

Reliability of Low-Flow Toilets

Q. *My remodeling customers are frequently skeptical when I replace their old 5-gallon toilets with 1.6-gallon toilets. They have heard of problems like "skid marks," multiple flushes, and so forth. Also, the word I have heard from the field is that pressure-assisted toilets create more problems than they are worth. Have the new low-flow designs solved these problems?*

A. *Rex Cauldwell responds:* When 1.6-gallon toilets first came out, they did not work well because they were not designed for low flush: They were essentially 3.5-gallon toilets with a 1.6-gallon tank capacity. Everyone had trouble with them (you had to flush twice), so many consumers resorted to pressure-assisted units. Pressure-assisted units typically work well in the beginning (although many are noisy), but may eventually need repairs. In some cases parts may be hard to find.

I prefer to keep it simple and use a gravity toilet. Most of the new 1.6-gallon designs work fine. However, when replacing a 3.5-gallon unit with a low-flow, I try to keep the customer's expectations in line. Skid marks are a problem with all the units and are just something they'll have to live with. Some manufacturers give a written one-flush warranty and advertise quiet operation, but I make no personal guarantees.

To make the low-flows work better, many manufacturers reduced the toilet's passageway diameter to around 1.5 inches. This gives the water the velocity it needs to evacuate the bowl, but the narrower outlets tend to clog more often. One manufacturer, Toto, advertises a much larger passageway — 2¹/₈ inches — and other makers are following suit.

A larger passageway — or a higher price

tag, for that matter — doesn't necessarily mean the toilet will flush better. Some manufacturers have designs that are just downright stupid. One well-known unit has to have the handle in the down position for the entire length of the flush. You can't just push the handle down, let go, and assume it will flush. If I'm asked to install this unit, I'll make minor modifications to get it to work better.

In general, low-flow toilets are more sensitive to minor problems than 3.5-gallon units. For example, putting blue tablets in the tank causes a sticky coating to form everywhere. Older toilets can tolerate this, but with low-flows, it can slow down the water, causing "lazy flush syndrome." And even a minor misadjustment of the water level refill system in a low-flow unit may only allow 1 gallon to enter the tank — not enough for a successful flush. By contrast, if a 3.5-gallon toilet is misadjusted so that the tank only has 2.5 gallons, the toilet will probably still flush fine.

Ask your plumber for advice when you're selecting a low-flow toilet. He or she should know which models give the best service.

Rex Cauldwell is a master plumber and electrician in Copper Hill, Va.

Sanding Cupped Floors

Q. *Recently we installed a new oak strip floor during renovation of an old unoccupied house, and now the floor has permanently cupped. The house is built over a fairly damp crawlspace and has diagonal board floor sheathing. The original yellow pine flooring was badly damaged by termites, so we laid new 3/4-inch plywood subflooring over the yellow pine, put down felt paper, and*

installed the floor. I'm assuming that the floor cupped because the oak was put down dry in a damp location, picked up moisture, and swelled to the point that it has cupped upward at every joint. Even when air-conditioning was added to the house to dry things out, the floor has remained cupped. Now that the flooring has been installed for several months and the house has a more constant climate, can I sand the floor level and refinish? Or will it just cup again?

A. *Howard Brickman responds:* You're right — the cupping is a result of excessive moisture from below. You can sand a cupped floor as long as the cupping is actually permanent. Remember that most structures undergo a moisture cycle with the changing seasons. In the winter when outdoor temperatures are below freezing, buildings tend to dry out and wood flooring will shrink. In the summer, with higher temperatures and more humidity, the moisture content of the wood increases and cupping is more pronounced. If you sand a cupped floor that later flattens out as the relative humidity and the moisture content of the wood decrease, then the floor will crown (develop a convex profile).

The secret to sanding any cupped floor is to be absolutely certain the cupping is permanent. I would advise observing the floor for an entire heating season before sanding.

Howard Brickman is a wood flooring contractor and consultant in Norwell, Mass.

Joist Hanger Nails

Q. *What's the scoop on joist hanger nails? Are they as strong as full-length nails? Can you use them to attach the hanger to the beam?*

A. *Dave Utterback responds:* The short joist hanger nails supplied by hanger manufacturers come in 8d and 10d shank size (10d is the minimum you should use for framing) and are 1¹/₂ inches long. They're designed to attach the hanger to the joist without protruding through the other side of the joist.

You may also use them to attach the hanger to the beam where the hanger allows the use of a 10d or 12d nail (usually single joist hangers), but if you do so you can only use 77% of the hanger's rated load capacity. These short joist hanger nails may not be substituted for nails in double-shear hangers or for face-nails on skewed hangers.

Dave Utterback, of Overland Park, Kan., is a certified code inspector and a former builder.

Removing Latex Paint

Q. *I have trouble removing old latex paint. It doesn't scrape well and it gums up sandpaper. What's the best way to do this?*

A. *Mike Shannahan responds:* I'm not sure it's the "best" way, but here's what works for me. I use a Porter-Cable disc sander (#7402) that comes with a paint remover attachment. The pad takes 6-inch tungsten carbide discs. I typically use 36 grit, which is pretty coarse and requires a light touch. The problem with a finer grit is that it gums up too quickly.

Often, I'm cutting through six or eight layers of paint. Even with 36 grit, it doesn't take too long for the disc to gum up with latex paint. At around \$6 per disc, I can't afford to throw them away, so I remove the discs and soak them in a can of floor stripper — the stuff you use to take up old mastic from vinyl floors. I let them sit over night,

then have a helper remove the crud using an angle grinder fitted with a wire-brush cup. We lay the grinder on its back, C-clamped to a sawhorse or the tailgate of a pickup. My helper holds the discs with a large pair of pliers and eases them down onto the spinning brush until they're clean. (This task requires rubber gloves and safety goggles.) I typically have 40 or 50 discs on a job.

After removing the paint, I clean the surface with 3,500-psi pressure washer. This raises the grain, so I come back a few days later and sand by hand or with a vibrating sander.



Mike Shannahan restores old homes in La Porte, Texas.