Tips and Techniques From JLC-LIVE!


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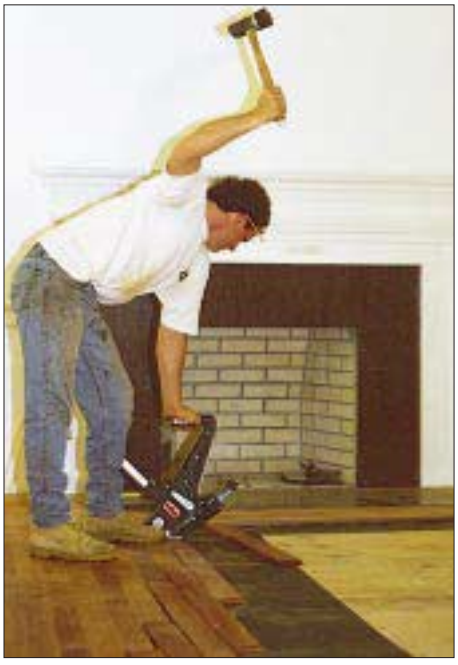
Job-Site Tips

Perfect Hardwood Floors

Cracking and cupping are common problems with hardwood floors. The main culprit is moisture, according to Howard Brickman, a flooring contractor from Norwell, Mass., and former director of training for the National Oak Flooring Manufacturers Association. He recommends that contractors install flooring at about 7.5% moisture content, the midpoint between seasonal high and low moisture content for most of the country. If moisture content is too high, unwrap the bundles to let the wood dry out. "Be careful of the weather," Brickman cautioned. "Most flooring is shipped at between 6% and 8% moisture content and will probably take on moisture if it's stored too long during humid months."


A layer of 15-lb. felt paper keeps moisture in the subfloor from migrating to hardwood flooring. The felt also prevents the floor from squeaking when the wood moves.

Brickman also insists on a dry subfloor — about 11% moisture content. "Only heat and ventilation will dry out the subfloor. Most ordinary dehumidifiers don't have enough capacity." So turn up the heat — even in the summer — and use fans to circulate air, if necessary.

To retard moisture intrusion from the bottom side, use a layer of 15-lb. felt paper under the flooring. "Red resin paper won't work," said Brickman. "It makes the flooring slide more easily into place, but it won't stop moisture." The felt also eliminates squeaks, because the slight compression of the felt during fastening keeps tension on the fasteners when the wood moves.

Finally, use plenty of fasteners. "I've never seen a floor with too many nails in it," said Brickman. His rules of thumb: Strip flooring requires nails every 6 to 8 inches; plank flooring wider than 4 inches should be screwed through the face on the grooved side as well as nailed through the tongue. Screw into the joists, not just into the subfloor, and keep screws 2 inches from the edges. Never glue boards together: Individually fastened boards shrink separately, but a glued panel will shrink all in one place, leaving a larger gap in one area.

Practical Ceiling Details

Heat loss from a small section of cathedral ceiling doesn't worry Paul Bourke, who owns Bourke Building in Leverett, Mass. "But if it's a huge expanse of cathedral ceiling, then I'm going to get a lot of heat loss unless I up the R-value," Bourke notes. Bourke aims for up to R-50 in the roof. The trick is to get enough insulation between the rafters and still leave room for the code-required vent channel. One technique Bourke uses is to put an inch or two of foam sheathing on the underside of the rafters, sealing the joints with tape. For long spans, he sometimes frames the roof with engineered I-joists. The 14- or 16-inch depth leaves enough space for plenty of insulation.


One way to raise the R-value of vented cathedral ceilings is to add a 1-inch layer of rigid foam to the interior side of the rafters.

The most cost-effective method, Bourke said, is to increase the depth of a solid wood rafter with 2x4s and plywood gussets to make room for extra insulation. "You can make it as deep as you want," says Bourke. A poly air barrier/vapor retarder completes the detail.

More than 800 builders and remodelers from across the country braved last February's weather to attend JLC's first Construction Business & Technology Conference in Cambridge, Mass. The attendees heard some 50 JLC contributors share a wealth of hands-on information on a wide range of topics. What follows is a sampling from a few of the talks. Next year's conference and trade show will be held on February 16 to 18 in a much larger facility in Marlborough, Mass. We hope to see you there.

Engineered Lumber

The declining quality of sawn lumber has prompted Boston-area design-builder Andrew DiGiammo's interest in alternatives. "If you culled through the lifts you're getting today," said DiGiammo, "you could send half of it back. It's time to look for another product."

No matter what the structural spec in wood-frame construction, DiGiammo has found an engineered product to match it. In fact, some designs are practical only with the use of engineered members. In a recent project, for instance, DiGiammo used pressure-treated Parallams as columns for a three-story deck with a hot tub on the top level. Solid wood timbers might have carried the load, he pointed out, but their natural twists, bends, and checks would have created major hassles. By contrast, engineered lumber is as predictable as steel, and often carries an engineer's stamp for the benefit of building inspectors.

Engineered lumber like these glulam beams can handle long spans and heavy loads, but they also increase stress at bearing points and connections.

One caution: In long spans, engineered wood can introduce heavier loads at bearing points, overstressing conventional fasteners and framing. DiGiammo has found, however, that manufacturers are ready and willing to provide him with product specs and design details for nearly any connection. But builders must understand and accurately communicate load paths to the manufacturer's technical rep. If you don't have the knowledge to do that, you may need to hire an engineer.

Concrete Rules of Thumb

Most builders don't pay much attention to the concrete delivery ticket, but they should. One number to look for on the receipt, according to Tim Fisher, Field Editor for *Concrete Construction* magazine, is the water/cement ratio. Under normal conditions, residential concrete should have a water/cement ratio of about .5 (pounds of water divided by pounds of cement).

Another factor to watch for is how much water the driver adds to the load before sending the concrete down the chute. Every gallon of water added to a yard of concrete increases its shrinkage potential by 10%.

Cracks are inevitable, said Fisher, but there are ways to reduce the number of cracks and to determine where they will occur. Most cracks are caused by shrinkage — concrete shrinks at a rate of about 1/16 inch per 10 feet. Using larger aggregate and less sand in the mix will reduce shrinkage. So will slow curing, which increases concrete strength as well.

Control joints will cause the slab to crack in predictable ways and give a clean appearance. To create control joints while the concrete is still wet, use a specialty trowel, or embed premolded plastic strips. You can also cut joints in cured concrete using a concrete wet saw. (On green concrete, an abrasive blade and a circular saw will also work, but the joint will require several passes.). Joints should be one-fourth the depth of the slab, and spaced according to a formula related to slab thickness: Multiply slab thickness by 2 and 3 to get the range of spacing in feet. On a 4-inch slab, for example, joints should be spaced 8 to 12 feet apart.

Concrete tends to crack into squares. To avoid this on a rectangular slab, place control joints so that the long side is no more than 1 1/2 times the length of the short side. If you can't avoid inside corners and sharp angles (60 degrees or less), which always crack, be sure to isolate them with control joints.

Use a concrete saw to cut central joints in cured concrete. Space the joints to divide the slab into 8- to 12-foot squares.

We Have Met the Enemy

Many builders think their competition is fly-by-night companies. But Les Cunningham, keynote speaker at the show, disagrees. "Your biggest competition is between your ears." Builders who have no trouble figuring out how to do the work often don't know what the real costs are. So it's easy to give work away. "Your charm, good looks, and low bid will get you the job every time," said Cunningham. "The enemy is you, not the competition."

According to Cunningham, a former remodeler who now counsels more than 100 companies in his Business Networks workshops, the most dangerous salesperson in a construction company is an owner who will do anything to make a sale. It's easy for them to take a job at too low a price by rationalizing personal adjustments — like not taking as much pay or putting in extra hours.

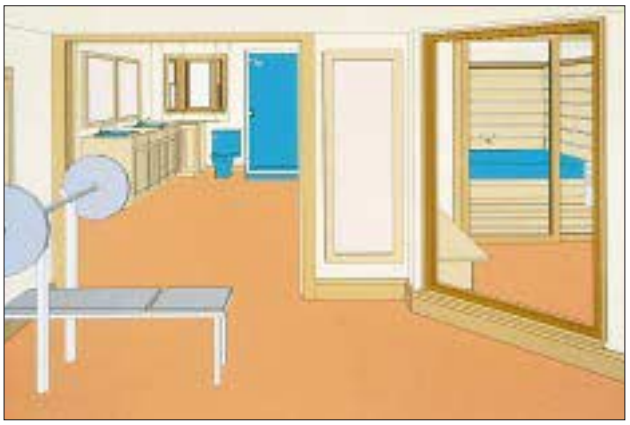
The problem, according to Cunningham, is that many company owners are not detail people. They agree to build a stair without nailing down the specs, then wonder why they can't get paid when the finished stair doesn't match the client's expectations. Cunningham's advice: Keep your ego out of the business. "If you can't sign a contract for the price you need to get," he cautioned, "walk away. The ego bang you get from making the sale won't put bread on the table."

Low-Cost Marketing

Your best source of job leads is your satisfied customers. That was the message from Lee McGinley and Robert Criner, two remodelers who use the same successful marketing approach in two very different markets. "The existing clientele and referrals are the market you're trying to capture," said Criner. "Spend three-quarters of your effort on trying to hang on to old customers. They're already sold."

Criner's remodeling company completes about $600,000 worth of work a year in a densely populated part of coastal Virginia. McGinley does about half as much business, working in a small Maine town whose residents are mostly summer people. Both contractors use computerized databases to generate letters to former customers, and both schedule time into their day to send birthday and holiday greetings, and to make follow-up phone calls.

Former clients and their friends, relatives, and neighbors tend to be serious buyers who already know what quality and price range to expect. McGinley signs contracts with about 85% of the customers referred to him, a rate that provides steady work in spite of his small market. Criner's closing rate is closer to 25%, because he charges a high markup and chooses clients carefully.



A 3-D CAD program is a good sales tool with clients who have trouble reading blueprints.

McGinley and Criner also advise taking steps to cultivate a professional image:

- Develop a strong company portfolio, or "job book," with attractive photos of finished jobs, letters of recommendation, and any awards or recognition your company has received.
- Make friends with local newspaper editors. It's surprisingly easy to get your name in the paper.
- Build a professional image by attending home shows and speaking to local groups and clubs.
- Charge what you're worth and deliver more than what's expected.

Computers as Sales Tools

Many builders are curious about CAD software but unsure how to put it to good use. One place to start, according to Craig Savage, a longtime building contractor and *JLC* columnist, is with a simple object-oriented CAD package like Chief Architect. Instead of drawing lines like many CAD programs, object-oriented software draws components. For example, both sides of a wall can be drawn at the same time at a preselected thickness. Making changes to object-oriented drawings is also easier. You can use the mouse to stretch or shrink a window width, for example, without having to redraw all of the window lines.

Also look for CAD programs that can transform a floor plan into a 3-D perspective. "Most of your clients can't read blueprints anyway," said Savage. "Floor plans are an artificial representation of the building that's only useful to you, the builder." A three-dimensional drawing gives clients a better idea of what the final product will look like.

Keep Your Clients Busy

Alaska design-builder Clai Porter explained his trick for keeping his clients involved in the sometimes drawn-out design process. When he presents his rough design sketches to his clients, Porter also brings along what he calls "selection sheets." These are lists of materials and products that need to be chosen by the owners, including trim, cabinets, flooring, and paint colors. "I also establish a deadline for when these decisions need to be made," Porter explained. "All of this helps to push the design process along."

Porter keeps samples of carpet, tile, plastic laminate, and other materials in his office, and always accompanies his clients when they go shopping for product selections. "It lets me keep control of my budget. I don't want some supply-house salesman selling my clients something they can't afford." Going along for the ride also helps Porter stay on top of his schedule: Some items selected by his clients require special ordering and long lead times. ■