

**Q** While working on a kitchen renovation project for a client, I was asked to take a look at his deck. He had noticed that a few of the galvanized lag screws used to fasten the ledger to the house had developed some rust and wanted me to replace the rusty screws. Is it OK to put the replacement screws in the same holes, or will the potential pre-existing rust and corrosion in the hole promote early rust on the new ones?

**A** Bruce Barker, a licensed contractor and certified ICC inspector who owns Dream Home Consultants, in Fernandina Beach, Fla., responds: First, determine if it is necessary to replace the screws. If the surface rust can be easily removed and if the deck ledger and the band board/rim joist inside the structure appear to be in good condition, then it is usually acceptable to leave the lag screws in place. You should advise your client to monitor the screws and the wood for deterioration and to replace them if the deterioration becomes significant.

If the rust is deeper than the surface or if the deck ledger or the band board/rim joist is deteriorated, then replacement is recommended. Installing new fasteners—whether screws or bolts—in existing holes is not recommended, however, especially when screws are involved. If the fastener is rusted where you can see it, the wood around the fastener may be deteriorated where you can't

see it. It doesn't take much wood deterioration to decrease the load-bearing capacity of the wood and to decrease the withdrawal resistance of the fastener.

Assuming that the wood in both the ledger and the house framing that it is fastened to appears to otherwise be in good condition, the recommended procedure is to fill the existing holes in the ledger so that they are watertight, then install new fasteners in new holes.

If you install new fasteners, be sure to leave enough distance between the old holes and the new ones. Good practice is to locate fasteners at least seven fastener-diameters from other fasteners (3½ inches for a ½-inch fastener). You also need to maintain at least 2 inches of clearance between fasteners and the top and sides of the ledger, and a minimum of ½ inch between a fastener and the bottom of the ledger.

Fastener holes can be a water infiltration point. Check the ledger flashing to be sure it is properly installed.

Galvanized fasteners, and all galvanized hardware, are subject to rusting. This is especially true when used with lumber with copper-based preservative treatments in wet environments. The steel rusts when it reacts with the copper (galvanic corrosion of dissimilar metals) in the presence of water. In most environments, the corrosion process can take a long time because of the sacrificial zinc layer that protects the steel, but it can happen rapidly near salt water. This is why the 2018 IRC requires stainless steel fasteners and connectors for all decks exposed to salt water or within 300 feet of bodies of salt water.

For more information about fastener and hardware corrosion, see "Red Rust on Coastal Decks Is a Safety Warning," [jlconline.com](http://jlconline.com) (a review of "Coastal decks: red rust on decks is a safety warning" by Frank Woeste, Joseph Loferski, and Bruce Barker, *ASHI Reporter*, January 2019, as reprinted in *Building Safety Journal*) and "BRANZ Study Focuses on Fastener Corrosion" by Skip Walker ([jlconline.com](http://jlconline.com)).



Minor surface rust that can be removed from fasteners is usually not a problem (3). When corrosion is extensive (4), new lag screws or bolts should be installed in new holes in the ledger, and the old holes filled to prevent water intrusion.

Photos: 1, 4 Bruce Barker; 2, 3 courtesy Skip Walker/BRANZ

Iron and hydroxyl ions released as a galvanized deck-ledge screw corrodes (1) can attack the cellulose in wood and weaken the fibers (2).

**Q** Is there an approved solvent for removing adhesive residue after removing Huber's Zip flashing tape from building materials, such as from the frame and nailing flanges of a clad window? And how about from the hands, after handling that sticky stuff?

**A** Mike Dye, a senior product application engineer with Huber Engineered Woods, responds: Unfortunately, there are no known solvents that can help dissolve the residue from the tape, which uses a proprietary acrylic adhesive. We have heard reports that the use of medical-grade adhesive remover along with a fair amount of elbow grease (scrubbing) can be effective. For your hands, silicone-based products are less likely to dry out and irritate the skin compared with alcohol-based removers.

We have also heard reports that acetone (along with a lot of scrubbing) can be somewhat effective, but that approach would be best used with building materials rather than on skin.

Our group is still looking for a less labor-intensive method to remove the adhesive residue, but our efforts are complicated by the fact that most of the tape's adhesive formula is a trade secret that even members of our group are not privy to.

**Q** Are there OSHA-specific guidelines for installing and using roof jacks? Is any additional fall protection required when working off properly installed roof jacks?

**A** Andrew Wormer, JLC's executive editor, responds: When roof jacks are properly fastened to the roof according to the manufacturer's instructions, they add both an element of safety and a useful work platform on sloped roofs. But Peter Barletta, a compliance assistance specialist working out of OSHA's Boston South Office in Braintree, Mass., says that most of the simple and inexpensive adjustable roof brackets you are probably familiar with aren't equipped with integral guardrails, and unless they are (as shown in the photo at right), they aren't a substitute for an OSHA-approved fall protection system. Barletta says that this would typically consist of a full body harness connected to a shock-absorbing or retractable lanyard hooked to a manufactured roof anchor capable of supporting a 5,000-pound load per attached employee. Alternatively, a personal fall protection system with a safety factor of two could be designed, installed, and used under the supervision of a qualified person. Fall protection is always required on roofs where the distance between the eaves and the ground or a lower surface is 6 feet or greater, regardless of the presence of roof jacks.

Don't use roofing nails to install roof jacks; the shanks are too short, the diameters are too small, and the heads—though broad—will pop off easily. Instead, use 8d or 16d common nails driven through the sheathing into the framing. Most roof jacks are adjustable, and after installation, the platform should be level.

For the most stability and to limit flexing, try to use the widest staging planks that will fit in the roof jack. For example, if the roof

jack will accept a 2x10 plank, that is what you should use, not a 2x6 or a 2x8. According to OSHA guidelines, the planking primarily must be able to support, without failure, its own weight and at least four times the intended load. In addition, when fully loaded, the plank should not deflect more than  $1/60$  of the span; that is, a 10-foot staging plank should deflect no more than 2 inches.

Locate the roof jacks within 6 to 12 inches of the end of the staging planks so that when a worker steps on the cantilevered portion of the staging plank, there is not enough leverage to lift the other end of the plank off its support. If the roof is wide and requires multiple staging planks, overlap them by 1 or 2 feet, locating the overlap above one of the jacks. Fastening the planks together with nails or screws will reinforce the assembly and make it more stable.



Fitted with guardrail holders, these roof brackets act as slide-guards and toe boards while providing fall protection.

Photo courtesy: Acro Building Systems