

# Q&A

## Q. To Bond or Not to Bond?

*As a building inspector, I understand Article 250 of the most recent National Electrical Code (2005 NEC) to mean that any potential grounding electrodes available to each electrical service must be bonded together into that service's grounding electrode system. But the code also says that an underground gas piping system may not be used as a grounding electrode. Some of my colleagues believe this means that gas pipes should not be bonded to the water pipes, while I believe that they should be. Who is right?*

**A.** *George Flach, former chief electrical inspector for New Orleans, responds:* Gas pipes often supply equipment and appliances that are also powered electrically — such as gas-electric central heating furnaces and gas heaters with pumps used for warming water in swimming pools, or gas clothes dryers and gas ranges with illuminated ovens and spark igniters — and they may become energized by the branch circuits that power these units.

To reduce that risk, Section 250.104(B) of the 2005 NEC requires that all gas pipe be bonded. However, the NEC also recognizes the equipment grounding conductor of each branch circuit as a bonding means for the gas piping, and requires no additional bonding or grounding.

Still, there's no reason gas pipes can't be bonded to the water pipes. Gas utility companies usually equip their underground metal gas distribution systems with cathodic protection, typically with an isolation coupling or union at each customer's gas-pipe connection. Grounding and bonding of the customer-owned gas piping system won't interfere with this cathodic protection. And as the note following NEC 250.104(B) emphasizes, it's always a good idea to bond all metal piping and metal air ducts.

There are no changes to 250.104(B) in the pending edition of the 2008 NEC.

## Q. Brick Staining

*Some of the brickwork on a house I built has developed a white stain that resembles efflorescence but is limited to only two areas: a mailbox and a window. The gutter above the window overflows occasionally, but the water doesn't appear to actually fall against the brick. What's causing the stain, and how do I get rid of it?*

**A.** *Mike DeBlasio, a masonry contractor in Littleton, Mass., responds:* Efflorescence occurs when soluble salts in the masonry are dissolved by moisture being

driven through the material via vapor transmission or hydrostatic pressure. When the solution reaches the surface and evaporates, a salt deposit — efflorescence — is left behind.

However, with efflorescence you'd see more widespread staining at grade and above. The problem you describe is more likely caused by contact between aluminum and the brick and mortar. Mortar is highly alkaline; it will react with an aluminum mailbox or window frame, breaking down the metal and causing staining.

To prevent direct contact and reduce the staining, you should cut the aluminum back, away from the masonry, and install a proper sealant joint. Unfortunately, I don't know of any stain remover that will fix this problem. (Don't use muriatic acid; it will attack and damage the mortar.)

### GOT A QUESTION?

Send it to Q&A, *JLC*, 186 Allen Brook Lane, Williston, VT 05495; or e-mail to [jlc-editorial@hanleywood.com](mailto:jlc-editorial@hanleywood.com).



## Q&A

### Q. A Quick Fix for Squeaky Floors?

*When a floor is covered by wall-to-wall carpeting, is it possible to fix squeaks without taking up the rug to get to the subfloor?*

**A.** *Tandy Reeves, a certified flooring inspector and CEO of Flooring Inspection Training Services in Tulsa, Okla., responds:* Unless you have access to the floor joists and subfloor from underneath, the best approach is to pull back the carpet and cushion to see where you're putting the screws or nails. That way, you'll be able to verify that you're securely fastening the subfloor to the floor joists and eliminating the squeaks. After making the repairs, have an installer put the carpet back properly; reinstallation is not very expensive.

Where there is access to the floor system from underneath, you should be able to locate the squeaky area and correct the problem with strategically applied shims or blocking and construction adhesive.

Keep in mind that there may be finished flooring covered by underlayment beneath the carpeting, and the squeaking may be the result of movement between these layers of wood. In that case, hitting the joists wouldn't be critical, so fastening through the carpet might be an option.

I wouldn't use screws, though; unless a screw runs all the way through the carpet and cushion and countersinks itself, it could create a dimple in the carpeting as well as a screw head to step on. And if the screw should grab some of the carpet, primary backing, or secondary backing, it could pull and distort the carpet in that area. Instead, use pneumatically driven ring-shank nails, which provide the most holding power but are less likely to damage the carpet.