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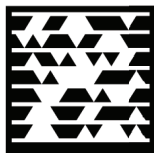
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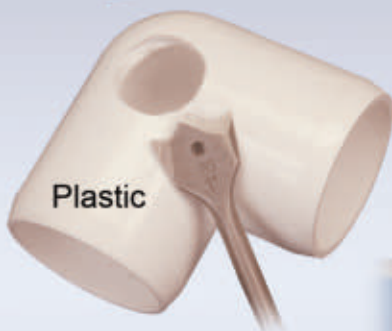
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Drive with Speed, Quality and Confidence

I'm writing this right after celebrating my second son's first birthday. That means there's been a whopping 365 days since Miller Matthew Weber (page 53) came into my life, which seems impossible because I could swear that only a couple months ago my wife Shanna and I were driving him home from the hospital. Once again I've fallen victim to this strange time-warp called adulthood.

It's during times like these I get reflective and philosophical about my family, my role as a parent, and what "home improvement" really means beyond remodeling and repairs. Like many of you, Shanna and I both juggle full-time jobs while attending to the countless responsibilities that come with raising kids. That means during the week we stay fairly stressed, remain forever behind in household chores, rarely have a moment to relax, and never find enough hours in a day. If you've led a similar household, then you know the drill.

This busy lifestyle keeps us hopping so fast that we don't often have time to stop and "smell the roses," as the saying goes. And for me, the "roses" at this stage of my life are the fun times we spend together with the kids, when we slow down to engage with them, to appreciate who they are at this stage of their young lives, and to help shape who they will become in later years.

Don't get me wrong; we are not absentee parents. We spend gobs of time with both our sons, but I'm not sure how much could be considered "quality" time. Many of those hours happen during the morning rush, time spent stuck in traffic, dragging the boys around town while we run errands, during the head-spinning ordeal of trying to prepare dinner each night, and finally during bath and bedtime. The next morning it's time to repeat the whole rigmarole all over again. And the haze of that fast-paced lifestyle can result in the world around me passing in a blur.

I don't want the years spent raising my kids to pass me in a blur. I want to experience those moments to the fullest because I'll never get them back. So, although I've made a number of upgrades and improvements to the structure of my home the past year, I plan to spend the following year improving the relationships inside the home, where it counts most.

I'm not sure exactly where I'll find this magical extra time, and likely I'll have to make some sacrifices to make it work. But, on Miller's second birthday, if I look back at the year and find that those sacrifices allowed me to spend not just more time with my family—but more *quality* time with them—then I don't think I'll regret making those choices.



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Q: I've heard of a Japanese method of preserving outdoor wood that involves charring the surface. How is this done?

A: "Shou Sugi Ban" is a traditional Japanese method of preserving Japanese cedar siding by charring it. These days, architects and designers use other species of wood like western red cedar, Douglas fir, cypress, pine and oak for such applications. The process involves charring the wood surface with exposed flame from a propane torch, then cooling it, cleaning it with a wire brush, rinsing, and then finishing it with natural oil. Although time consuming, the final product has a rich, silvery finish, and the charred wood resists fire, rot, insects, and can last up to 80 years. This technique can be used for siding, outdoor benches, and all sorts of creative applications.

Q: I want to install a new faucet that has a hidden hose for the spout to double as a spray nozzle. My old two-handle faucet has both the primary spout and a separate hose nozzle. Will I have to leave that old spray nozzle in place if I swap faucets?

A: No, you can usually replace your three-hole setup with a two-hole faucet and use a "deck plate" to conceal the hole of the old spray nozzle. (In some cases you can even install a soap dispenser in the third hole.) When purchasing the new sink, be sure to check the contents of the package to make sure such a deck plate is included. If it's not, you might need to order the deck plate separately from the faucet.

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Q: What is the best way to prevent knots from leading to rot in a wood deck surface?

A: We recommend sealing knots with stainable, shrink-resistant, exterior-grade wood filler prior to application of a preservative stain/sealer. To minimize the mess, mask off the area with painter's tape and

apply only enough product to fill the hole. Filling the hole will reduce the likelihood of water accumulating in those low areas of the deck surface, where it could otherwise work down into the wood grain and contribute to rot. Although many wood fillers are marketed as "stainable," the degree to which the product will readily accept the stain's intended color tone will vary. The easiest approach is to select pre-colored wood filler that closely matches the tone of stain/sealer you intend to apply to the decking.

Q: What is domino joinery in woodworking?

A: Similar in application to biscuit joinery, Festool's Domino Joiner tool cuts mortises into the edges of wood boards or panels so they can be joined along those edges using tenons to bridge the pieces. Whereas biscuit joinery uses oval hardwood biscuits as the tenons, the newer Festool system utilizes angular domino-shaped tenons, which have a large gluing surface area for extra strength and they're 100-percent rotation-proof and far stronger than either biscuits or dowels. **EHT**

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Remodeling Show/Deck Expo Preview



By Matt Weber

Three Events. Two Days. One Location. That's what to expect at R|D|J—the combined convention of the Remodeling Show, DeckExpo, and JLC Live. To be held October 6-7 at the Baltimore Convention Center, the R|D|J trade show provides industry professionals with a vibrant exhibit hall with hundreds of the industry's top manufacturers, hands-on training, networking events, and a trove of construction products that steer trends in the remodeling industry. Expand your professional contact base as well as relax and kick-back with new and old friends. Here's a preview of the show.

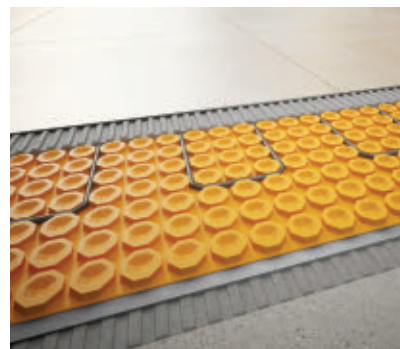
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no more guesswork. Plus, the company offers a full line of screws for a variety of construction applications. Visit booth 4701 or www.muro.com.

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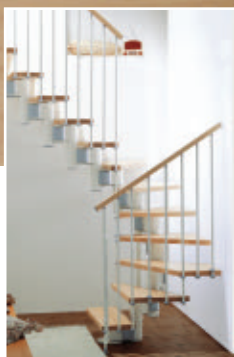


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construction as well as for retrofitting in existing showers (and is able to support 400 lbs.). The Goof Proof Corner Shelf is also a ready-to-tile corner shelf that attaches to existing tiled walls and can be tiled before or after installation. It will support 100 lbs. All Mark E. Industries products come with thorough easy-to-follow instructions, and the website has instructional videos. Visit www.markeindustries.com or booth 2311.

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measuring 3-1/4 to 5 in. and provides a 3/16-in. gap. CAMO Edge Fastening guides work specifically with CAMO Driver Bits and CAMO Edge Deck Screws. Visit booth 3701 or www.camofasteners.com. **EHT**

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Air Upgrade

Installing a Window AC in the Wall



By Larry Walton, photos by Mark Walton

We don't get much heat or humidity where we live but when we do, temperatures can get over 100 degrees, which makes having air conditioning a pretty good idea. Getting through those few weeks of hot weather can often be accomplished with a window air conditioner or two.

Being from a region where AC is not often needed, I've used lots of window air conditioners, but not often in the way they were designed. This is primarily because these units can interfere with emergency egress. Building codes rightly require that bedrooms provide an alternative

escape route in case the door into the room cannot be used, and this alternative escape is often through the window. Expecting children and others with physical limitations to handle an air conditioner before they can get out of the room can be disastrous.

Some of our relatives use free-standing portable air conditioners, but these also have their drawbacks. They take up room and still need to be exhausted outside, causing window access challenges as well.

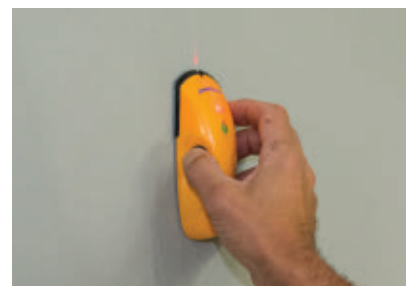
Installing a window air conditioner in its own glass-less window opening is a good way to handle several issues raised by window

units while taking advantage of their low costs and compact size.

I usually install these units high on the wall so other furniture can be used below, and so the exterior portion can be better protected by the overhang of the eaves. This is important because I leave the units in place year round. We find a few more occasions to use them throughout the year for unseasonal hot days and even to provide a little white noise when ambient noise in the house or in the neighborhood gets a little out of spec.

Here's how I made a window opening in a bedroom to be used exclusively for an air conditioner.

STEP BY STEP



Use a stud finder to locate two adjacent stud bays that will provide enough room for the opening.



Build a jamb box of 1x6 pre-primed pine about 4 inches wider and 4 inches taller than the air conditioner required. This allows

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for a replacement unit, which might be larger. It also provides plenty of air circulation around the appliance, which can get a bit tucked in depending on the thickness of the wall.

Use a Speed Square and a torpedo level to make sure the jamb box is both level and square while marking the outside perimeter of the box on the wall.



Use a multi-tool to cut the drywall just outside of the pencil line. I wanted a tight fit to avoid using trim on the inside, but you can plan to use trim if you want. Note the shop vac hose in my left hand to grab most of the drywall dust.



Remove the drywall to reveal insulation and the edge of a stud.



Use a utility knife to cut the roll insulation at the top and the bottom of the drywall opening.

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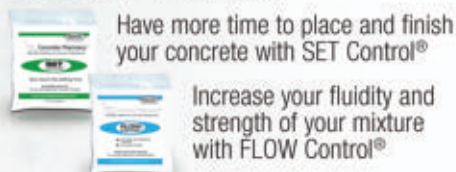
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With the insulation removed, mark the opening corners by drilling through the exterior sheeting with a long drill bit.

Use a torpedo level and framing square to lay out the opening on the exterior as indicated by the four corner holes drilled from the inside.

The jamb box can serve as a guide to make sure the layout lines give plenty of room. (I did plan to use trim on the exterior.)



Before cutting the siding, drill holes large enough for a reciprocating saw blade next to the stud and cut it from the interior.



I used a jigsaw to cut the siding from outside.



The section of stud came out with the piece of sheet siding.



I positioned 2x4 blocks level with the top of the cut-off stud and nailed them into the studs on both sides of the opening for added support.

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Make sure the jamb box is flush with the exterior sheeting then nail it into place. Paying attention to this step makes it easy to fit exterior casing.



I also used a straight edge and shims to make sure the jamb box maintained straight lines as it was installed.



Nail through the box and shims and into the framing while making sure the box is flush to the exterior.



A hammer claw helped pry this corner out to flush as it was being nailed.



The multi-tool worked great to cut off this thick shim.

Cut out a piece of plywood first to the size of the opening and then cut it to fit around the window air conditioner.

I used a combo square as a gauge to mark the location for the interior stops, which would hold the plywood that fills the gap between the appliance and the jamb box.



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Cut and install the first set of 3/4-by- 3/4-in. stops across the top and down the sides.

With the first set of stops in place, I put the plywood insert against the stops and nailed it into place before installing a second set of stops on the outside.

I then cut and installed exterior casing to match a nearby window.



Test-fit the air conditioner before applying caulk and paint.

Caulk all of the joints to seal against weather and insects.

With the trim painted to match the house trim on the exterior, the air conditioner looks much more planned than it does when sticking out of a window. This

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leaves windows available for fresh air and emergency egress.

I painted the interior surfaces to match the black trim in the bedroom. Black duct tape and

black foam strips included in the A/C install kit sealed the small openings around the unit. The trim-less design of the jamb box minimizes the overall impact of the area. **EHT**

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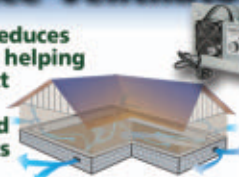
Room-to-Room

Level-to-Level



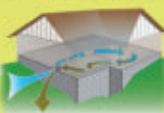
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INSTALL A HEATED WOOD FLOOR

By Rob Robillard

Installing an electric floor heating system under a hardwood floor is a great way to add warmth and comfort to any room. It's also a fairly simple process because there are no vents, ducts, pipes or radiators involved.

I like using electric radiant heat because, simply put, it heats really well. A radiant heat system heats the entire room from the floor up, resulting in heat that is consistent throughout the room. The heat produced by the system also reduces humidity and draftiness, which results in fewer dust mites and allergens in the air.

ELECTRIC RADIANT HEAT SOLVES REMODELING PROBLEMS

On one recent remodel, I was updating an unheated four-season porch with three exterior walls, a roof above, and a crawlspace beneath. The client had their HVAC contractor try to access the porch for heat, but all they were able to do was split an existing heating duct to get some heat into the porch. Unfortunately this was not enough, and the porch was still cold. They turned to me for help.

We chose to use the Warmup Inc. "Loose Wire Heating System" (NADWS) paired with the company's new programmable 4iE thermostat. Using the Warmup system, we were able to offer our clients the ability to continue their hardwood flooring into the adjacent porch, and add heating comfort. The result was a luxurious warm floor, and the benefit of a maintenance-free heating system completely hidden under the hardwoods.

INSTALL A HEATED WOOD FLOOR



After addressing moisture issues in the crawlspace beneath the floor, the next order of business was to prep the subfloor. To raise the height of the new finished floor to match an adjacent room, we installed a layer 1/2" CDX plywood followed by 1/4" sleepers.



The layout plan provided by the heat-system manufacturer will help guide placement of the sleepers.

MOISTURE AND TEMPERATURE: COMMON MISCONCEPTIONS

Radiant heat, whether water-based or electric, does not affect wood floors. Only moisture can negatively impact wood and cause it to contract, resulting in floor cracks. Temperature has little impact on wood floors; it is therefore completely safe to use radiant heat with wood.

It is common to confuse the effects of moisture and temperature on wood. Temperature only has an impact at very high levels, while even moderate amounts of moisture can hurt a wood floor.

CONTROLLING CRAWLSPACE MOISTURE ISSUES

Because the porch was built over a dirt floor and adding a concrete subfloor was not in the budget, we knew we would have to control for moisture. So the first thing we did was close the crawlspace vents and apply closed-cell spray to the underside of the floor system.

Many crawlspace floor joists are insulated with fiberglass batt

insulation, which tends to absorb moisture and also can fall out if not properly installed. Insulating the perimeter walls is one way to avoid this. Another option is our method filling the entire floor joist bay and encapsulating the floor joist system (sills, rim joists and joists) with closed-cell, spray foam insulation.

The next step was to cover the floor with a crawlspace liner and open the crawlspace to the basement, which is HVAC conditioned. The goal was to build a sealed, conditioned crawlspace that would avoid condensation during humid seasonal conditions. Once we were satisfied that

we'd addressed those moisture issues, we added the electric radiant heat system.

Note: With a non-insulated crawlspace under the plywood, you should use insulation boards prior to installing the heating coils.

USING ELECTRIC RADIANT HEAT UNDER WOOD FLOORS

In our four-season porch, we decided to install 3/4-in. oak hardwood flooring to match the rest of the house flooring, but we had some floor height issues to deal with first. The porch floor was 1-1/2 inches lower than the



We decided to use 1/4" plywood ripped to 3" strips for the sleepers.

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INSTALL A HEATED WOOD FLOOR

finished hardwood floor height of the main house. We wanted the new heated hardwood floor to be seamless, and the same height as the main house.

MATCHING FLOOR HEIGHTS

In order to get our new porch floor the same height as the existing house floor, we had to add plywood to the porch floor. We screwed down a layer of 1/2-in. CDX plywood to raise the floor and then installed 1/4-in. plywood nailer strips (called “sleepers”) along the perimeter of the room and at 16-in. intervals to get to a total 3/4-in. height. The radiant heating cable measures 1/8 in. so we decided to use 1/4-in. plywood ripped to 3 inches for the sleepers.



Plan the installation as you would any standard flooring job by snapping lines to guide board placement and accounting for out-of-square walls.

The sleeper strips create lanes into which the heating cable will be placed.



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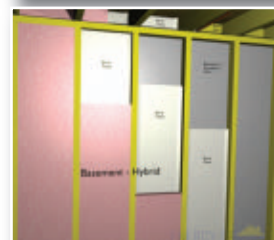
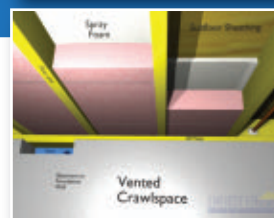


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Apply construction adhesive to the bottoms of the sleepers.

Nail the sleepers throughout their length, using two nails at each end.



Sleeper strips create lanes into which the heating cable will be placed and should be installed perpendicular to the hardwood flooring to be fastened into the sleeper.

Using 3-in. wide sleepers allowed us to space out sleepers to the standard 16-in. on-center spacing. This spacing creates a 10-in. wide space to run three loops of radiant cable spaced 3 inches apart.

BEST PRACTICES: INSTALLING THE WARMUP RADIANT HEAT CABLES

Several flooring manufacturers have tested their products specifically with Warmup products and certified their warranties on combined installations. This list includes Amorim, Wicanders, and Higuera Hardwoods, among others.

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INSTALL A HEATED WOOD FLOOR

Installation Tips:

- Use 1/4-in. or 3/8-in. sleepers so that filling the voids with leveler will give you an effective heat bank, yet only minimally raise floors.

- Using the standard 10-in. spacing for 3-in. wide sleeper runs, we spaced three runs of cable (spaced at 2", 5" and 8") in each sleeper gap.

Note: Depending on your specific conditions, you may need to adjust sleeper spacing to accommodate the support of the wood floor.

- For installations over concrete and/or requiring insulation, a variant of the sleeper method is to use 2x3's or 2x4's partly



The sleepers were spaced 16" on-center, which creates a 10" wide space between them to run three loops of radiant cable spaced 3" apart.

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embedded in the slab pour. This allows for insulation to be included and more thermal mass to be poured between the sleepers. Warmup's regular NADWS floor heating or WODH slab heating cables can be used in these applications.

ENCAPSULATING THE RADIANT HEAT WIRES

Once the cables are in, pour concrete between the sleepers. This creates a thin radiant slab that encases the cables. In all cases, a layer of insulation is normally placed below the existing subfloor to ensure that most of the heat is directed upward.

I used latex-modified thinset (LMT), which is a blend of cement, very finely graded sand, and a water-retention compound that allows the cement to properly hydrate. LMT is cheaper than a self-leveling pour, which is frankly not needed in this situation.



The Warmup kit includes all components needed for its Loose Cable Underfloor Heating.

First step is installation of Warmup's fixing strips.



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CHOOSING WOOD FLOORING: RIFT AND QUARTERED SAWN OAK

Extensive laboratory testing by Launstein Hardwood Floors in Mason, Mich., found that American hardwoods—including cherry, oak, ash, maple, hickory and walnut—are good choices for radiant-heat flooring. Beech, Australian cypress, and many bamboo products are examples of those that are not.

We wanted to purchase and install a material that would not only match the existing oak strip flooring, but be dimensionally more stable with the added floor heat. It's natural for all floors to shrink and swell, depending on the season, so we chose rift and quartered oak which is touted as approximately 30 percent more stable than plainsawn oak flooring.



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Lace the heating cable on the fixing strip.



Run the heating cable back and forth in parallel to the wood sleepers until all the sections are filled.

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Since 2005, SnapStone porcelain tile floors have been cutting installation time in half, thanks to its innovative interlocking tray system. Developed in Omaha, Nebraska, this patented floating tile floor system features a real



porcelain tile permanently bonded to a polymer tray that “snaps” together with the tile tray next to it, eliminating the need for messy mortar, thinset and spacers. The SnapStone installation process is as easy as Prep, Snap, Grout. After ensuring the subfloor is flat, clean and dry, SnapStone can be installed and grouted within a day. A SnapStone floor installation requires only two things: a SnapStone tile and SnapStone’s flexible urethane grout. Perfect for the both the first time DIY’er and seasoned tile contractors alike, a SnapStone floor is suitable for most rooms in the home. Matching raw tile, bullnose and nine grout colors finish off the floor and room as well. The SnapStone system can be installed over most existing subfloors, such as vinyl, hardwood, laminate or cement. It can also be

laid over plywood in a new construction. With three tile collections and nearly 50 colors, you’re sure to find a beautiful floor for your home. Visit www.snapstone.com.

Rift and quartered boards rival engineered flooring. These boards will only expand or shrink in thickness (height) and will remain stable from side-to-side (width). They are perhaps the best option for hardwood radiant heated floors, and also an excellent choice to minimize seasonal gaps, buckling, and so on.

Tips for Choosing Wood Flooring:

1. For best results, use narrow boards, preferably not wider than 3 inches. Narrow boards will better accommodate wood’s natural expansion and contraction across a floor.

2. Use quarter-sawn wood for planks wider than 3 inches, for better dimensional stability.

3. Acclimate your wood floor: Wood naturally expands and contracts to reach balance with the relative humidity of its surroundings. Avoid installing wood flooring when moisture levels are high, such as during painting or the installation of plaster.

4. Before hardwood floor installation, operate the heating system until the relative temperature and humidity in the space stabilizes to the average level expected for seasonal conditions in the area in which the wood floor will be installed.

5. Ensure your flooring’s moisture content is appropriate for your area. Typically, a 6- to 8-percent moisture content is average.

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INSTALL A HEATED WOOD FLOOR

6. Engineered floors are inherently more stable.

7. Reclaimed woods typically have tighter growth rings (since the wood is more likely to be old-

growth) making them denser and more stable.

8. Parquet: Overall, parquet floors have less expansion and contraction.

9. Dark floors: Their color makes gaps between boards less obvious.

10. Flooring with beveled edges make any gaps less obvious.

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Place the temperature sensor probe evenly between two runs of heating cables at least 12" from the wall into the heated area.

WOOD FLOOR INSTALLATION

First, deliver the flooring about 1.5 weeks early to let it acclimate to the conditions in the house.

Install the boards the same as you would without radiant heat; all the precautions recommended for strip flooring apply. When installing over radiant heating cables, you need to slow down and be precise in placing the fasteners. We nailed the sleepers along the length of the strips and used a minimum of two fasteners at each end.

TIPS FOR INSTALLING WARMUP LOOSE WIRE HEATING SYSTEM

Step 1: Determine the heated area.

Measure the room that will be receiving radiant heat.

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INSTALL A HEATED WOOD FLOOR

Make a sketch or drawing and send it to Warmup for a quote. Determine your thermostat location and note it on your sketch.

Step 2: Locate the thermostat.

Warmup electric radiant heat mat systems are designed to be used with a UL Certified programmable thermostat. Locate your

thermostat approximately 5 feet off floor and always on an inside wall. Try to avoid placing it near heat sources, excessive sunlight from windows, or skylights.

The Warmup proprietary 3iE and 4iE thermostats include the safety of upper-limit temperature monitoring. This means that when selecting “wood floors” in the programming, the heat settings will never rise past 82F and ensure smooth and gradual heating of the floors.

Step 3: Run a 20-amp, GFCI protected circuit.

Run a dedicated 20-amp GFCI circuit to your thermostat location. Prior to closing up any walls, I install a wire pull string from the thermostat box, down the wall cavity, and through a notched section of the 2x4 wall shoe plate. After the wallboard is installed the string will be used to pull the cold



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We used latex-modified thinset (LMT) to encapsulate the heating wires.



Spread and level the thinset to the top of the sleepers.





When the leveling compound has cured, install the hardwood flooring according to standard procedures.



We chose rift and quartered boards for the flooring. They're a good option for hardwood radiant heated floors and they also minimize seasonal gaps, buckling, and so on.

lead and floor sensor wire up the wall to the thermostat location.

Step 4: Install wood sleepers.

Using wood strips 1/4- to 3/4-in. thick and 2 inches wide, install strips at 12- to 16-in. intervals when using the Warmup system. Leave a 2-in. gap at alternate ends of the strips for heating wires to cross from one section to the next.

Step 5: Install the fixing strips.

Use hot glue, nails or screws to secure the strips to the floor with a minimum 3-in. distance from the walls and permanent fixtures.

Step 6: Install the heating system.

Starting at the closest point on the floor to the thermostat, tape the joint to the subfloor.

Lace the heating cable on the fixing strip and run it back and forth in parallel to the wood sleepers until all the sections are filled in.

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INSTALL A HEATED WOOD FLOOR

Step 7: Install the temperature sensor probe.

Place the probe wire containing the capped sensor evenly between two runs of heating cables at least 12 inches from the wall into the heated area. At no time should the probe wire cross the heating cable.

Step 8: Embed the heating system using leveling compound.

When the heating system is completely installed, apply a mixture of modified latex thinset compound over the entire heating system. Use a scrap board to spread and level the thinset to the top of the sleepers. Leveling compounds/thin-set/adhesive **MUST** contain latex compounds and capable of withstanding temperatures of up to 140°F (60°C) when used with underfloor electric heat systems.

Step 9: Install the hardwood flooring.

When the leveling compound has cured, install the hardwood flooring by attaching it to the wood sleepers only. Use caution not to damage the wires with your fasteners.



Step 10: Program the thermostat.

Program the thermostat to a maximum of 81°F (26.5°C) to avoid drying out the wood or causing warping. The thermostat must be regulated by a floor probe positioned between the heating

cables. Note the Warmup 4IE thermostat does this automatically when selecting Wood Floors in the menu. **EHT**

Editor's Note: Robert Robillard is principal of a carpentry and renovation business located in Concord, Massachusetts, and editor of the blog, *A Concord Carpenter*, www.AConcordCarpenter.com.

FASTSTONE+

The FastStone+ product line is real stone obtained from quarries around the world and split from real slate. Each piece results in different color hues, which means the raw surface of slate and the interchanging colors of



each stone layer are absolutely unique. FastStone+ consists of a thin layer of natural stone with a polyester resin with glass fiber (backing) and bonds with 3M PE foam tape peel and stick adhesive. FastStone+ tiles are easily installed using standard wood-working tools, and can be cut with hand shears, with no special stonemason skills required. It is truly the first "DIY" stone product available on the market today. The product is currently available in four colors and five tile sizes: 3"x6", 6"x6", 6"x9", 12"x12" and 12"x24" and are sized to fit together to create

unique patterns. FastStone+ offers unlimited possibilities for interior walls (flat or curved), backsplashes, feature walls, fireplace surrounds, partition walls, food service counters, furniture etc. Visit faststoneplus.com.

Attach the flooring to the wood sleepers only. Use caution not to damage the wires with your fasteners.

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*See Lifetime Limited Warranty for details.

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UPGRADE YOUR DECK

By Matt Weber

When it came time to replace some rotted deck boards on a recent project, we chose to use high-quality, Above-Ground treated lumber and a hidden-fastener system to achieve a smooth nail-free surface that's rot-resistant and friendly to bare feet. Here's how we took out the old boards and put in the new ones for a durable deck surface that will last for years.

PRESERVATIVE TREATMENT

The deck for this project was built with a floor of 2x treated lumber. For the replacement decking, we used Ecolife™ Stabilized Weather-Resistant Wood from Sunbelt Forest Products, which has an innovative wood-stabilizing preservative that protects the natural beauty of Above-Ground exterior wood from weathering, termite attack and decay. Ecolife's built-in water repellency is pressure-treated throughout the wood making the lumber more stable, with up to 50 percent less surface cracking and checking as compared to ordinary treated wood.

These important preservative features, combined with the routine maintenance of a quality stain/sealer, should eliminate the need to replace the deck boards again in the near future.

HIDDEN FASTENING SYSTEM

Another step toward board longevity—as well as good looks—is the use of a hidden fastener system. By avoiding holes driven into the top face of the boards, you avoid splits in the grain and creating all those points of entry for rain water, which could contribute to rot.

A fastener-free deck floor also appears more uniform and provides a smoother walking surface (or crawling surface, if you have young kids).

Quality treated wood and a hidden-fastener system give an old deck a facelift.





Miller Matthew Weber inspects the new deck surface made of Ecolife Stabilized Weather-Resistant Wood. The boards were attached to the joists with the Shadoe Track Hidden Fastening System. Both of these products will be exhibited at the Remodeling Show/Deck Expo. Check out Ecolife at the Viance booth #4612 and see Shadoe Track from Sure Drive USA at booth #2603.

UPGRADE YOUR DECK



Substantial wood rot required new deck boards for this deck.

A number of hidden-fastener systems are available for decking, but we chose the Shadoe Track System for this deck because it utilizes a hidden joist-mounted system, rather than fasteners placed between the deck boards (which can sometimes be noticeable). It's important to note, however, that to use this particular system the deck must be elevated far enough above the ground to access the joists and allow working room beneath the deck boards (shadoetrack.com).

OUT WITH THE OLD

For some folks, the prospect of demolishing a deck surface might sound like a grueling job. Not me. We've got a monster deck-demolishing pry bar called The Gutster

that forks between floor boards and leverages over the joists to pluck those nailed boards right off the framing with surprisingly little effort. This tool even has some nail-puller slots built into the head—and they actually work. I use it often and enthusiastically for demolition work. The Gutster comes in a few different sizes, but I'm six feet tall and prefer the long-handle model for floor-level jobs because it grants

tall users better back-saving leverage.

The resulting pile of waste might be an issue for some homeowners, and depending on the size of your deck it may require you to rent a dumpster. Luckily, we had a pickup truck to haul loads of old deck boards to the street curb, and we were working in a city that offered a weekly waste-disposal service. Once a week the city's crane-truck would patrol the streets to pick up downed tree limbs, discarded furniture or construction waste for transport to a landfill. Demolition cleanup doesn't get much more convenient than that!

INSPECT THE FRAMING

With the flooring removed, inspect the deck's structural framing. Make sure all connections are solid and there is no significant rot, that everything is stable, and



We removed the old decking with the Gutster demolition tool.

The Gutster bridges over joists to pry up the decking with its forked demolition head.

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UPGRADE YOUR DECK

that no joists have sagged. Address any unresolved issues before installing new deck boards.

Also, take the opportunity to address any construction issues the original builder may have overlooked. For example, this was a freestanding cantilevered deck, and the joists on one end ran “wild” over a beam and had no blocking between them. When blocking is fastened between the joist ends it prevents the joists from twisting. If the joists twist then the level decking surface will be compromised. So, with the deck boards out of the way, we decided to add blocking between joist ends before covering them again.

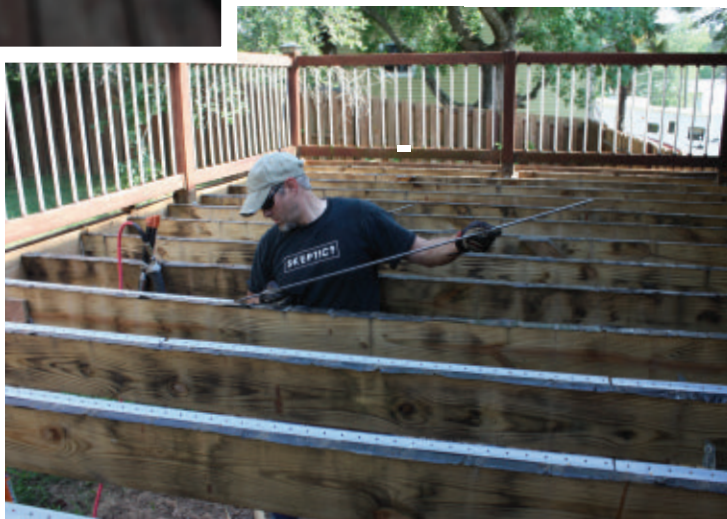
SHADOE TRACK FASTENER SYSTEM

To install the system, align the Shadoe Track galv/vinyl-coated sections along each joist so their center ridge rests flush against the wood and the trough is oriented downward like a “V”.



The galv/vinyl-coated Shadoe Track sections feature a trough with weep holes to allow easy drainage.

Line the tops of each joist with the tracks.



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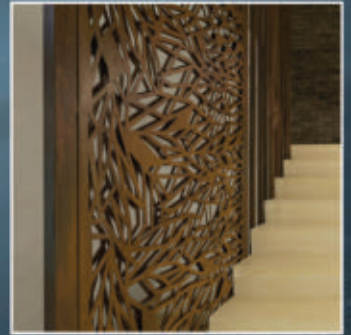
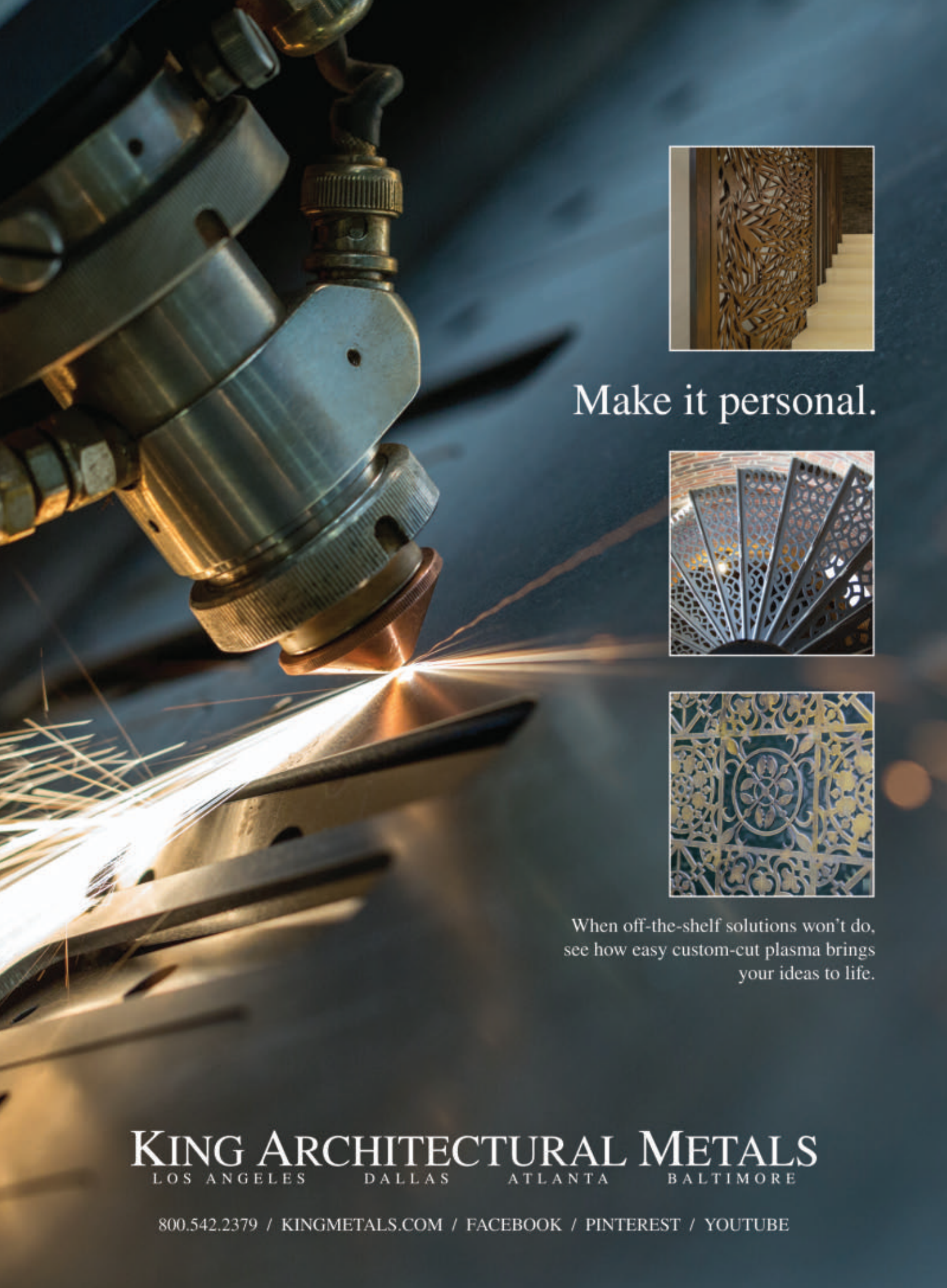
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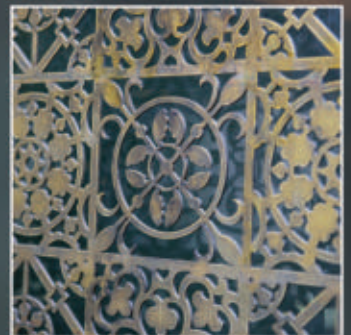
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UPGRADE YOUR DECK



Nail to the tops of the joists.

The manufacturer recommends using the 2" galvanized ring-shank nails included with the Shadoe Track kit.



The bottom of the trough features weep holes to allow drainage during rainy weather. Nail the Shadoe Track through the mounting holes and into the tops of the joists. The manufacturer recommends using the 2-in. galvanized ring-shank nails that are included in the kit. Continue installation to cover all lineal feet of the deck joists.

In some cases you may need to cut the metal tracks, and this can easily be done with a pair of tin snips.

DECK-BOARD INSTALLATION

As you would with any deck project, begin laying the boards at one corner and stagger the end joints between rows. Check the growth rings on the ends of the boards to determine the "bark side" of the

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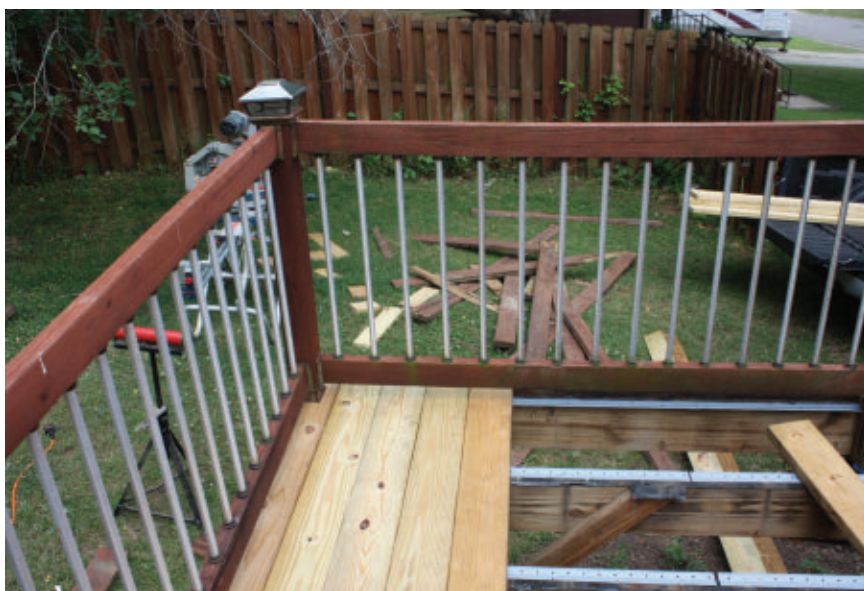
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The channels can be cut to size with metal snips.

Start at one corner and place the boards tightly together. Use high-quality treated lumber such as Ecolife Stabilized Weather-Resistant Wood.



board, and place that side facing upward to reduce cupping and to facilitate drainage.

Treated lumber usually shrinks over time as it dries, so we install the boards tightly together with no visible gaps at the sides. When the boards shrink slightly, the gaps will open and allow better drainage. If you “pre-gap” treated lumber, then sometimes the spaces between boards can appear too wide after the lumber dries.

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EDGE DECK FASTENING SYSTEM

HOW IT WORKS



UPGRADE YOUR DECK

To fasten the boards, drive screws at an angle through the lower Shadoe Track mounting holes and into the underside of the deck boards. Use at least two screws at each joist-to-decking

intersection. The manufacturer recommends using the 1-1/4-in. coated Tru-Hold screws that are included with each package.

Where the ends of two deck boards butt together over a joist,

the Shadoe Track can be reversed so you can fasten both ends of the splice from below. Alternatively, you can place scrap blocking just long enough to bridge across the spliced board and two adjacent deck boards, then drive screws through the block and into the underside of the decking to cinch down the middle board. The length of your screws will depend on the thickness of your blocking and decking material, but be sure the fasteners aren't long enough to penetrate the deck surface.

CLAMPING

For standard installations, we usually like to adjust the decking with a board-straightening tool like the Hardwood Wrench. For this



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We recommend fastening the boards with an impact driver equipped with a bit-holder extension and a sliding collar that can hold the screw straight while you drive it in.



Drive the screws at an angle into the Shadoe Track mounting holes. The manufacturer recommends using the coated 1-1/4" Tru-Hold screws included with the kit.

FLASH THE FRAMING

When this deck was originally constructed the tops of the joists were lined with deck flashing—the black strips shown on the tops of the beams and the joists. This is a commonly overlooked step, but a great way to prevent accumulation of water that can lead to rot and overall weakening of the construction.



Deck Flash Barrier from Cofair Products comes in rolls, either 2 or 4 inches wide, which you roll out just like duct tape over the tops of the joists. The product is a self-adhesive asphalt mastic that creates a waterproof membrane and self-seals around screws and nails, blocking a primary pathway for water infiltration into deck joists. Visit www.cofair.com.



Stagger the end-joints from row to row.



Inspect the end-grain of the boards and fasten them “bark side up.”

project, however, the Shadoe Track channels didn't fit our go-to tool, so we took a different approach: using clamps to straighten bowed boards.

The Ecolife boards weren't badly bowed, but even 1/4 inch can create an unsightly gap, and the spacing issues can accumulate and worsen throughout the installation if you don't address every row of boards. We used a combination of long bar clamp and pipe clamps, anchoring one end against the deck's fascia board and pinching the other end against a problem board until it straightened. As we progressed we would clamp several boards together at a time and fasten them all at once from below.

But what if your deck is bigger than your clamps? We were rebuilding a 12-by-40-ft. deck, and most people don't have 12-ft. clamps laying around. Our solution was to occasionally leave one of the deck boards loose at a strategic location. The board in question would have been gang-clamped with the others, but we left it unscrewed. As the new deck floor moved further from the fascia board and the clamps could no longer reach it, we would pry up our special loose board to grant clamp access to our newly fastened decking. This gave us a strong foothold to anchor one end of the clamp at a closer location, and granted greater reach to the other side

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bend it, keep
it straight!



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UPGRADE YOUR DECK

of the soon-to-be-installed boards.

Note: For the final few deck boards, we reconfigured our bar clamps as spreaders, and rather than pulling the boards together to straighten them, we pushed off

the joist-end blocking to straighten the rows.

TOOL TIPS & ERGONOMICS

Whether you're a professional deck-builder or DIY'er, most of us



Clamps will help straighten bowed boards during installation. As we progressed, we left a few strategically located boards loose with no fasteners. When our clamps would no longer reach, we pulled up a loose board to give us a new location to anchor the clamps.

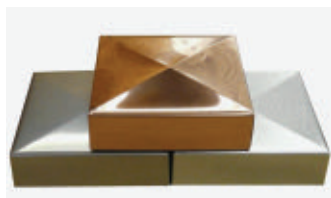


Keep a jigsaw nearby to make any notches necessary for railing posts or other obstacles.

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Sheet Metal Post Caps provide a sophisticated way to protect your fence, deck, and yard posts while upgrading your home's architectural features.

We craft post caps in a variety of unique styles using uncoated copper that will naturally develop a protective patina over time.



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- 1/2" hemmed sides



SQUARE COPPER POST CAPS

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Standard sizes range from 3 1/2" x 3 1/2" to 7 1/2" x 7 1/2".

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Also available: stainless steel, galvanized steel, and painted galvanized with many color options.



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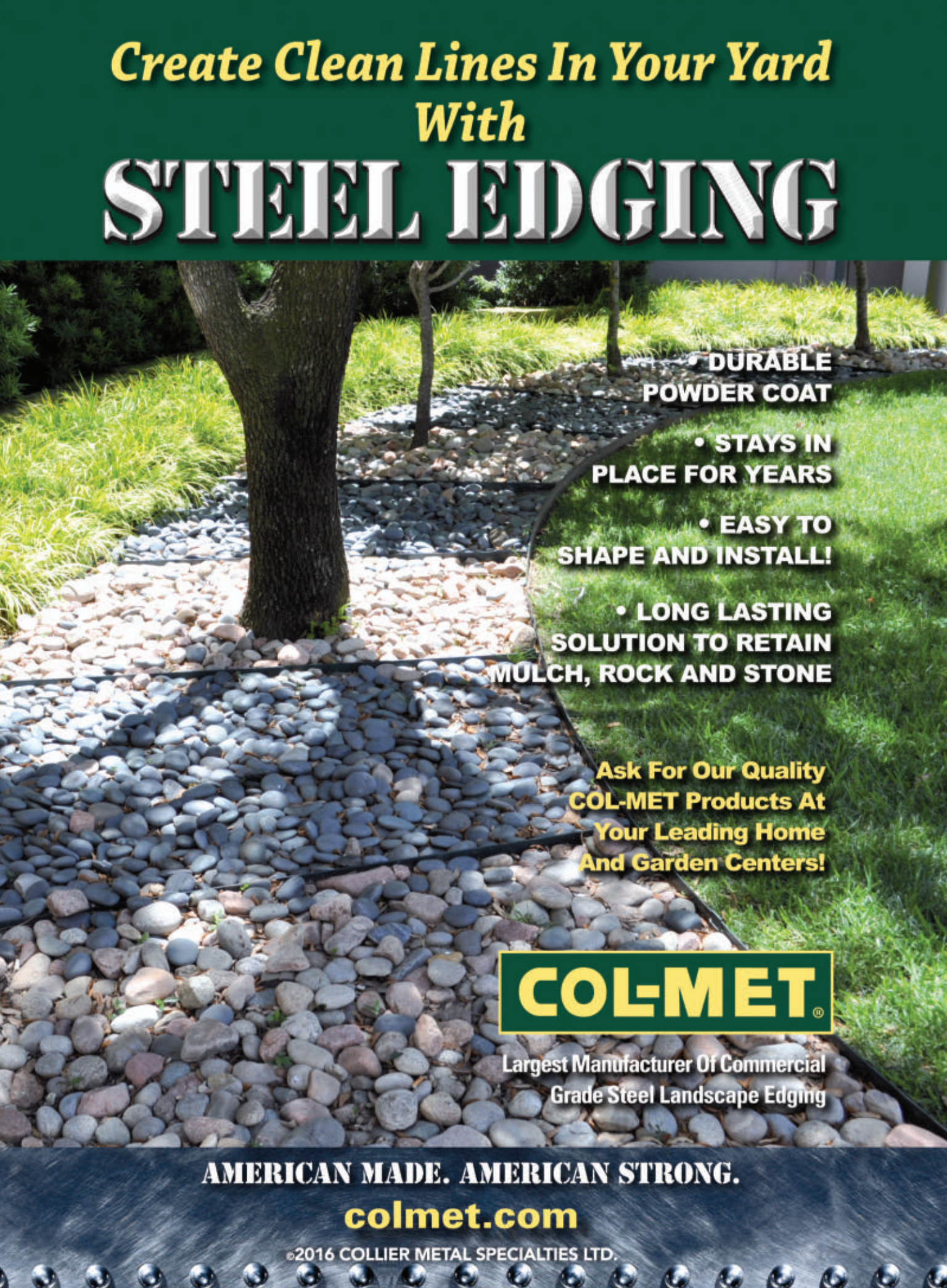
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aren't accustomed to working underneath a deck. Whenever we had enough room, we used a rolling shop stool beneath the deck so we could fasten the boards from a seated position. This is much more comfortable than squatting on your haunches. The stool swivels for easy movement, it's lightweight and it rolls, plus a tool tray at the bottom can hold fasteners, sunglasses and a beverage.

In lower-to-ground areas where a shop stool won't fit, we recommend supporting your weight with one arm draped over a joist while you fasten the nearest board.

During installation, we at first found it tricky to guide the screws into the Shadoe Track holes when

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UPGRADE YOUR DECK

fastening the decking. To make this easier, we arrived on the following tool setup: First, an impact driver will afford better control

than a standard drill/driver. Use a long extension for your bit-holder for easier reach into the corner beneath the deck boards. And



In tight spots, support your weight with an arm draped over a joist while you fasten the nearest board.

finally, use a bit holder with a sliding collar than can hold the screw straight while you insert it into the screw hole. After we adopted this procedure, our speed of installation increased dramatically.

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CHECK THE JOISTS

Our failure here was not determining the joist in the middle sagged until we had already fastened the metal track to it. We should have first have run a string-line across the tops of the all joists to make sure they were all level in the same plane. We found this one a little late. The substantial sag required us to remove the joist and completely replace it before installing the new deck boards.



Whenever you have room beneath the deck, we recommend using a swiveling shop stool for a comfortable working position.



We installed blocking between the cantilevered joist ends to prevent them from twisting over time.



For board ends that were spliced over the joists but not fastened to the tracks we installed under-deck blocking and cinched down the boards with screws from below.



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Rustic Doors for Cabinets & Drawers

How To Build Rustic-looking Doors on a Budget



By Rob Robillard

I was recently contacted through ConcordCarpenter.com with an email that started something like this: “Can you make me rustic looking cabinet doors quickly, cheaply, but built real well?”

FAST, GOOD, CHEAP TRIANGLE

I’ve always tried to avoid doing anything cheaply and have half-jokingly followed the “Designers Holy Triangle.” The DHT is used when pricing a project; clients must choose only two out of the three options. They can’t have it all!

The Fast, Good, Cheap Triangle goes like this:

1. Good + Fast = Expensive:

Choose good and fast, and we will postpone everything else and

make you our priority. We’ll work 24/7/365 to get your project done! But don’t expect it to be cheap.

2. Good + Cheap = Slow:

Choose good and cheap, and we will do a great job for a discounted



Here's what to consider when contracting a home-improvement project.

price, but be patient because we want to do it during the winter while we’re having our lull.

3. Fast + Cheap = Inferior:

Choose fast and cheap and expect an inferior job delivered on time. You truly get what you pay for, and in my opinion this is the least favorable choice of the three.

FISHING, SHIPPING, A LOVE STORY, AND OF COURSE BEER!

While I would normally run away from a project request like this, I was drawn to this man’s story. He and his wife had recently purchased their dream house in Newburyport, Massachusetts. Located on the southern bank of the Merrimack River where it empties into the Atlantic Ocean, Newburyport has a long and rich history. Originally the area was inhabited by the Pawtucket Indians and later became a city in 1851. It was once a big fishing port, shipbuilding and shipping center, and was known for silverware manufacture. It’s also the location of NBPT Brewing Company—one of my favorite “beeaah” makers (said with a strong Boston accent).

According to my new client, his wife took ill and passed away. He really wanted to follow through and finish the dream project according to her original plan. Every time he spoke about her or the project his eyes would well with tears. How could I say no?

DESIGNING THE DOORS

When we met, he brought a sample of the current French

The weakest link in a modern roof:

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The plumbing vent pipes that penetrate your roof are typically sealed with an old-fashioned rubber gasket to keep water from entering the home. These rubber gaskets deteriorate when exposed to the sun and high temperatures. Over time they get brittle and crack, losing their ability to protect the home from water intrusion.

While modern roof shingles often offer a lifetime warranty, these rubber gaskets usually deteriorate in as little as 3 to 5 years. As a result, water begins to flow into the home causing damage to ceilings, interior walls and carpet.

Problem Solved:

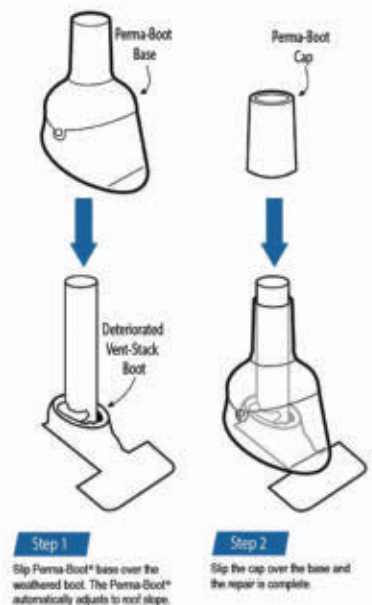
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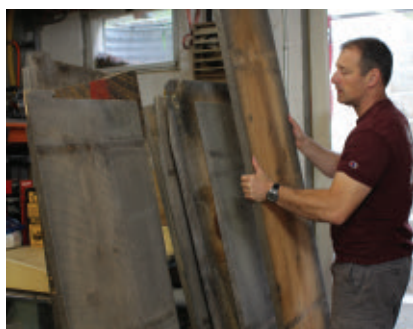
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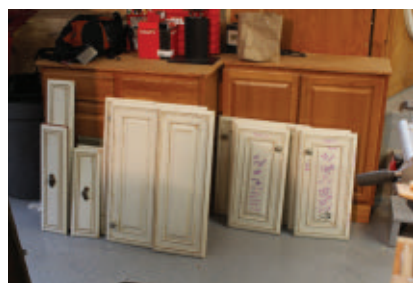
Contact Perma-Boot to learn how to add years of leak-free life to your new or existing vent pipe flashings.

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The new cabinet doors were made from rough sawn lumber purchased from a mill.



The homeowner provided the old doors as a reference for measurement.

provincial style cabinet doors, which he wanted to replace. His plan was to keep the cabinet boxes and face-frames and apply new, rustic-looking doors. The doors would copy the old overlay design and be painted an olive green color.

I explained to him that I preferred to build my doors in a “Stile and Rail” or “Frame and Panel” method with a floating door panel. This method allows the door panel to fit into grooves along the doorframe. Frame-and-panel construction, a method developed hundreds of years ago, deals well with the expansion and contraction that seasonal humidity has on solid wood cabinetry.

“Clearly there MUST be a cheaper, faster way?”

After some back and forth discussion, on door construction as



First step was to cut the door blanks to size with a table saw.



Label the pieces as you work to stay organized.

well as the time/cost involved to make the doors traditionally, he asked me if I would glue strips to a door blank. This way the door would appear to have a solid panel with a faux rail and stile.

After some thought I told him could do that a lot faster, and with less machine setup, than construct the frame-and-panel doors. My only reservation with this idea

is the doors will be susceptible to cupping and movement. He told me he didn’t care, and we agreed to start and keep the project to 16 hours of labor.

My client wanted to use pine and wanted me to incorporate the saw kerfs in the doors’ design. Rough sawn pine is used for many homeowner projects such as siding on sheds, fencing and bird-houses, so we thought it was the perfect choice for this project.

WHAT IS ROUGH SAWN?

Rough sawn lumber is left rough from the saw mill and usually needs to be dried, planed and otherwise dressed by the end user. Drying is often done by leaving the lumber outside, but it can also be dried in a lumber kiln or in your workshop. Often times you can purchase this lumber from the mill after it is kiln-dried.

WOOD SPECIES

There are a few species that are best suited for a rustic appearance. We chose kiln-dried, rough sawn Pine. It is a fairly popular choice for a rustic look because it displays the visible knots for which rustic kitchen cabinets are well known. Pine is also a sustainable resource, readily available and reasonably priced.



A power planer is an excellent tool for thinning the wood stock.

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SELECTING MATERIAL

We chose to get our rough sawn lumber from a local saw mill called Parlee Lumber & Box Co., Inc. Parlee was originally

established as a gristmill and was converted to a sawmill in 1815.

Parlee had an assortment of 1/4-in. (4/4) and 2-in. thicknesses

in addition to the following widths: 4, 6, 8, 10, 12 inches, and wider. We were able to purchase 4/4 x 18-in. wide boards.

Rough lumber thicknesses are measured in 1/4-in. increments. The thinnest rough-cut boards, labeled 4/4 and called "four quarter," are 1-in. thick.

Tip: A common rule of thumb is to buy 10 to 20 percent more than you need (and I'm glad we did).

DON'T FORGET THE COUNTERTOP OVERHANG

I made my client a sample door and drawer set to make sure he was getting what he wanted. I originally used a thickness planer to mill the 4/4 pine down to 3/4-in. thick and added the 1/4-in. strips, resulting in a finished thickness of 1 inch. The old doors were 3/4-in. thick, and the new doors left

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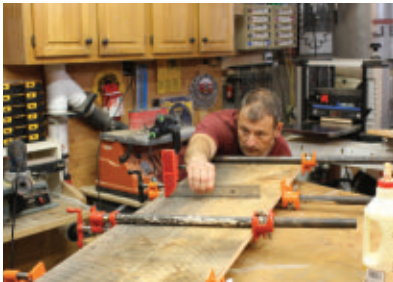
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Some of the boards had to be edge-glued into larger boards. To make a stronger joint, a domino cutter was used along the edges to be joined.



Dominoes are then inserted into the slots with wood glue to bridge the edges and help seam the two pieces together—like a biscuit joint, only stronger.



Join the edges carefully to keep the door face even and flush.



To achieve a "frame-and-panel" look, faux rail and stiles pieces were attached to the front of the cabinet doors.



The shorter rails should butt between the longer stiles.

only a 1/2 in. of granite counter overhang. As a result we decided to split the difference and opted for a 7/8-in. thick finished product.

MEASURING FOR DOORS

Measuring was easy. My client brought me the entire set of doors and drawers, all I had to do was replicate the width and height of them. Having them in the shop as I worked was extremely helpful for reference.

MILLING THE DOOR PANELS

Rough lumber is rarely flat or straight. I used the table saw to size the lumber and my 13-in.

thickness planer to mill one side of the lumber down to just under 3/4 inch.

Carpenter Tip: Take the time to make a cut list and group all of



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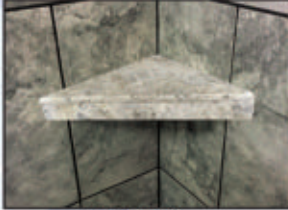
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The faux rails and stiles are adhered to the doors with wood glue.

Use plenty of clamps to ensure a strong glue bond.



your same size rips together. This reduces the adjustments on your saw and is more time-efficient. Write your finished, cut sizes on the boards' edges for future reference and to ensure you have made all the parts prior to moving onto the next task.

Milling 1/4 inch of wood off a board is a lot of work, puts wear and tear on your tools, and creates a ton of sawdust. I emptied my dust collector twice.

On the three largest doors I had to cut the lumber to fit into my thickness planer and then glue it back together again. I matched the rough sawn pattern and used dominos inside the joints to keep the panels aligned and give them strength.

Once I had the doors milled, I gave the rough sawn faces a light sanding to remove the splinters, dirt and other debris.

MILLING THE RAIL-AND-STILE STRIPS

Choosing a fairly standard stile and rail width, I ripped some of the rough pine boards down to 2-1/2-in. wide. I then flipped those boards on edge to rip them into 1/4-in. thick rough sawn strips. I set the table saw fence 1/4-in. off the blade to do this, keeping the





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The Survivalist (\$135)

This is it. This is the culmination of all we've learned about the craft of tool making. And we believe it's the pinnacle of hatchet design. Made from top quality 4140 tool steel (AKA "Ordnance steel" because it's commonly used for making breech and barrel parts for guns and cannons) for both toughness and edge retention, and ground to within a +/- .005 tolerance, we designed the curved blade for both optimal cutting and splitting wood. We've also incorporated a nail/tent stake puller and the hammer end (of course) has our patented recessed striking face. At 19oz on an 18" handle, it's perfectly balanced for any job, whether it's pounding nails, chopping and splitting firewood, or fending off the impending zombie apocalypse. (Cause we all know its coming. And now it's official Kansas preparedness policy. True story!) This premium hatchet cuts like a full size axe yet is small enough to fit in a backpack. It comes with a top quality custom fitted leather sheath

The Super-Naturalist (\$60)

We decided to take a closer look at one of our best sellers, and using what we learned from developing the Survivalist Hatchet, we re-created the Naturalist, adding some new features and making it, well, Super. We started by upgrading the alloy steel to 4140 "ordnance tool steel", for greater edge retention and better impact resistance, then shaved off several ounces to make for improved handling control and quicker swings. We added a much-needed nail puller, curved the bit a bit for better chopping and deeper cuts, and finally, stamped our logo into the steel. We feel that this hatchet is truly befitting of the Survivalists little brother. Works better than any other for yard work, bushcraft, construction, camping, drywall, you name it.

Weights in at just under 17oz of steel mounted on an 18" curved hickory handle. Bit is 3-1/4" long, over all head length is 7". Naturalist sheath fits this hatchet like a glove. (we did plan it that way!)



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rough sawn faces against the fence. By cutting both faces of this board I was able to get two pieces of rough sawn strips per board, and a 3/4-in. thick piece of cleanly cut pine for the scrap pile.

When ripping the strips I used a table saw and feather-board to keep the board tight to the fence. I also used a sacrificial push block to move the board through and past the blade.

Note: On the drawers we reduced the faux strips to 2-1/4-in. wide for aesthetics.

APPLYING THE FRAME-AND-PANEL LOOK

On traditional frame-and-panel doors the “stiles” always run from top to bottom along the sides and the “rails” fit between, and butt into the stiles.

After cutting one side of each strip square, I flushed the strip to the end of each rough sawn board and used a utility knife to mark the opposite end.

I made all the cuts on a miter saw, lightly eased the edges with a hand plane and then glued them to the rough sawn board with wood glue. A few well-placed pin nails held the strips in place until I could apply clamps.

Once both of the “stiles” were applied I followed the same method for squaring, marking and cutting the “rail” strips.

“WE’RE GONNA NEED MORE CLAMPS!”

This method of construction quickly eats up your supply of clamps, so make sure you have enough handy to do this before pouring the glue. Putting the glue back into the bottle is harder than getting it out!

To help with the shortage of clamps, I used strips of scrap pipe as “clamping cauls.” Cauls are used when clamping and gluing up project. Cauls provide better



For the hinges, we re-used the existing Blum Overlay Hinges designed for face-frames and replaced any as needed.

Shown here is a replacement for a drawer front, which exhibits the rough sawn texture the homeowner desired.

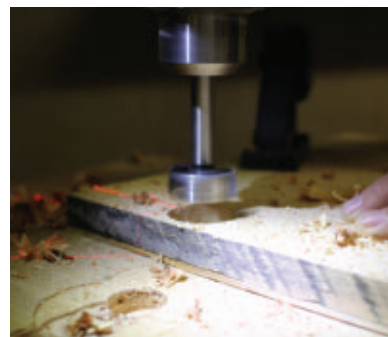
and more even pressure across the workpiece, beyond the reach of the clamp’s head. Cauls also allow you to reduce the number of clamps required on a glue-up.

SAND ALL SIX SIDES

I allowed a day for the strips to dry, filled any voids with wood filler and then sanded the faces with an orbital sander. When sanding, I focused on getting the style and rail strip intersections flush but used care not to eliminate the sawn marks.

I then took the door and drawer blanks to my Ridgid benchtop belt sander and carefully cleaned the edges, focusing on getting the applied strips flush with the rough sawn board.

Tip: The doors are longer than the sanding belt, so I “free-handed” the sanding procedure. This required me to carefully and evenly move the door back and forth along the sanding belt.



A Forstner bit mounted in a drill press made the holes for the hinges.



Finally, drill holes to mount the knobs or pulls.



The homeowner provided solid cherry knobs for the new cabinets.

DRILLING FOR HINGES AND KNOBS

We used a 35mm Forstner hinge cup drill bit in a drill press to make the door-hinge holes. I placed these holes in a slightly different location than on the older door hinges so as not to have to deal with the old screw holes in the cabinet case face-frames. These holes would be filled and painted by the painter and I wanted solid wood for my screws.

The client provided me with solid cherry knob pulls, and I simply centered and drilled these in the locations he desired.

For the hinges, we re-used the existing Blum Overlay Hinges designed for face-frames and replaced any as needed.

I like these hinges as they have a smooth, soft-closing

action and are ideal for face-frame cabinets or any cabinet where clearance is an issue. Each hinge has three-way adjustability, are compact and are available in five different overlays, ranging from 3/8 to 1-3/8 inch.

HANGING THE DOORS

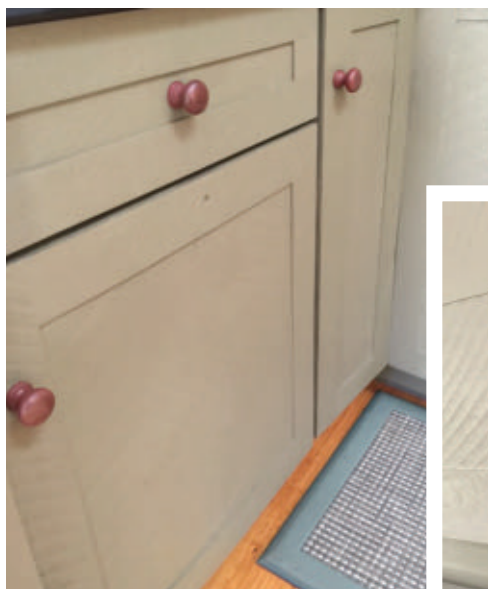
To save costs the client chose to paint and hang the doors. I mounted the hinges to the door so all he had to do was establish a reference point to keep all the doors the same height. I told him to make a small story pole or

reference stick and use it at each door. Alternatively he could also install blue tape at the tops of every door and use a laser or level and make reference marks.

Whichever way he chooses, he is one step closer to accomplishing his dream house.

DIY DOORS

This method is a fairly straightforward way to make a "frame-and-panel looking" door. If you have limited tools, you could do this with 3/4-in. stock and eliminate the thickness planer altogether. **EHT**



Shown here are the finished cabinets.



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Stack it and Rack it

How to Make an Outdoor Firewood Organizer



By Mark Clement

Anyone who knows me or watches *MyFixitUpLife* on YouTube might've heard me discuss this: I'm not a big fan of piles.

The pile system for anything—tools, toiletries, kids' toys—really rankles my mojo.

We cannot have rankled mojo now, can we?

Things that are off the ground and within reach work better. They're easier to get, easier to use, easier to put away. Things trapped in the bottoms of bins or boxes are harder to use. I am not anal or OCD; I am in a hurry.

Plus, if I'm going to waste my time, I want to waste it on my own terms. I prefer wasting it on Facebook fail videos or reading an actual book or riding

my bike—not breaking my knuckles wrestling a log out of a box.

This mojo is the source code for my firewood organizer design. I want to enjoy the fire, not fight with the logs or have a pile of ants crawling around under a heap of firewood on my deck. I want to listen to the crackle, not muck around in bark. I want my house to look like I care about it. The former owner (pretty sure the old hag haunts the place from time to time) would probably like it, too.

So here's how I made it.

DESIGN

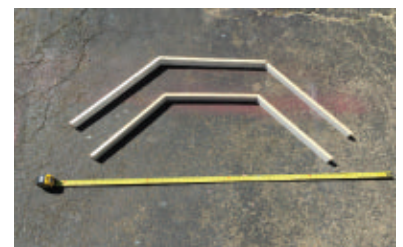
I designed this project to store firewood, kindling and related supplies outdoors but near the house—on a porch, for example. Or near the backyard fire pit, which is where this one lives.

I also designed it to be off the ground so wood can stay reasonably dry and out of the snow and other weather. And, if I want to sweep or blow the debris away from it periodically, I can.

Finally, I designed it to look cool. So you're not just looking at a hunk of sticks and brackets, but a skillfully assembled shape. It is made from five 2x12x12 pressure-treated Southern Yellow Pine boards, exterior screws and some miter-saw magic.

HOW-TO

It's not impossible to make this with a circular saw, but the miters might suffer somewhat. I used my



Math is nice. Reality is nicer. Sometimes a few scraps cut to size can help you visualize how big—or not big enough—something is and how well it might fit the intended location.



I cut 8-footers down to 4-footers then, just to be sure, re-cut the 22.5-degree miter on the easier-to-handle smaller piece.



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Accurately measuring and cutting eight identical pieces is "Level 1000 Unlikely." It's easier to make one piece and use it to mark the others, so all you do with the next pieces is slide them to a line.



Sometimes a flat surface is hard to come by. A table saw works in a pinch.

12-inch slide compound miter saw to mac-daddy these miters.

While you could scale the dimensions for this up or down, each piece of the octagon in this project is 20-inches long. (Make a test piece to help visualize scale).

Each miter for the frame is 22.5-degrees. Once assembled, it's under 5-feet wide in all directions.

Making the miters. This project relies on accurate cuts. Because we're building a shape, it's important that all the pieces are as equal to each other as possible.

The first step is making sure your miter saw is cutting accurate angles. Check it with your square and adjust it before starting this or you will be upset later. Next, it's important that the work is supported. Even a short 2x12 is heavy, and a support table of some sort is ideal for getting accurate cuts. Sharp blades don't hurt either.

Next, I cut an 8-foot board down to 4-feet. This makes the pieces easier to manage. I then tune up the saw to be sure I get an accurate miter. A 2x12 is a lot of acreage to cut.

Measure once, mark the rest.

The chance of making eight measurements and cuts exactly the same as each other by measuring them individually is almost zero. It's much better to make one piece then copy it.

So make one piece, then copy it. I can do this on my miter saw work table because I can simply draw a line on it, then place my new pieces and cut. Have I mentioned how much I love my miter saw work table?



I start miter assembly with a 2-1/2" Spax HCR-X exterior screw...

I then follow up with a #10, 3" screw to strengthen the joint.



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For circular saw cutters, use the first piece you cut as a pattern piece, like you'd do with stair stringers.

Make the frame. The flatter the surface you have to work on, the easier this part will go. I have a driveway that's as flat as the surface of a lake during a thunderstorm, so I used my table saw deck instead.

I also oriented the boards so that all the good sides (i.e. not dinged by the forklift in the home center) are faced the same way. The show sides are placed on the table saw deck, and I fasten with Spax HCR-X deck screws.

Three-inch, #10 screws are ideal for making a great connection, but that's a lot of steel threading its way through a loose miter. To get things stable, I clinched the pieces with some 2-1/2-inch screws. They're just long enough to hold everything fast. Once I bomb a few longer screws in there, I replace the shorter ones with the heavier iron. I like three screws going through the miter in each direction.

I could assemble four of the eight sections on the saw table into two halves. I then joined the halves (this is fairly heavy by now) on the ground. I then raised it vertical and finished screwing everything together.

Shelves. The shelves serve two purposes. First, they're the sections for the organizer. Second, they hold the piece together, like ribs. Because they have a structural function, and I'm a glutton for miter punishment, I interlocked them with the frame's miters.

To get the overall length, I measured the span, flat-to-flat.

Next, I used a 1x scrap (3/4-in. thick, or half the thickness of 2x) to mark the edge of the shelf



Using a 1x to mark the 2x for the half-miter on shelf material is easier than measuring.

Using the square instead of measuring worked better to make the divider look right.



blank. Then, I tipped my saw to 45-degrees and cut to the line. This is not the easiest cut in the world to make. I chose it because it gives the shelf a connection to four shelf segments as opposed to two, which would be a lot easier to cut.

For the vertical dividers, I made the same angle cut. Then, when installing them, I found that using a square was the best way to close the miters at the top and make it look just right. I tapped them into place with my hammer.

I say tapped because I don't mean pound. If you have to hit it hard, it doesn't fit. Whack off half the thickness of a saw blade and try again.

Feet. I ripped a 2x12 in half on the table saw. Then I ripped 22.5 degree bevels on each end (the feet are shaped like a parallelogram). I clipped a 60-degree bevel off each foot on the miter saw to give the tops a nice taper, then fastened to the base.

When people ask me why I like long bit holders for my impact



A piece you can tap in place, fits niiiiiice. A piece that you have to pound in doesn't fit at all. Hitting hard? Whack off half the thickness of a saw blade and try again.

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Feet, beveled 22.5-degrees with a nice little 60-degree clip on the tips, keep the firewood organizer elevated and more stable.

driver, it's situations like this. I also used the 2-in. screw approach to trap these pieces in place. Screwing at weird angles like this, it's easy to shoot a screw out the edge of a board. It might take a few second glances for your brain to make sense of the geometry and where the screw is really going. I popped a few in the wrong direction.

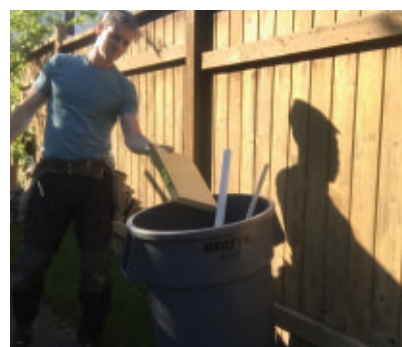
Finally, I ripped a couple of stretchers to span between the feet.

Unless you're the Hulk, this is too heavy to move. I rolled this into position in the garden. A trip up the porch stairs will probably require some hired muscle.

One more thought on vertical organization. Places for things



People ask me why I like long bit-holders. This is one of a million examples.



Tip: A garbage can or box near the cut area is part basketball hoop, part neat jobsite maker.

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Stretchers between the beveled feet hold the feet together and provide a little gap between the bottom of the firewood organizer and the ground to blow dust and stuff away.

I drove a nail in the side of the frame and now have a better place for my ax than "wherever I dropped it last."

breed places for things. For example, my axe. I usually just put it "over there" because there is no place for it. Now, with a nail poked into the side of the firewood organizer, there is. **EHT**

Editor's Note: Mark Clement is a carpenter in Ambler, PA, and co-host of the MyFixitUpLife show.



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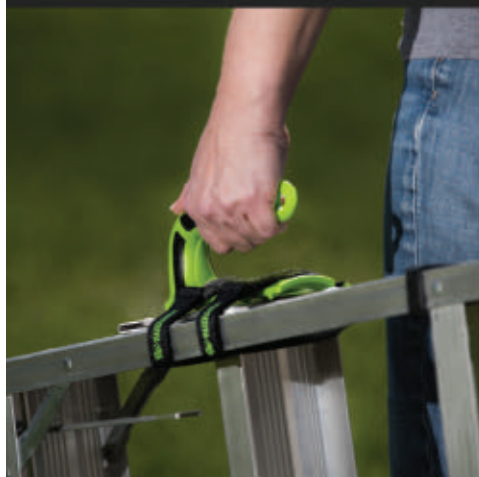
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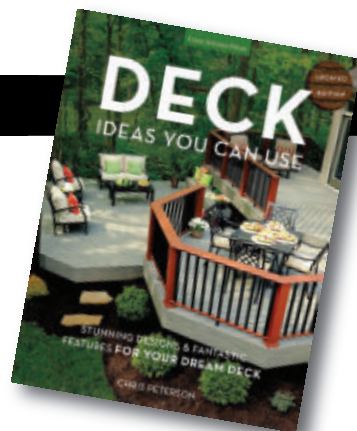
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Signs of a Blown Head Gasket

One of the best ways to figure out what is going on with your car is to know how it normally operates so you can tell when something has gone awry. Most of the time while we're driving we're so distracted by the radio, the scenery or even worse our cell phones, that we can often overlook our vehicle's cry for help. Getting used to the way your car sounds, feels and looks normally can be the best way to help you detect the early symptoms of a problem so you can repair it before it leaves you stranded or does even more damage to your vehicle.

Every week or so, it would be a good idea to turn off your radio and really focus on the feedback your car is giving you. You should start this exercise from the moment you jump in your vehicle, even before you start the engine. Look for anything unusual around or under your car. Are there any puddles or drips under your vehicle? Are there any new scratches, dings or dents you don't remember? Is anything discolored, are your tires pudgy or getting cracked or have low tread depth? Observing all these things can help you catch problems early.

Also, pay attention to when you start your engine. Does it start easily? Does it make any funny noises or smells? Do any warning lights on your dash board stay on after the engine is running? Lastly, during your drive listen for the same types of things. Are there any clunks, rattles, whines, or grinding sounds? If so when do they happen? Does your car accelerate, brake and corner smoothly? Keeping an eye on these types of things can help you make sure your car is in great shape and help you catch a warning sign early.

Some of the signs you may be looking for, especially if your car model is prone to blown head gaskets, or you happen to have a lot of miles on your car, are the signs of a blown head gasket. Blown Head Gaskets can cause your vehicle to do some very strange things and give confusing symptoms, so we'll list the symptoms here so you can identify your problem early.

Signs of a Blown Head Gasket:

- White smoke from the tail pipe
- Bubbles or exhaust gas in your radiator
- Coolant flowing out of your coolant reservoir
- White milky substance in your engine oil or around your oil cap
- Loss of power
- Overheating engine
- Coolant leak from between your engine block and cylinder head

Your head gasket serves as a seal between your engine block and cylinder head. It keeps the combustion gases in the combustion chamber while keeping the coolant in the water jacket. A blown head gasket will allow coolant to leak into the combustion chamber, or externally, or could allow combustion gases into the cooling passages.

If coolant leaks into the combustion chamber it will come out of your tail pipe as white smoke. It can also seep past your piston rings while your engine is off and contaminate your oil causing a milky white color. When your engine is running, the high pressures in your combustion chamber can push exhaust gases into the cooling passages causing coolant to bubble in the radiator and pressures to get so high that coolant will actually be forced out of the coolant reservoir.

If you are experiencing any of these symptoms within a few minutes of starting your vehicle's engine, there is a good chance you have a blown head gasket.

The good news is if you're paying attention to these symptoms and catch them early, you often can seal your head gasket leak without having to replace the head gasket. BlueDevil Head Gasket Sealer is a powerful formula that can seal head gasket leaks even in vehicles with very large cooling capacities like V8 engines and truck engines. BlueDevil Head Gasket Sealer is easy to use and can quickly and easily seal your head gasket leak.

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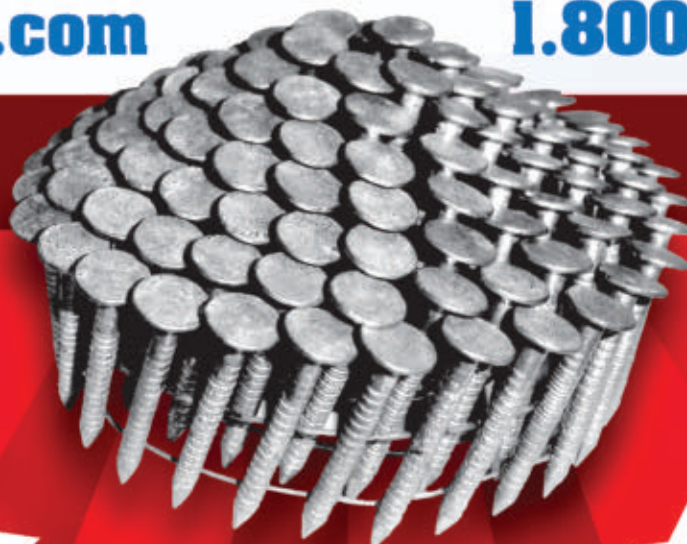
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