Q&A

Q. Cutting Glass Tile

We had to cut a few glass tiles to complete a backsplash. Even though we used a diamond glass blade in our tile saw, fine chips are visible on the cut edges. What's the trick to cutting glass tile?

A. *Contributing editor Michael Byrne, an industry consultant in Los Olivos, Calif., responds:* Unless its finish approximates the finish of the uncut edges, the cut edge of a transparent glass tile can be glaringly obvious. To minimize chipping, I use a smooth-running wet saw equipped with a blade made specifically for cutting glass, such as the MK-215GL (800/421-5830, mkdiamond.com). So that there is plenty of clean cooling water, I fit the saw with a second pump that has its own feed line (this is in addition to the saw's built-in pump). I also reduce vibration and support the kerf edges by clamping a 3/4-inch plywood table to the saw bed, which provides backing and reduces the chipping that tends to occur at the tail end of the cut, where the tile body is at its weakest (see photos). I feed the tile into the diamond wheel very slowly, easing up even more as I near the end of the cut.

A plywood table clamped to the tile saw's bed (above) and a second water pump with a separate feed line (right) help reduce chipping when cutting glass tile.

Most glass blades leave a surface finish in the 200- to 400-grit range; subsequent grinding and polishing are required until the edge finish comes close to the tile's original finish and luster. Production installers use wet-bath disc or vertical belt sanders, but you can also get satisfactory results with sanding blocks and fine grades of wet sandpaper. Start with a coarser grit and work your way up to 1,500-grit paper, using plenty of clean water.

Approximating the edge finish is one part of achieving a successful cut; another is getting the installation right. Since most cuts are located on the perimeter of an installation, they normally border movement joints, which are made with backer rod and sealant. To make sure the backer rod isn't visible through the translucent glass tile, I coat the adjacent cut edges with thinset mortar. If you do chip the color coating that's applied to the backs of some glass tiles, the best way to repair it is with paint or epoxy provided by the tile manufacturer. You can sometimes get a good color match with automobile touch-up paints. But whatever you do, don't use nail polish, because it can react with cementitious materials like thinset mortar and grout and spoil the edge treatment.

Q. Modifying Roof Trusses

My client wants to add a 16-inch-wide 4-inch-deep tray ceiling in a room where the drywall ceiling is attached to the bottom chord of roof trusses. To do this, I'd have to cut out and raise the bottom chords of the trusses. Is that possible?

A. *Christopher DeBlois, a structural engineer with Palmer Engineering in Tucker, Ga., responds:* Why not add a shallow soffit around the perimeter of the room to create the same effect? If there's enough ceiling height, the loss of 4 to 6 inches of headroom around the edge may not be objectionable, and this approach has no structural implications for the trusses.

If that solution is not acceptable, it might be possible to cut out the bottom chord of the truss and add collar ties. But unless you know how to design trusses, you'll need an engineer to help you. There are a few key issues.

The first problem is that the bottom chord of most gable trusses bears on the wall, with the top chord meeting the top edge of the bottom chord just above the bearing point on the wall. If you cut away the bottom chord, this joint will become unstable; you'll need to reinforce it, most likely with a plywood gusset plate. The engineer's design will specify material thickness, overlaps, and nailing.

Second, the truss top chord — often no bigger than a 2x4 or 2x6 — may not be strong or stiff enough to extend down

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from the new tray-ceiling collar tie to the top of the wall without being beefed up. Also, attaching the collar tie may require more nails than the top chord can handle without splitting, so you may have to add a plywood nailing plate or some other upgrade. An engineer can work out these details and provide a workable design.

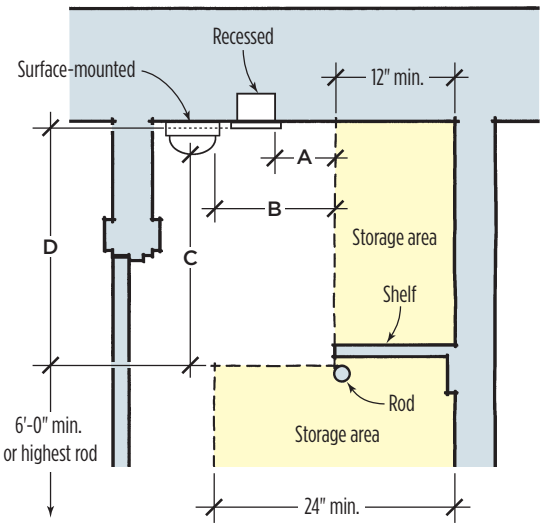
Q. Are LEDs Okay in Closets?

A client wants to install LED light fixtures in his closets, but my local code inspector is hesitant to approve them. It seems to me that an LED fixture poses no more of a fire risk than a fluorescent light. What does the code say?

A. *George Flach, former chief electrical inspector for New Orleans, responds:* The risk of a closet fire is considerable. According to some estimates I've seen, up to 12 percent of all house fires begin in a closet. Recognizing that risk, the NEC prohibits the use of exposed, bare, or uncovered incandescent lamps in clothes closets. It does permit the use of listed surface-mounted or recessed fixtures, but imposes strict requirements on their placement (see illustration). Previous editions of the NEC recognized only fluorescent and incandescent fixtures, but the latest edition includes LEDs as well.

According to Article 410.16 of the 2008 NEC, recessed and surface-mounted fluorescent fixtures and recessed incandescent and LED fixtures with a completely enclosed light source can be placed within 6 inches of the clothes storage area. Surface-mounted (not pendant) incandescent and LED fixtures must be enclosed and placed a minimum of 12 inches away from the storage area.

Closet Lighting Rules



The most recent (2008) edition of the NEC permits an LED lighting fixture to be located on a closet ceiling or on the wall above the door, subject to the minimum clearances indicated in the drawing. Horizontal and vertical dimensions are taken from the fixture's lamp or lamp cover to any part of the storage area as defined in the NEC.

Minimum Clearances Between Fixtures and Storage Area				
	A	B	C	D
Incandescent	6″	12″	12″	6″
Fluorescent	6″	6″	6″	6″
LED	6″	12″	12″	6″