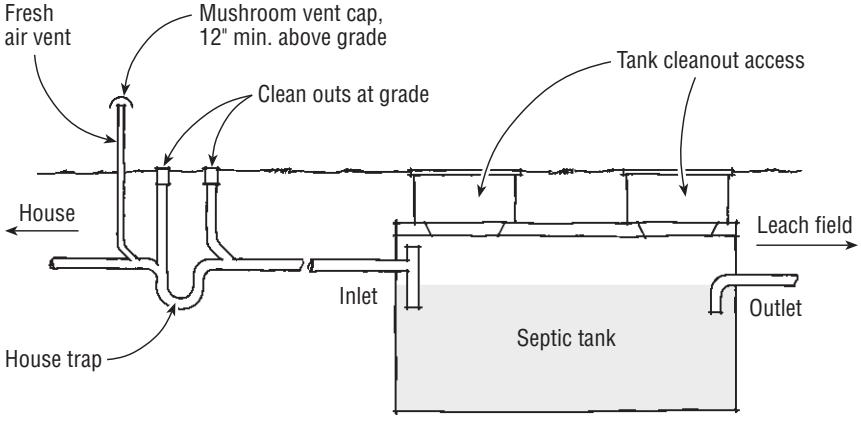
The first time I did this, I worried a bit about creating an air-bound situation, given that the tank is unvented. But, in fact, what goes into a septic tank comes out the other side, and its air volume doesn't change sufficiently during that process to create any problems. So the technique solves the problem and improves the home's venting system.

It may be tempting to combine the mushroom vent with the house-trap cleanout, but don't do it: Technically, that would create what's called a "crown vent," which is disallowed under most plumbing codes. The reasoning behind this is the fear that the trap seal might be lost through evaporation as air is drawn up through the mushroom vent.

By the way, we rarely see clogs in house traps unless the occupants have flushed things down the line that had no business being there in the first place, such as grease, paper towels, rags, pencils, pens, false teeth, and cups! I thought the advent of 1.6-gallon-per-flush water closets would mean constant trap clogs, but I have not seen any additional stoppages created by their use.

Dave Yates *owns and operates F.W. Behler, a heating and plumbing contracting company in York, Pa.*

House Trap



Roof Truss Spacing

Q. *We see ourselves as quality builders. We frame everything 16 inches on-center, including roof trusses. Most visitors to our job sites feel that this is overkill and that we're wasting the customer's money. Is putting trusses 16 inches on-center with 5/8-inch sheathing and 1/2-inch drywall on the ceiling a thing of the past?*

A. *Frank Woeste, P.E., responds:* I am not aware of any performance issues regarding 1/2-inch drywall installed on trusses at 16-inch versus 24-inch centers. If interior moisture were improperly managed — for example, if a clothes dryer were vented into a finished garage area instead of to the outside, a 16-inch on-center truss spacing would be more forgiving of the bad practice.

But in general, it doesn't matter if the truss spacing is at 12, 16, or 24 inches. What dictates the truss design is the roof design snow load — typically 20 or 30 psf in most of the

U.S. Once the builder or architect specifies the loads (for example, 20-10-0-10, for top chord live, top chord dead, bottom chord live, and bottom chord dead loads), the truss spacing, and the desired shape of the truss, then truss engineering takes over.

The engineering design — usually computer generated — dictates the size and grade of lumber required in the chords and webs. There are ten grades of 2x4 southern pine, for example. If the builder requests a 16-inch on-center spacing, a lower grade will be used that meets the structural requirements. Conversely, builders who request the 24-inch on-center design should get a higher grade of lumber relative to the 16-inch on-center design. Higher grades of lumber obviously cost more than lower grades, so it becomes a trade-off between spacing and grade. In general, the wider 24-inch spacing is the most economical for residential construction.

Frank Woeste, P.E., *is professor emeritus at Virginia Tech in Blacksburg, and a frequent contributor to* JLC.

What to Do About Mold on Framing Lumber?

Q. *We're seeing more mold and mildew on framing lumber (or maybe we're just noticing it more, with all the recent attention to mold). Should we try to remove this before we insulate and put up drywall? How? Or is it safe to assume that it won't be a problem in the future because the inside of the house will be dry?*

A. *Kevin Powell responds:* The answer may depend on the perceptions of your customers. While it's a fact that mold will not grow once the materials dry out, you might want to consider other factors: Are the homeowners sensitive to the mold issue? Does your site get frequent visits from prospective customers? Is the moldy lumber being used where it might be rewetted, like an exterior wall in a bathroom?

If so, it might be a good idea either to not install the moldy lumber, or to clean any installed framing that has molded before close-in.

APA – The Engineered Wood Association recommends using either a commercial mold-mildew remover or a household bleach solution, while the EPA recommends the use of a detergent-and-water solution. Do the cleaning in a well-ventilated area and never combine bleach with ammonia.

A builder should have a mold protocol in place in order to consistently handle situations as they arise. The protocol should focus on mold prevention, which is typically less costly than remediation in both money and reputation. Inspect material deliveries for mold; establish an agreement with your suppliers that specifies how long you have to inspect a shipment and what steps will be taken if you choose to reject materials due to mold. Time deliveries so that moisture-sensitive materials can be stored in the dry. If materials can't be used right away, make sure they can be protected from the weather. This may seem like an obvious practice, but given the public's heightened awareness and sensitivity to mold, it's worth reviewing your storage practices.

Framing can endure a reasonable amount of wetting, but make sure you allow enough time for it to dry out before closing in. If some mold growth has occurred, try explaining to your clients that it will not compromise the structural integrity of the framing. Hopefully they will understand, but if they insist, you may have to clean off the mold.

Kevin Powell *is a research analyst and wood products specialist at the NAHB Research Center.*

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.