Restoring Solid Surfacing

Q. *What's the best way to restore the shine on an older solid-surface sink that looks dull?*

A. *Tony Pelcher, a solid-surface fabricator, responds:* Examine the sink closely to see whether it is scratched or merely dull. A sink that is dull but not scratched can be restored with Soft Scrub (a mildly abrasive kitchen cleaner available in grocery stores) and a Scotch-Brite pad from 3M.

If you can feel any scratches with your fingernail, the first step is to sand out the scratches with wet-and-dry sandpaper, available at any auto parts store. It shouldn't be necessary to use anything coarser than 320-grit. Keep the sink wet while you're sanding. After sanding out the scratches, finish with 400-grit wet-and-dry sandpaper, followed by a Scotch-Brite pad with Soft Scrub. In most cases, restoring a sink should take less than 30 minutes.

In general, dark colors are more likely to show scratches than lighter colors. If the sink is dark, allow it to dry after polishing to see if any scratches remain. If necessary, repeat the process until you achieve the desired results.

Installing Wiring Between Ceiling Strapping

Q. *Here in New England, we usually attach 1x3 strapping to the ceiling joists before installing drywall. At most jobs, I see the electricians stapling the Romex cable to the bottom of the joists, parallel to the 1x3 strapping, so the wiring is about 1/2 inch or less from the back of the drywall. Does this meet the* NEC, *or does the wiring need to be recessed farther from the drywall?*

A. *Master electrician Sean Kenney responds:* During the 12 years I worked as a residential electrical contractor, I routinely stapled cable between the strapping. All of the inspectors I encountered in Massachusetts, New Hampshire, and Maine accepted the practice.

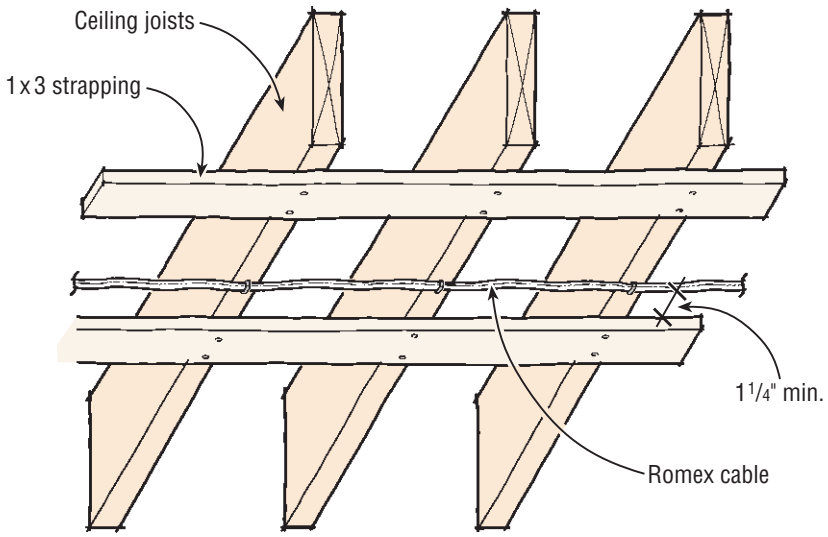
Unfortunately, though, the *National Electrical Code* (*NEC*) is not clear on this issue, and some local inspectors may interpret the *NEC* differently from the inspectors I encountered. *NEC* section 300-4 states, "Where subject to physical damage, conductors shall be adequately protected." In a perfect world, the *NEC* would address the issue of whether cables buried just under the surface of drywall are subject to physical damage. But we do not live in a perfect world.

NEC section 300-4(d) may apply, but only if your local inspector considers strapping to be a "framing member." That section states that "where a cable- or raceway-type wiring method is installed parallel to framing members ... the cable or raceway shall be installed and supported so that the nearest outside surface of the cable or raceway is not less than 1 1/4 inch (31.8mm) from the nearest edge of the framing member where nails or screws are likely to penetrate." The intent of this section is to keep the cable away from the zone where drywall nails and screws can be expected. This section does not require the cable to be 1 1/4 inches back from the drywall — only 1 1/4 inches away from the strapping.

If an inspector feels that the use of strapping creates a series of "shallow grooves," then *NEC* section 300-4(e) may apply. That section states that "cable ... installed in a groove, to be covered by wallboard, siding, paneling, carpeting, or similar finish, shall be protected by 1/16 inch (1.59mm) thick steel plate, sleeve, or equivalent or by not less than 1 1/4 inch (31.8mm) free space for the full length of the groove in which the cable or raceway is installed." If this subsection applies, the question remains whether "free space" refers to the depth of the groove or the distance of the cable from the strapping.

In my opinion, the practice is safe and legal, provided you keep the cable at a minimum distance of 1 1/4 inches from the edge of the strapping. But

Wiring Between Ceiling Strapping



since the *NEC* is somewhat unclear, you should discuss this issue with your local inspector.

Is a Vapor Barrier Necessary?

Q. *Since we always carefully install housewrap on our buildings, paying attention to the details, is it necessary to install a poly vapor barrier under the drywall?*

A. *Corresponding editor Paul Fisette responds:* In a heating climate, you should include a vapor barrier on the warm, wide side of the insulation, even if the home has plastic housewrap.

Housewraps and poly vapor barriers are different materials that perform different functions in a wall. Housewraps are installed on the outside surface of the exterior wall sheathing. Housewrap manufacturers often tout them as a barrier to air leakage. While there have been some reports that housewraps do help minimize air leakage, the manufacturers' claims may be overstated. Many building scientists believe that the holes punched through housewraps by staples, siding nails, and other fasteners compromise the effectiveness of wraps as air barriers. Envelope testing has shown that sealing the interior drywall (airtight drywall approach), or carefully installing a polyethylene barrier under the drywall, and/or sealing the exterior sheathing is a more effective way to minimize air leakage. I think that the greatest value of housewrap is as a redundant weather barrier (see "Housewrap vs. Felt," 11/98); it should be required in all homes.

A layer of polyethylene under the drywall, if very carefully installed (with taped joints and sealed penetrations), is an effective air barrier. However, in most homes the polyethylene is casually installed, and its main function is as a vapor diffusion barrier. Water vapor is transported by two different mechanisms: air movement and vapor diffusion. Air moves in response to air pressure differences. As it moves, it carries with it an assortment of gases, one of which is water vapor. So when air moves from one location to another, it brings water vapor along for the ride.

Water vapor moving via diffusion moves independently of air. Water vapor moves from areas of higher temperatures and moisture concentrations (higher vapor pressure) to areas of lower temperatures and moisture concentrations (lower vapor pressure). That is why we put vapor barriers on the warm side of the wall. Vapor pressure can drive water vapor directly through materials. Materials with low permeability (lower than 1) are classified as vapor barriers because they are considered to have a permeability that is low enough to retard the diffusion of water vapor to negligible levels. While the amount of moisture that is moved by diffusion is relatively small compared to the amount moved by air pressure, it is significant and should be controlled. Usually, the easiest way to control diffusion is by using a low-perm material. Kraft-facings on insulation, polyethylene, and vapor barrier paints are some common materials that function as effective vapor barriers.

Painting Aluminum Siding

Q. *Is it possible to paint aluminum siding?*

A. *Former painting contractor Ed Fillbach responds:* Yes. If you carefully apply one or two coats of premium 100% acrylic latex paint on aluminum siding, you can expect it to last for about ten years.

Before painting, remove any chalk, dirt, or mildew by thoroughly washing the siding, preferably with a power washer. Aluminum siding, especially if it has been directly exposed to sun and rain, may be heavily chalked. If there are any signs of mildew, a mildewcide (available from your paint dealer) should be added to the paint. In order to prevent mildew from recurring, it's best to paint the siding as soon as possible after cleaning.

Building a Wine Room

Q. *Can you provide some advice on construction details for building a small wine storage room in a corner of a garage?*

A. *Richard M. Gold, author of* How and Why to Build a Wine Cellar, *responds:* A garage, unless it's underground, is the worst place for a wine storage room, because it experiences great temperature swings. Wine storage requires a temperature of 55°F +/- 5°, with infrequent and gradual temperature changes.

The best place for a wine storage room is in a basement. If the home lacks a basement, the homeowner can buy a self-contained storage chamber, which has a built-in compressor and looks like a piece of furniture. These are available from International Wine Accessories in Dallas (800/527-4072) and the Wine Enthusiast in Pleasantville, N.Y. (800/356-8466).

If the home has a basement, the wine storage room is best located at an outside corner, preferably on the north side. The walls and ceiling of the wine cellar should be heavily insulated. The basement floor should be at least 6 feet below grade and should be uninsulated, so that it can serve as a heat sink into the deep-soil temperature. If the climate is not too hot, a wine cellar can be passive (without an air conditioner). If mechanical cooling is needed, use an air conditioner designed for wine cellars. (Air conditioners designed for bedrooms will freeze their coils at 55°F.) Wine should be stored at 80% humidity, which can be provided by a plastic bucket full of water with a wick towel hanging over the side.

If the customer insists on devoting an above-ground room to wine storage, it can be done. The walls, ceiling, and floor should be very well insulated, and an air conditioner or cooling unit (the type used for walk-in coolers) should be installed.

ACQ-Treated Wood and Fastener Corrosion

Q. *Does ACQ-treated wood contribute to accelerated corrosion of galvanized fasteners?*

A. *Kevin Archer, product development manager at Chemical Specialties, a Charlotte, N.C., manufacturer of ACQ, responds:* All types of preservative-treated wood are potentially more corrosive to galvanized fasteners than untreated wood. Under controlled tests for corrosion, galvanized-steel fasteners in ACQ-treated wood perform similarly

to galvanized fasteners in wood treated with other preservatives (CCA, ACZA, and copper boron azole).

The treated-wood industry recommends the use of hot-dipped galvanized-steel fasteners, which have a thicker coating of zinc than electroplated galvanized fasteners. In environments where treated wood is expected to remain wet for long periods of time, stainless-steel fasteners will perform better than hot-dipped galvanized fasteners.

EPDM Over OSB

Q. *Does EPDM roofing always need to be installed over polyisocyanurate insulation, or can it be installed directly over OSB?*

A. *Roofer Joseph Bublick responds:* Although I prefer a base of polyisocyanurate, OSB or plywood will work fine under fully adhered EPDM. Install the OSB smooth side up. To ensure an even surface, I make sure the fasteners are flush, and install duct tape over the sheathing seams to soften any transitions that may occur if the sheathing begins to curl. There is no need to prime the OSB before installing the EPDM adhesive.

EPDM sticks more tenaciously to OSB or plywood than it does to polyisocyanurate. If you are used to being able to adjust the EPDM slightly as it's installed, this can be a disadvantage. Once the EPDM is cemented to OSB, you won't be able to pull it up for readjustment.

Who's Responsible?

Q. *When we pulled off the siding and sheathing from the gable end of an existing house in preparation for an addition, we were surprised to find that the roof has a 4x12 structural ridge beam supporting common rafters. We had assumed that the roof was framed with trusses, since the home is only nine years old. The load from the ridge beam will need to be carried down to a solid footing, adding about $600 of unexpected costs to the job. Unfortunately, our contract has no language covering such a surprise. My question is, who is responsible for these unexpected costs: the homeowner or the builder?*

A. *Patricia McDaniel, owner of Boardwalk Builders in Rehoboth Beach, Del., responds:* From the client's point of view, it is always the contractor's fault. At this point, you're in the unfortunate position of trying to close the barn door after the horse has escaped. If you could have inspected the attic but didn't, the homeowners have a good case that it isn't their fault that you didn't know what was up there.

At the start of the job, it's essential to communicate with your client about how you will handle hidden conditions. The following suggested contract language comes from a sample contract in Gary Ransone's book, *The Contractor's Legal Kit*: "Unless specifically included in the 'General Scope of Work' section above, this Agreement does not include labor or materials for the following work: … correction of existing out-of-plumb or out-of-level conditions in existing structure. Correction of concealed substandard framing. Removal and replacement of existing rot or insect infestation.…" A similar clause in your contract could have helped protect you in your present dilemma.

The best defense against such surprises is a good offense. Always plan ahead, and take time to look around all the nooks and crannies of the job site. It's also important to charge a professional markup, so that you can absorb the costs arising from fights you can't win. Look on the bright side: The lessons learned from this $600 surprise may help you avoid a much more expensive misunderstanding in the future.

Copper Roofing Over SIPs

Q. *Can copper roofing be installed over SIP roof panels? I have heard that high temperatures under copper roofing might damage the SIPs.*

A. *Bill Wachtler, executive director of the Structural Insulated Panel Association, responds:* In general, temperatures would need to exceed 190°F before any degradation of a SIP would be possible. In a typical roof application, it's hard to imagine that there would not be sufficient dissipation of heat to prevent temperatures from rising that high.

Nevertheless, there are preliminary reports of at least one house with a copper roof installed over SIPs that developed problems requiring investigation. That investigation is ongoing, so no conclusions can be made yet. In the meantime, I recommend checking with the copper roofing manufacturer and supplier, as well as the SIP manufacturer, concerning proper application procedures. Until better data are available, I would recommend a cool roof application for copper. A cool roof application creates an air space between the SIP roof panels and the metal roofing.

GOT A QUESTION?

Send it to On the House, *JLC*, 186 Allen Brook Ln., Williston, VT 05495; or e-mail to *jlc-editorial@hanley-wood.*