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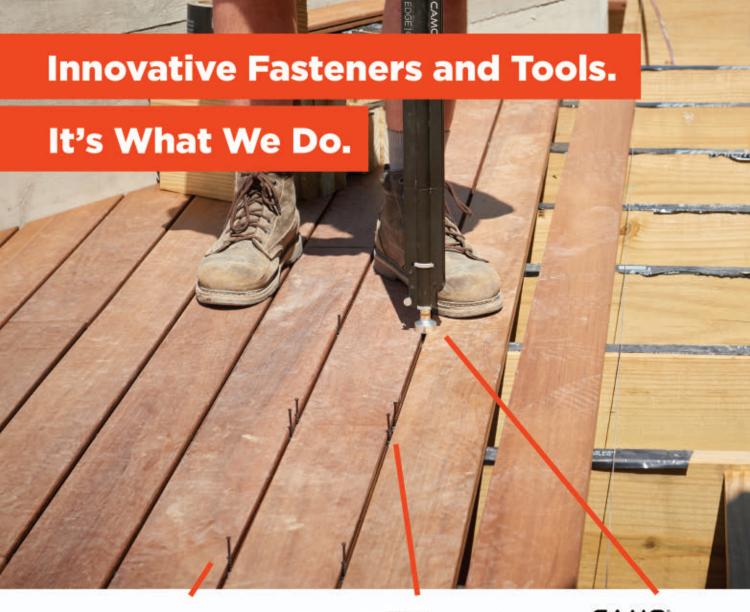
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#### FEATURES

**24** Gutters for a Healthy Home

Sectional Gutter Installation for the DIY'er

**34** How to Build Stairs

Constructing a Staircase, Step by Step

**42** Coating a Countertop Give a New Look to an Existing Surface

#### **EVERY ISSUE**

- **6** From the Editor
- **56** Advertisers Index

#### COLUMNS

- 8 Q & A
- 12 Project Next

Filter Water Throughout Your Home

#### **DEPARTMENTS**

**48** Spotlight

The Big Draw of Tankless Electric Water Heaters

**52** Hot Products



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#### From The Editor-In-Chief

Some friends of mine were lucky enough to inherit a large home and several acres of property. They are now in the middle of a major remodel. When I say "major," I mean the entire house is currently down to bare bones, exposed stud framing without so much as insulation or wallboard in place. Even the electrical is getting replaced, because the walls had outdated aluminum wiring throughout.

It occurred to me that this is the most extensive remodel I've ever witnessed. The new owners are having some walls knocked out to rearrange the floor plan, a balcony porch constructed, and they've already erected a detached two-car garage, plus a new pool house adjacent to a large in-ground swimming pool. If they had not left most of the original house frame, this project would qualify as a complete "demolish and rebuild." As it is, this house is really going to be swanky in a few months.

Which got me thinking... If you had the budget and opportunity to strip your house down to the bare studs and build it up again to your specifications, what would you incorporate? How would you make your house your "dream house"?

As far as my friends, I've already mentioned the pool house and the covered parking, but as far as interior décor—everything has to be replaced!

Think about it; you would have your choice of color, texture and material for each and every room. You'd get to establish your trim style for the whole home.

My friends' place has already gotten a new roof and windows, and soon to come will be customized cabinets and quartz countertops. They're are also heavily into technology and will be wiring the house with smart controls that operate an audio system throughout the home via speakers mounted in the walls and ceilings. This arrangement is specifically set up for football games, so they never miss hearing a play, no matter where they are in the house.

Pretty cool, if you ask me.

Having wrapped up our November/December issue, the EHT



staff is now scheduling topics for the new year, and we'd love to hear from our readers. Send us an email and let us know what you dream of doing to your home, and we'll try to cover your ideas in a future issue of *Extreme How-To*.





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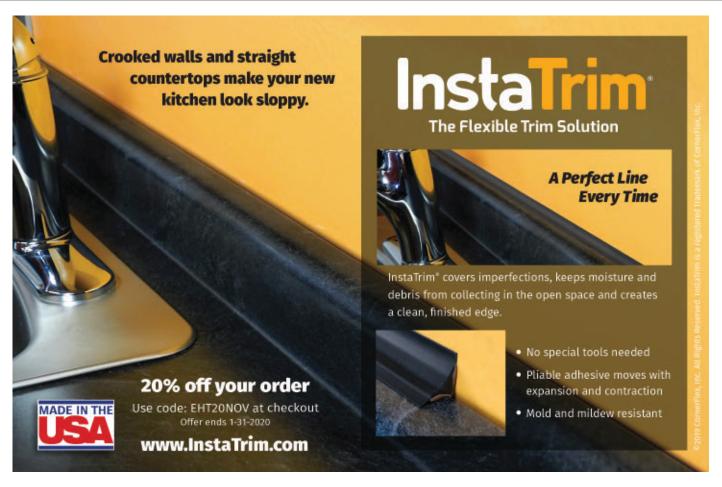
Questions About Home Building, Remodeling? Have Your Own How-To Tip? Visit our blog at **blog.extremehowto.com** and click on Ask Our Experts.

I want to add venting to the crawlspace of an old house. Are there certain building code guidelines
 I need to follow?

• Building code restrictions are enforced by municipalities, so you should call your local inspector's office • to determine guidelines for your area. In general, however, crawlspaces require one vent within 3 feet of each corner. The opening should be covered with 1/4-in. screen or grate. The minimum ventilation area for the crawlspace should be 1 square foot per 150 square feet of crawlspace area. Note that these rules apply to unfinished crawlspaces. No extra ventilation should be necessary for crawlspaces sealed with a vapor retarder, insulated walls, and conditioned air space with mechanical ventilation.

What are the advantages of KDAT lumber?

• Wood labeled KDAT is "Kiln Dried After Treatment." This process provides the benefits of composite material with the natural beauty and character of real wood. Dried to its original moisture content in a controlled environment, the wood dries evenly to minimize the natural tendency of freshly treated lumber to shrink, cup or warp. This high-quality lumber is the top choice for outdoor construction. Following pressure treatment, KDAT products are placed in a large oven, or kiln, where the excess moisture is removed. The stiffer and more dimensionally stable product reduces after-installation issues that occur when regular pressure-treated wood dries naturally. It also means your KDAT lumber should be kept elevated, covered and completely dry



#### HOME ENERGY EFFICIENCY

Month just over and the winter months just ahead of us, this is the perfect time to asses our homes to find out where we can be more energy efficient and save money. Making your home as energy efficient as possible is central to our national prosperity, security, and environmental well-being

Transforming your home into an energy efficient system does not mean altering your lifestyle into one of frugality and constraint. Although it is helpful to be mindful about turning off lights and unplugging unused electronics, being energy efficient is about making smart changes that allow the utilization of as much energy as possible. According to a recentreportfrom the Natural Resources Defense Council, "Energy efficiency is America's most productive energy resource".

Here are some ways we can embrace positive energy changes that cost far less than the energy they displace.

Upgrading your wall outlets to products like U-Socket, that are designed with energy efficiency in mind.

According to a study released by ENERGY STAR, "If every American home replaced just one light bulb with a light bulb that's earned the ENERGY STAR, we would save enough energy to light 3 million homes for a year, save about \$600 million in annual energy costs.

Investing about an hour of your time and as little as \$25 to install a programmable thermostat in your home can save you about \$200 a year.

Sealing up these air leaks with caulk is an easy fix that will save lots of energy when heating your home this winter. In fact, the average home loses 30% of its heating and cooling energy through air leaks.

Finally, the greatest benefit can be to better insulate your home. Chances are there may be areas of your home still in need of some insulation. InSoFast works on floors, ceilings, attics, interiors, and exteriors exterior walls in your home. As a homeowner with strict budget concerns, the DIY panels are a great solution because you can completely eliminate the cost of hiring a professional without sacrificing the effectiveness of the project.

Hassle-free efficiency.



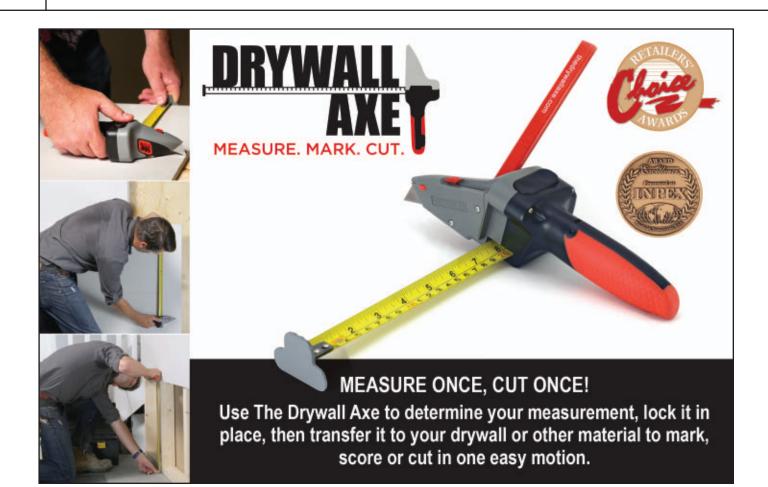


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before installation. After installation, it needs to be stained, painted or sealed immediately, which is an added benefit because you don't have to wait to finish the project. By comparison, freshly treated wood may take weeks or months to dry naturally enough to be finished. KDAT lumber from suppliers such as YellaWood is easy to handle, cut and install, and it weighs less than freshly treated lumber. The wood has a light, natural color for easy staining, painting or sealing, and YellaWood backs its KDAT lumber with a lifetime limited warranty.

How big of a notch can I cut from a floor joist before it weakens the joist?

• Floor joists occasionally need to be notched or drilled during construction, but you should take precautions not to weaken the structural strength of the framing member. First rule: Avoid notching a joist along the middle third of its length. However, drilling holes for wiring, etc. along this middle third is acceptable. The holes must be located a minimum of 2 in. from the top and bottom of the joist and from other holes. The maximum hole size is 1/3 the joist's depth. You can cut a notch at the end of the joist to 1/4 of the joist's depth (maximum). Along the outer third of a joist, you can cut a notch a maximum of 1/6 the joist depth and 1/3 the joist length without compromising its strength.



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#### Filter Water Throughout Your Home



to connect from the filtration system to the existing plumbing. We used copper tubing, but you can also use PVC, CPVC, steel or PEX plumbing.

A shut-off valve should be installed at the supply line prior to the filters so the homeowner can perform maintenance in the future, such as changing the sediment cartridges.

If you're using the recommended sediment filter, it should be installed as a pre-filter (after the shut-off valve but before the central filter).

The central filter is the next component in line, and it must be oriented in a vertical position to maximize contact with the filter media, and the tank should be supported from below. The simplest way to support the weight of the filter is to keep it on the floor. The central filter must be located indoors, protected from direct sunlight and freezing temperatures.

oes the water in your home have an odor or chlorine taste? Installing a central water filter for your whole house can provide pristine water from every tap. Filtered water is safer for drinking and cooking, and it improves the softness of hair and skin.

We recently installed an A. O. Smith Central Water Filter (model AO-WH-FILTER) to reduce chlorine taste and odor by over 97 percent. We coupled the central filter with company's Whole House Sediment Filter (AO-WH-PREO), which filters down to 20 microns. It reduces sand, sediment and rust from your

main water supply to minimize buildup in kitchen and plumbing appliances.

#### **INSTALLATION OVERVIEW**

A professional plumber should have no problem installing the filters. A DIY'er with some basic plumbing skills should be able to complete the job by following A.O Smith's instructions. The filters must be installed in an area where the main water line enters the home but before it connects to the water heater.

Always turn off the main water source to the home prior to installation. You'll need enough tubing





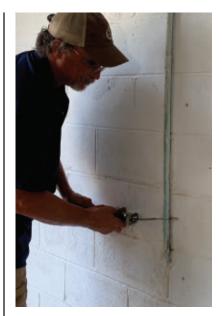
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#### **PROJECT NEXT**



The filters must be installed in an area where the main water line enters the home but before it connects to the water heater.

Note: The plumbing connects to the filters using threaded connections. Do not over-tighten the fittings, which may cause damage and leakage. Also do NOT use pipe dope, which voids the warranty. You may use NSF-certified pipe primer, glue and plumber's tape.

#### FLUSH THE FILTER TO PRECONDITION

Before final connection to the plumbing system, the central filter will need to be pre-conditioned by "surge flushing" it with water. This can even be done with a garden hose before beginning installation. The granular carbon medium used in the tank contains 1 to 2 percent by volume of carbon fines that must be flushed out prior to use. You can use the garden-hose

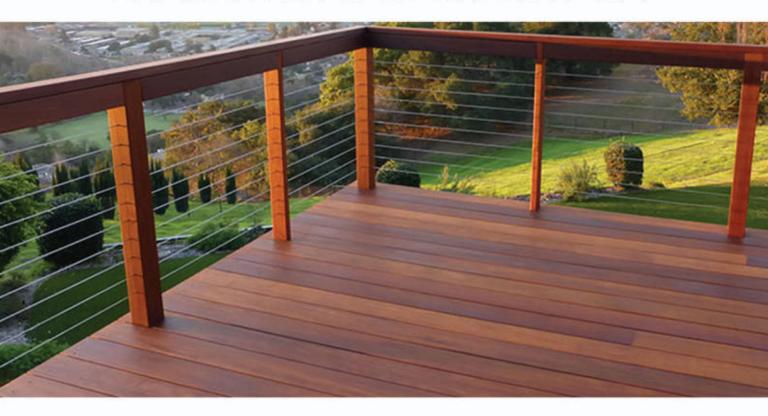
adapter included with the filter to connect a standard hose to the filter's inlet port. Slowly turn on the faucet so the discolored water flows through the filter and from the outlet port into a suitable drainage area. The first few gallons will appear black and cloudy due to the carbon fines.

After an initial 15-minute flushing, begin the "surge flushing" phase by turning on the water supply for 30 seconds and then off for 30 seconds, repeating the cycle for 15 minutes or until the initial surge of water is completely clear and free from discoloration and cloudiness.

Once the water is clear, disconnect the garden hose and position the filter for final installation.



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#### **PROJECT NEXT**

#### **SOLDERING BASICS**

Although PEX and other plumbing methods can be used to connect the filter, we felt that over time the weight of the sediment filter

might stress the PEX connections and risk leakage. To play it safe, we opted for traditional soldered copper pipe.

Use only lead-free solder identified for potable water applications.





Pro Tip: Copper pipe must be dry for soldering. To remove standing water, insert a large tube and cap the end with your thumb. Pull out the straw, release water into a bucket, then repeat until dry.



Prep solder joints by cleaning the copper tube ends using a nylon abrasive pad.

Use fluxes intended for use with lead-free solders. Avoid using 'self-cleaning' fluxes. Your local hardware store can advise you on the proper flux.

- **1.** Measure and mark the tube with a pencil. Remember to allow for the length of tube that fits into the fitting cup. Dry-fitting the tube and fittings before soldering will ensure the fittings are square and the runs straight.
- **2.** Cut the tube to the measured length. The tube can be cut with a disc-type tube cutter, a hacksaw, an abrasive wheel, or with a stationary or portable band saw. Be careful not to deform the tube



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#### PROJECT NEXT



The filter location required installation of a new shut-off valve.



Next, we installed a pressure regulator and the sediment filter. The vertical tube pictured is a temporary support piece to carry the weight of the filter and regulator until the supply line has been completed.

while cutting. Regardless of the method, the cut must be square so the tube will seat properly in the fitting cup.

**3.** Ream all cut tube ends to the full inside diameter of the tube to remove the small burrs created by cutting. If the rough, inside edge is not removed by reaming, erosion or corrosion may occur in the tube. A properly reamed tube provides a smooth surface for better water flow. Also remove any burrs on the outside of the tube end to ensure proper entrance of the tube into the fitting cup. You can use the

reaming blade on the tube cutter, half-round or round files, a pocketknife or a suitable deburring tool. If using soft tube (annealed), be very careful to not deform the tube end by applying too much pressure.

- **4.** Clean off all oxides and surface oil from the tube end and fitting cup. This will allow the proper flow of solder into the joint. Failure to remove them can interfere with capillary action and may lessen the strength of the joint. Lightly clean the tube end using sand cloth or nylon abrasive pads for a distance slightly more than the depth of the fitting cup. Clean the fitting cup by using abrasive cloth, abrasive pads or a proper-sized fitting brush.
- **5.** Apply a thin, even coat of flux with a brush to both the tube and fitting as soon as possible after cleaning. Do not apply the flux with your fingers, because chemicals in the flux can be harmful if they come into contact with the eyes, mouth or open cuts. Apply the flux carefully, because residue from excessive amounts of flux can cause corrosion.
- **6.** Insert the tube end into the fitting cup, making sure it is seated against the base of the fitting



The filters tie into the supply line using threaded connections.



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#### **PROJECT NEXT**



We installed the filters using soldered copper to ensure the connections maintained strength and rigidity over time.

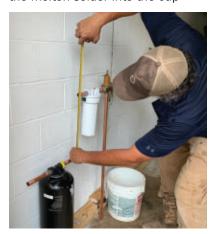
WHERE EXPERIENCE
MEETS PRECISION,
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Construction Mathematical Construction Mat

cup. Twist it slightly to ensure even coverage by the flux. Remove excess flux with a cotton rag. Support the tube and fitting assembly to ensure a uniform capillary space around the entire circumference of the joint.

7. Begin heating with the flame perpendicular to the tube, which conducts heat into the fitting cup. The extent of preheating depends on the size of the joint. Preheat the entire circumference of the tube in order to bring it up to a suitable temperature. (For joints in the horizontal position, avoid directly preheating the top of the joint to avoid burning the soldering flux.) Practice and experience will indicate the amount of heat and time needed. Next, move the flame onto the fitting cup. Sweep the flame alternately between the cup and the tube a distance equal to the depth of the fitting cup. Again, preheat the circumference as described above. Touch the solder to the joint. If the solder does not melt, remove it and continue heating. Do not overheat the joint or direct the flame into the face of the fitting cup, which could burn the flux and destroy its effectiveness. When the solder melts, apply heat to the base of the cup to aid capillary action in drawing the molten solder into the cup



The central filter was installed on the floor to support its weight.

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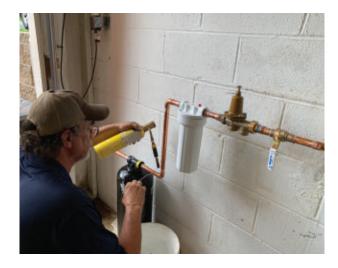
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#### **PROJECT NEXT**



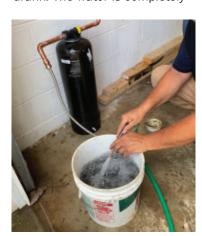
The central filter must be plumbed into the system in a vertical position.

toward the heat source. The heat is generally applied using an air-fuel torch.

**8.** Allow the completed joint to cool naturally. (Shock cooling with water may stress the joint.) When the joint is cool, clean off any remaining flux residue with a wet rag.

#### **GOOD RESULTS**

After installing both the central and sediment filters, we noticed a difference in the first glass of filtered water we drank. The water is completely



Before final connection to the system, the central filter needs to be flushed with water to remove the granular carbon fines in the filter medium.

odor-free and has a lighter, crisper taste to it. The whole-house filters are ideal for households of four or more people. The cartridge in the sediment filter lasts up to six months before requiring replacement, and the central water filter lasts up to six years or 600,000 gallons. If the A.O Smith water filters sound like a good fit for your home, you can find them sold exclusively at Lowes.

Learn more at www.aosmithatlowes.com.



The sediment filter uses a replaceable cartridge that lasts up to six months. The central filter lasts up to 6 years or 600,000 gallons.



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# GUTTERS FORA HIGHER By Matt Weber HONE

Ithough gutters hang from the eaves, it's actually the home's foundation they're protecting. Gutters manage rain runoff that would otherwise be pouring off the roof and driving into the ground around the house. Not only can all the splashing cause damage to siding materials, but if this water is not redirected away, it can accumulate, leak into the house, create all sorts of moisture problems, and eventually damage the structural foundation. A properly installed gutter system is the home's first line of defense to prevent such problems from happening.

Gutters and downspouts are available in a wide range of materials and styles, including aluminum, vinyl, galvanized steel, stainless steel and copper. Gutters are also available in various sizes and shapes called profiles, but are generally limited to rounds, half-rounds, ogees and rectangles. The most popular options are half-round and "K" profiles, in which the front profiles resemble the letter K. The ridges of these profiles add to the stylish appearance and also increase their structural integrity. Gutter channels are available in 4-, 5- and 6-inch diameters. Downspouts come in corresponding sizes in round or rectangular shapes.



#### SEAMLESS VS. SECTIONAL

All gutters are either sectional or seamless. A seamless gutter means that a straight gutter is made of one continuous piece of gutter material. The only seams are found at corner miters and downspouts. Seamless gutters are considered more durable because the seams of sectional gutters can weaken over 10 or 15 years down the road. This is because constant

Seamless gutters are installed by professionals using specialized machinery that shapes a roll of sheet metal into a continuous length of gutter to fit the house.

#### GUTTERS FOR A HEALTHY HOME



expansion and contraction of the gutters tends to crack the seam caulk of sectional systems. If this happens, the seams have to be re-caulked from the inside with a special gutter sealant.

Seamless gutters are installed by professionals because they require specialized machinery which shapes a roll of sheet metal on site, extruding a length of gutter to a specific measurement that fits the job. (Note: When specifying seamless metal gutters, choose the thickest you can afford; 0.032-inch metal is recommended.)

Sectional gutters are commonly found at hardware stores and home centers. Made of aluminum or vinyl, these gutters are sold in pieces and can be installed by DIY'ers as component systems.

#### **PLANNING**

If installing a new sectional gutter, the first step is to sketch out your system on paper so you can quantify the various components required. Measure your roof line and wall height to calculate the number of 10-foot sections of gutter and downspout you'll need. Next, account for end caps, seamers (which are placed at joints

between gutter sections), inside or outside corner pieces, downspout elbows and end drops (plus flanges for the end drops). You'll need gutter sealant for sealing the joints, sheet-metal screws to connect the downspout sections, and downspout bands to fasten against the house.

#### **LADDERS**

When installing a gutter system, be prepared to spend a lot of time working at potentially dangerous heights. Because so much roof work is involved, it's a good idea to attach a ladder stabilizer to the top of your ladder. Not only does a bracket attachment safely prevent the ladder from swaying from left to right while you're standing on it, but it also provides a 10-inch standoff from the roof line, which makes it easier to access the fascia and gutter without obstruction from the ladder. The stabilizer also rests on the roof, rather than on the shingles, fascia or house siding, so there's no worry of accidental damage from contact with the ladder.

Tip: To provide a bit more elbow room for working, the *EHT* staff uses PVC pipe extensions added to the ends of the bracket.

When installing gutters, a ladder stabilizer will enhance safety and grant you some working room along the roof line. In this photo, we're adding PVC pipe extensions to the stabilizer attachment.

#### **PREASSEMBLY**

To limit your time working atop the ladder, the safest approach is to assemble as much of the gutter system on the ground as possible. But keep them small enough to safely carry up the ladder.

A gutter requires an "end drop" at each downspout location. To join the end drop to the gutter— or to join any gutter section to another—requires a "seamer." The seamer is a 3-inch wide piece of aluminum in a profile that matches the gutter. First, apply



Follow all ladder safety guidelines. This Little Giant SumoStance extension ladder is equipped with a stabilizer at the top and adjustable rail extensions at the bottom. Note all the debris on the ground that we've removed from the clogged gutters.



#### GUTTERS FOR A HEALTHY HOME



Sectional gutters made of aluminum or vinyl can be installed by DIY'ers as a component systems.

gutter sealant to the top side of the seamer piece. Then, wrap the seamer around the butted gutter components from below. The front of the seamer hooks to the front edge of the gutter. The rear of the seamer extends above the rear of the gutter, and you fold this extended flap of metal over the rear edge of the gutter. Use pliers to crimp both the front and rear lip of the seamer tightly onto the gutter. Then, cover the visible seam inside the gutter with a generous bead of sealant.

Similarly, a gutter's end cap will be shaped and sized to match the

Gutter sections and downspout pieces are joined with 3-in. seamer pieces that are glued in place with gutter sealant.

gutter. Install it by caulking the edges with gutter sealant and pushing the end of the gutter into the seams of the end cap. Before installing a gutter section, give the sealant a few hours to dry and gain some rigidity at the joints.

#### **CUTTING TO SIZE**

When assembling the gutter and downspouts, you will likely have to cut some of the materials to length. One basic method is to clamp the material firmly to a couple of saw horses and cut using a hacksaw. A good pair of metal



After they've been wrapped over the joint, the seamers hook over the front and back edges of the gutter, where they get crimped into place with pliers.

snips can also do the job, but it can be tough to keep the cuts clean and straight.

Another option is to use a 12-in. miter saw with a fine-toothed blade turned backwards. The speed of the blade combined with the backwards teeth make a nice, clean cut with very little operator effort. Note: When cutting gutter material on the miter saw, turn the section upside down so the cut enters the more stable underside of the gutter rather than the top edges. And after cutting, return the blade to its original orientation so nobody uses it backward when not intended.

#### **FASTENERS**

To hang the gutter, you can choose from a variety of fastener types, but EHT recommends using hidden bracket fasteners that are held to the fascia with gutter screws. The nail-type fasteners, called gutter spikes, can work loose over time because they split the woodgrain, and the wood swells and shrinks over time. With gutter screws, the threads provide a stronger hold to the fascia, and the rigid bracket that comes with the screws prevent overdriving them and crushing the gutter.



End caps get caulked with sealant and attached to the gutter end with a push-fit connection.



Cuts can be made using hacksaw or a 12" miter saw with the blade turned backward. Cut the gutter upside-down.



The traditional way to mark gutter layout is to use a chalk line. First, safely position the ladder on even ground with the ladder stabilizer firmly supported by the roof deck. At one corner of the fascia, mark the highest point of the gutter run 1-1/4 in. below the dripedge flashing. Unreel the chalk line and move the gutter to the opposite end of the fascia. At that corner, first level the string, and then drop the downspout end about 1 inch per 20 feet and snap the chalk line. This achieves a slope that helps gravity pull water to the downspout locations. (Gutters longer than 35 feet



Use gutter screws combined with hidden bracket fasteners. Space the fasteners along the gutter no more than 2' apart.

should have a downspout at each end, pitching the gutter from the center to each downspout.)

#### **INSTALLATION**

Pre-attach the hidden hangers to the gutter by clipping them in place every couple of feet along the length of the section. Make sure to locate a fastener near the end of each section to minimize stress at the joint locations.

If you do not have a solid wood fascia to hold the fasteners, you will need to locate the rafter tails. These 2-by framing members should be located every 16 inches behind the fascia. Mark the tails along the chalk line and



A chalk line is a traditional tool for marking the layout line for gutter installation, but for this carport gutter we used a laser level along the fascia.



#### GUTTERS FOR A HEALTHY HOME



Make sure to mark your gutter layout so it slopes toward the downspout 1" per 20'.

predrill the fastener holes to prevent splitting the wood with the gutter screws.

If you can recruit a friend or neighbor to help install the gutter, then do so. The gutter sections can be cumbersome for a single individual to carry up the ladder and nail in place.

To install the first section, place the ladder on the roof about midway of where the first section would be installed. Position the end of the gutter section about 1 inch beyond the roof line, and tilt it

slightly to match the slope of the chalk line. Drive the screw of the center fastener into the fascia. The aluminum gutters are so lightweight that a single screw will hold the section temporarily in place, so you can release it. The center screw serves as a pivot point so you can make adjustments to the gutter slope. Once satisfied, drive home the remaining screws to anchor the gutter.

Repeat for the remaining sections of gutter, Start at one end

and work toward the opposite, assembling as much of the gutter on the ground as possible and joining the sections along he eaves by gluing a seamer at each joint.

#### **DOWNSPOUTS**

Once the gutter is installed, you'll need to assemble down-spouts that attach to each end drop, and these often require elbows that extend the downspout from the gutter, beneath the eave, to the house wall where it is secured with downspout bands.

To measure the length of downspout between elbows, temporarily duct-tape an elbow to the flange outlet of the end drop. (The flanges attach inside the end drops using sealant and sheet metal screws.) Align a straight edge with the bottom of the elbow to see where the downspout will intersect the house wall. On the wall, temporarily tape the second elbow. Measure between the two downspout sections to determine the length of downspout needed between the elbows, but don't forget to account for the overlapping slip-joint (not a butt joint like the gutters). Note that each downspout and elbow has one end



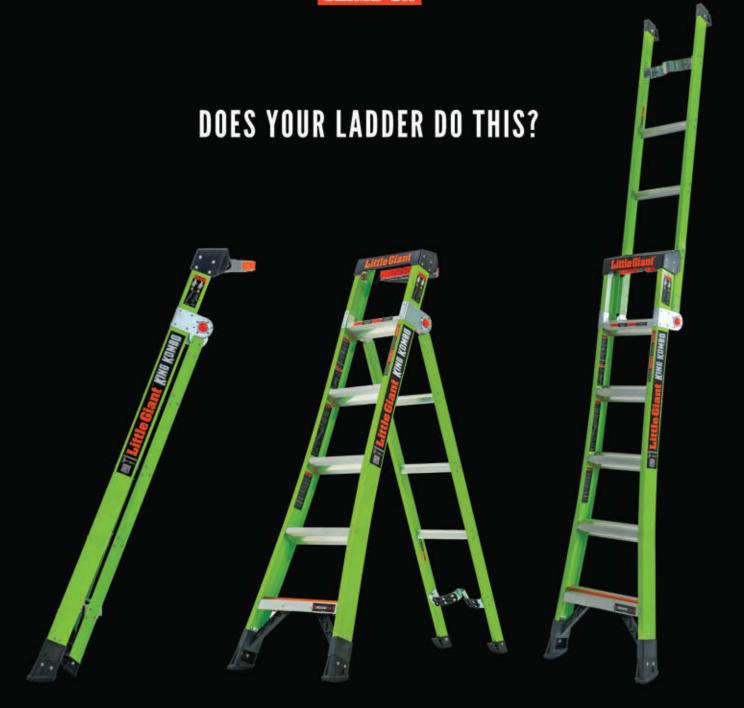
Align the gutter section with the slope.



Drive the gutter fasteners into solid wood. This might require marking the roof's rafter trails and predrilling the fastener holes.



**CLIMB ON** 





#### GUTTERS FOR A HEALTHY HOME

crimped. The parts are joined by fitting the larger end of one over the smaller end of the other—usually 1 inch of downspout overlapping the elbow at each end.

Use the same procedure to determine length of the down-spout along the house wall.

Assemble the downspout at the ground level, driving primed sheet-metal screws into pilot holes drilled at each joint. Be sure to orient the successive pieces so the upper elbow or downspout section always tucks into the lower section—rather than the other way around, which will ensure a leak. Use two screws per joint.

Fasten the downspouts snugly against the wall, with two flexible aluminum downspout bands per 10-foot section using nails or screws. A little temporary duct tape helps to keep the downspout stationary while fastening.

Finally, attach a front or side elbow at the downspout's bottom



Predrill the screw holes in the flange and attach the down-spouts, which must direct water away from the building foundation. Concrete or plastic splash blocks can be installed beneath downspouts. The downspout pictured terminates into an in-ground dispersal sytem.

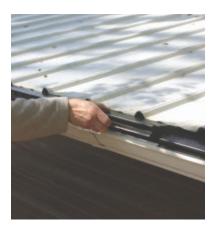


Accumulated organic matter can clog a gutter, leading to all sorts of problems, such as the ant infestation shown here. Avoid these problems with gutter covers.

to direct water away from the building foundation. Concrete or plastic splash blocks can be installed beneath the downspouts at a slope of 1 inch per foot to direct water away from the foundation. In areas with flatter grades, the downspouts should ideally discharge rain water eight feet from the foundation. This can be achieved in a number of ways. Some systems utilize above-ground dispersal, others in-ground. The latter are the least obtrusive, but the most expensive. Generally speaking, the grade around your home should slope about one inch per foot extending at least 10 feet from the building.

#### **PROTECTION**

If your house resides beneath trees, you should strongly consider capping your new gutter with protective covers. Clogged gutters present a multitude of problems. When packed with leaves and debris, gutters don't catch runoff as intended and the water spills over the edges, leading to landscape erosion and even the dreaded foundation leak. Furthermore, all that damp, rotting debris that gets clogged in a



Protective covers from E-Z Gutter simply snap into place against the ridges of the gutter.



If an existing gutter has the old spike-and-ferrule fasteners, you might have to notch the gutter covers with a metal snips to make them fit.

gutter can cause problems at the roof line. The fascia boards that hold the gutter system are often made of wood, and when gutters fill with water, the boards start to rot. The built-up organic matter also provides a prime spot for insect infestation. And in cold climates, clogged gutters can freeze and create ice dams that prevent water from draining off the roof, eventually causing it to seep into the home.

We recently installed some sleek-looking gutter products from E-Z Gutter, which offers a wide variety of gutter protectors to eliminate clogs from debris. The slotted metal surface captures runoff but screens out leaves and debris to keep the



The E-Z Shield product is designed for residential gutters and features a black powder-coat that heats up in sunlight to melt snow and ice.



Finish the installation with a test run of water. Seal all joints and seams with a top-quality gutter sealant like Titebond.

water flowing freely. Installation of the covers could not be simpler. Aside from a ladder, you don't even need tools, because the covers simply snap into place against the front and back ridges of the gutter.

A gutter system will protect your foundation, and the gutter covers will protect your roof. **EHT** 

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(z) Take Bowl



#### **FACT:**

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By Doug Adams

he first thing a DIY stair builder should learn is there are two different classes of stairs. The first class is a mill-made stair, which is usually fabricated in a mill shop and shipped to the job site as a kit, ready for assembly and installation. The second class, a carpenter-built stair, is just that — a stair built on site by a carpenter. This type of fabrication is less expensive and makes perfect sense for stairs that will be covered with carpet. A carpenter-built stair can be dressed up with a hardwood or paint-grade skirt board, and a simple wall-mounted railing is a popular option to complete either type of stair.

When building a stair, functionality is the most important consideration. Extreme accuracy must be used for a safe design. Before beginning construction, you should consult not only the national building-code requirements, but also the local building-code requirements. Some municipalities have stricter codes than others, and checking first will eliminate the need to rebuild later.

The construction materials that you use will dictate the outcome of your finished product, and quality materials will produce a quality job. Don't mistakenly think that if you plan to cover the material with carpet, the quality of construction materials doesn't matter; it does. A lower grade of material that contains knots and voids may cause the

stair framing to crack at a later date. Most lumberyards carry stock used specifically for the construction of stairs.

### LAYOUTS AND CALCULATIONS

After you have determined the proper codes to follow for your municipality, grab a pencil and commit your plans to paper. Sketch a rough blueprint of your staircase.

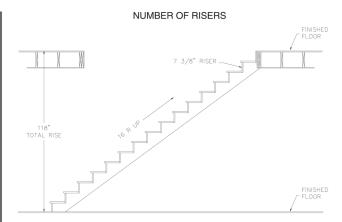
For the purpose of this example, this project will be a straight stair. The building code we are implementing for this project requires a maximum riser height of 7-3/4 inches and tread run of no less than 10 inches.

First, determine the size of your stairwell, making sure to allow for the proper headroom to accommodate the stairs. Headroom is very important; you need to be able to ascend and descend the stair safely without smacking your forehead. Many a stair has been torn out due to incorrect calculation of this item before the stair was built and installed. For this example, the nosing will be a standard 1-1/4 inch, the tread run will be 10 inches each, and the headroom will be 6 ft., 8 inches.

Assuming the distance from one finished floor to the other (total rise) measures 118 inches, find out the number of risers needed by dividing the total finish rise by 7.5. The resulting number equals the number of risers. Then divide that number into the total finish rise.

35

### HOW TO BUILD STAIRS

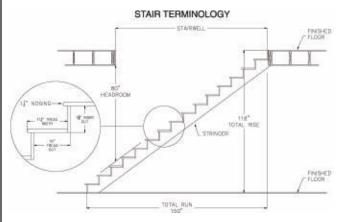


Example: Total rise 118"/ 7.5 = 15.73

— round up the total number of risers to 16

Total rise 118"/16 risers = 7-3/8" each rise

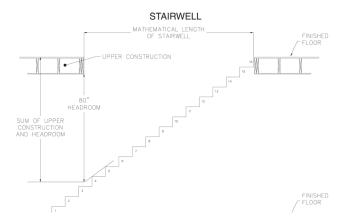
Knowing the number of risers tells you the number of tread -15 (the sixteenth riser will be positioned approaching the upper floor with no tread on top). The run of the stair will then be 15 treads at 10 inches per tread, or 150 inches of total run. To determine the actual total length of the stair, you must add the nosing of the bottom step and the thickness of the top riser.



Example: Total tread run 150" + 1-1/4" nosing + 3/4" top riser = 152" total stair length

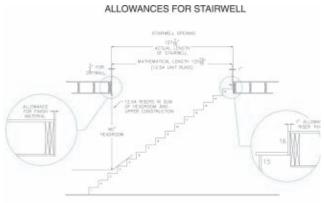
Next, calculate the length of the stairwell, or the width of the upper floor's vertical shaft in which the stairs are located. This is a two-step calculation.

First, account for the required headroom and the upper-floor construction, including floor-joist height, floor thickness and drywall thickness. For the purpose of our example, we will calculate the upper-floor construction to be a total thickness of 12-1/2 inches. This figure (12-1/2 in.) added to the desired headroom height of 80 inches will total 92-1/2 inches. Take this dimension and divide it by the riser height.



Example: 92-1/2" / 7-3/8" = 12.542

The answer (12.542) is the number of treads needed in the clear opening to make headroom. This would mean you now have 2.45 treads that are located under the header. By multiplying 12.542 (number of treads in clear opening) by 10 inches (tread depth dimension) and adding 1-1/4 inch for the nosing and 3/4 inch for the top riser, you will achieve the stairwell length needed for the proper headroom. The result for our example is 127-7/16 inches for stairwell length. Most stairs that are located between two walls have a finished width of 36 inches. To accommodate this finished width, you will need to make your rough opening 37 inches.



The end result of our layout procedure is: 10" run, 7-3/8" rise, 127-7/16" stair well length, 37" stair well width, 36" stair finish width.

#### **CUTTING THE STAIR**

Now that we have directions on paper as to how to build our stair, it is time to begin cutting. Carpenters always measure twice and cut once, a good rule to follow when cutting stairs. Stair building can be expensive; you only want to purchase the materials once.

When you start the project, make sure your work area is clean and well lighted. Lay out the stringers by setting the rise and run of the stair on a framing square. The framing square clamps should be adjusted to 7-3/8 inches by 10 inches.

Next, mark off the number of treads and risers needed for the stair. Always start with the bottom riser and end with the top riser, and draw in the second-floor line. At this point, count the number of risers to ensure there's no layout error. Repeat this procedure for all three stringers.



After you have marked the treads and risers, make any final adjustments to the stair stringers. In order for all of the risers to be in code-compliance, it might be necessary to adjust the top and bottom risers. In our exam-

ple, when a 1-inch-thick tread will be added to the bottom tread cut, our bottom riser will be 1 inch too high. The opposite is true at the top. When we add the top tread, its thickness deducts 1 inch from the exposed riser height. To correct this situation we will deduct 1 inch from the bottom riser cut at the floor-level portion of the stringer.

After you have successfully laid out the stringers, cut off the triangular portions. A power circular saw is the best tool for this task, but be careful not to cut beyond your marked layout lines, which will weaken your stringers. The final cutting of the triangles can be cut out with a handsaw or jigsaw.

Note: Before cutting all three stringers, it's a good idea to "dry fit" the first one you complete inside the stairwell to make sure you've made no errors that need to be addressed.

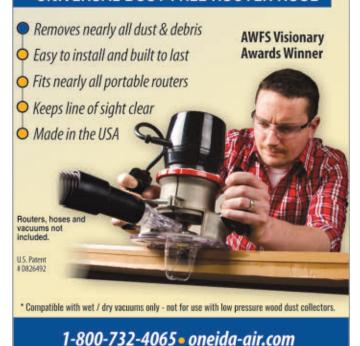


After all three stringers are cut out, place them together to make sure they all match. If you have anything less than three perfect stringers, you may want to go back to the drawing board.

You can now take the left and right



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### **HOW TO** STAIRS

stringer and position them on top of the 1x12 skirt boards. On each skirt board, trace the cut where the stringer meets the floor and the top riser. Cut along these lines, and also make a

plumb cut on the bottom of the shirt board at the height of the baseboard. Attach the skirt boards to the two stringers. These two stringers are now finished. If no drywall is in place, fill out the

stringers to the thickness of the drvwall.

Fasten each stringer with a single nail driven through the back of the stringer, then check the fit for level.

The center stringer is now ready to be mounted to the top header and attached to blocking at the floor. (Note: If you don't have access to the back of the stringers, use a metal hangers to fasten the tops of the stringers.)



Now that your stringers are in place, it is time to double-check all of your cuts. Check the tread cuts for level and plumb. Check your measurements in every direction, left to right and front to back. Do the top and bottom risers allow for the finish tread height? The top riser should offer a tread thickness of more than 7-3/8 inches and the bottom riser should be one tread thickness less. If any stringers are slightly of alignment, shim its bottom level with the others.

After you have double-checked your cuts, nail or screw the side stringers to the studs.

It is now time to rip the risers to the correct heights and nail them into place. Don't forget to glue and



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nail them for long-lasting durability. If your treads are 11-1/4 inches, they will not need to be ripped, just cut them to length, glue and nail into place.



Nail the treads and risers to the stringers. Install by nailing through the risers and into the treads using cement-coated fasteners.

Your stair is now complete except for the wall or handrail. Because our example stair is located between two walls, a wall-mounted handrail is required to meet code compliance. Mount the handrail at 34 inches above the leading edge of the tread. It should be 198 inches in length

### STAIR-BUILDING TIPS

- 1. To create a softer edge where carpet breaks over the tread edge, route the edge with a 1/2-inch round-over bit prior to installing the treads into the stringers.
- 2. If the material is splitting, predrill your holes. This can also help prevent squeaking in the future.
- 3. Glue blocks can be placed at the underside between the tread and riser intersection.
- 4. Another very important but sometimes overlooked step is to seal the underside of your stair. This will prevent the stair from squeaking and warping.

### KIT-BUILT SPIRAL STAIRS FROM ARKÈ

If you're looking for a spiral or modular staircase in an easy-to-build kit, Arkè Stairs has you covered with all-in-one complete units. Treads, landing, balusters, handrails, hardware and accessories included. There is nothing to paint, weld, stain or seal, and the kits are in stock for immediate delivery. The standard spiral staircase kit has a 360° rotation, and by adding or subtracting risers, the rotation will change by approx. 30° per riser.

The SKY030 spiral staircase, available in three diameters—47, 55 and 63 in.—is manufactured in steel with a particular treatment (Sendzimir process), which consists of galvanizing steel using a small amount of aluminum in the zinc bath to produce a coating with essentially no iron-zinc alloy. This process guarantees high resistance and durability. In addition, the metal is powder coated. The final result is a staircase specifically made for outdoor installations because of its resistance to atmospheric elements. The landing platform for the spiral staircase is a triangular/universal design, and the staircase can be turned in either a clockwise or counterclockwise rotational turn to suit your home. Learn more at www.arkestairs.com.



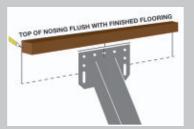
### HOW TO BUILD STAIRS

and contain a wall rail bracket screwed into a stud or backing, every 4 feet. In the case of an open rail section to one side of the stair, it is easiest to mount the balusters on an angle cap. Stair building is an art. Many experienced carpenters have difficulties building stairs. Be patient, and with a little practice, you'll be making your way up in the world on the steps you've just built. **EHT** 



### ARE FLOATING STAIRS A DIY PROJECT?

Floating staircases are designed to hide the supporting structure of the staircase, which gives the impression that the stair treads are floating.
Floating stairs remove visual obstructions and maximize living space. They can be installed indoors or outdoors, for homes, businesses or remodels. They can be paired with several different types of railing and handrail options—often installed with glass, cable or rod railing. Many of these options come with components that can be hidden in the posts themselves to enhance the illusion of floating.



Instead of being fixed to a substrate on either side of the steps, the stringer (or stringers) of floating stairs supports the staircase from below. Suppliers such as Viewrail engineer and manufacture each section of your staircase to your specifications and ship it to you clearly marked and labeled to ensure quick assembly on site. You'll receive your straight stair stringer in one piece, and all the tread brackets will come with bolts, so it's simple to bolt the entire system together. Although the manufacture of the floating stair is not a DIY job, its installation can be, and a two-person team of DIY'ers should be able to complete the job by following Viewail's online instructional videos. Learn more at www.viewrail.com.



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# COUNTERTOP



countertop is among the most prominent features of a kitchen or bathroom, the work surface around which all activities revolve. Because it's such a central feature of the room, homeowners want a countertop that complements the interior décor. Of course, styles and tastes change over time, and that holds true for countertop designs. Countertops are used on a daily basis and subjected to a lot of wear, which can eventually require a new surface. When a homeowner wants a change to their countertop, however, they're often confronted with the high cost of labor and materials for replacement.

To provide a way to spruce up a countertop that is DIY-friendly and easy on the pocketbook, manufacturers have introduced a variety of coating products to renew the existing surface. Here's a roundup of some of the options currently available.

### **SPREADSTONE COUNTERTOPS**

The SpreadStone countertop kit from Daich Coatings contains a liquid product that rolls on top of laminate surfaces and achieves the look of a speckled granite countertop. The kit it is made with real stone and goes on fast, requiring no creative skill. A mix of carefully combined stone ingredients, SpreadStone has been used for more than 20 years as a heavy-duty decorative



coating for concrete floors, walls, columns and more. Now, with the Countertop Finishing Kit, SpreadStone gives a countertop excellent resistance to stains, heat, impact, abrasion and household cleaners—just what you would expect from real stone. The

### **COATING A COUNTERTOP**



SpreadStone contains genuine stone and simply rolls onto a countertop to achieve a new surface.

generous SpreadStone Kit means there is no reason to stress about having adequate supply, and if you still have some product left, you can use it to cover a small table or other surface.

SpreadStone is not a faux finish paint product requiring an eye for detail. You simply roll it on. The finished result is far more durable than paint. The entire SpreadStone system is pre-mixed and ready to go with unlimited working time. A roller and brush are the only tools necessary.

Daich offers the original SpreadStone Countertop Kit as well as the Mineral Select Kit. The differences lie in their finished appearance and coverage. The Mineral Select Kit is made with a modified blend of stone and mineral ingredients that goes on slightly thicker for interesting visual appeal with natural mineral accents. Coverage rates for the Mineral Select kit run between 30 and 35 sq.ft. To be safe, when planning for your project, base your order on 30 sq.ft. to ensure you have enough product. The original SpreadStone Countertop Kit is made with an alternate stone blend that delivers a soft. multi-colored speckled finish and provides higher coverage at 50 sq.ft. Both products offer the

same easy application and level of performance.

Want your new SpreadStone surface dressed in a glass-clear topcoat? Daich now offers the new SpreadStone Countertop Clear Coat for the smoothest highgloss polished stone finish. This easy-to-apply epoxy kit adds a whole new look and feel to the Original or Mineral Select Countertop stone finishes—as well as over other existing interior countertops and tables. Visit www.daichcoatings.com.

### RUST-OLEUM COUNTERTOP TRANSFORMATIONS KIT



The Rust-Oleum Countertop Transformations Kit eliminates the cost and stress of a total countertop replacement. The kit is suitable for use on any laminate countertop in your home, requires no special skills or tools, and covers up to 50 sq. ft. The EHT staff used this product to resurface a bathroom countertop. The system requires sanding, rolling an adhesive base coat, spreading decorative plastic chips, and then sanding the chips to a smooth continuous surface. Finish up with a protective top coat, and you have a glossy new countertop with a contemporary stone-like appearance. This is a complete DIY kit with superior surface adhesion, and

the protective coating inhibits growth of mold and mildew. Visit www.rustoleum.com.



The Countertop Transformations Kit from Rust-Oleum requires scuff-sanding the existing countertop surface.



The next step is the application of an adhesive base coat.



Next, liberally coat the adhesive with decorative chips. The chips are applied just like when using a seed spreader. (The spreader is included with the kit.)



Once the glue has dried, sand the chips smooth with a diamondembedded abrasive pad.



Roll on a protective top coat for a glossy finish to your new countertop.



After completion.

### **ABOGLASS**

Want a wooden countertop or restaurant quality bar top?

Applying Aboglass High Build Bar Top Coating to a wood countertop will highlight the stunning beauty of the woodgrain. This high-gloss epoxy coating enhances the natural look of wood and gives it a deeper,



dimensional appearance with exceptional clarity. It also protects wood from spills, contaminants and abrasion. Aboglass is a two-part product (liquid epoxy and hardener) that contains no water or solvents. Apply the coating up to two inches thick. Use on bar tops, tables, vanities, boats and more. Aboglass is also great for decoupage and encapsulating artistic images and textures.

To apply, first clean the wood surface free of dirt and dust. Slowly mix together equal volumes of resin and hardener. Pour or brush the Aboglass onto the surface. Use a spreader or brush to cover the entire surface. If surface bubbles appear, use a heat gun,





blow torch or needle to eliminate them. Allow the coating to harden at least 1 hour at room temperature before moving, and two to three days before use. Recoat as desired within 24 hours of hardening. For maximum rigidity, heatcure the surface after hardening for 1 hr. at 120°F. Learn more at www.abatron.com.

### RUST-OLEUM COUNTERTOP COATING



If you're primarily concerned with a change in color, Rust-Oleum Countertop coating can renew laminate countertops, cabinets and furniture with a countertop paint. The coating also contains HomeShield Antimicrobial Protection which will protect the painted surface by inhibiting the growth of mold and mildew and other odor- or stain-causing microbes. This is



### **COATING A COUNTERTOP**

an easy-to-apply, one-part product that is scrubbable, washable, moisture- and chemical-resistant against common household items. One can of base covers up to 25 sq. ft., and the coating is tintable to 16 colors. Clean it up with mineral spirits.

### ARTISTIC PATTERNS WITH EPOXY



WiseBond offers a wide range of epoxy colorants, and even glow-in-the-dark additives.

Epoxy-coated countertops are rapidly growing in popularity due to the almost limitless color patterns and combinations made possible by creatively combining various products in artistic ways.

Some suppliers offer customizable kits to create a fresh, new epoxy surface without the high cost or demolition. To order a kit from countertopepoxy.com, first determine the amount of epoxy needed for coverage and choose your base color (the overall color of the countertop). Next, choose any metallic powder you'd like to incorporate. These accent colors can be mixed into the epoxy or sprayed over the top to make the countertop look more like natural stone. Finally, add another clear coat, which is not required but can make the countertop appear more three-dimensional, very smooth and even more durable.

The basics of application involve mixing the two-part epoxy with the

base color and "flood coating" the entire countertop surface.

Thoroughly coat the countertop, allowing the epoxy to run over the edges. Heat the surface with a propane torch to help level the epoxy and release air bubbles.

Torch evenly and never let the heat stay in one place. Move the torch in even, overlapping strokes or the epoxy surface will burn. This step not only levels the epoxy and releases air bubbles, but it can also give the finished product a marbled effect.

After you level the base coat, you can mix in accent colors by adding metallic mica powders to











Photos courtesy www.stonecoatcountertops.com.

91-percent isopropyl alcohol in spray bottles. Shake often before and during application to keep the colors suspended. Use this mixture to create veins, marbling, granularity and contrast. Layer colors on top of each other or apply them in random patterns. To make veins, drag accent colors through the epoxy surface with a paint stick. Create swirls by mixing two colors over each other. To create granular effects, apply the accent colors from a distance with a spray bottle, adjusting the nozzle for a fine or coarse spray. To enhance the effect, you can apply veining or glitter to a final clear coat, which adds dimension and detail to the new surface.

The range of colors and patterns is really only limited by the user's imagination. For a variety of step-by-step tutorial videos on applying various effects with epoxy, visit



www.stonecoatcountertops.com. The company distributes a wide range of epoxy products and supplies as well as offers tips and tricks for special effects. Learn how to create a "Severed

Marble" pattern. Maybe you'd prefer the look of "Faux Quartzite,"
"Exotic Stone," "3D Metallic,"
"Granite," "Sponge Technique,"
"Crackle Effect" and much
more. EHT

### DIY TIP FOR COUNTERTOP COATINGS

While these aftermarket coating products can achieve a durable "like new" countertop surface, you will generally see better long-term results when applying to flat surfaces and bullnose countertops (rather than applying to countertop surfaces with a "sharp" or square edge). In our experience, the outside corners of a square edge are more susceptible to wear, cracking and impact damage, and will probably require touch-up repair in the future.

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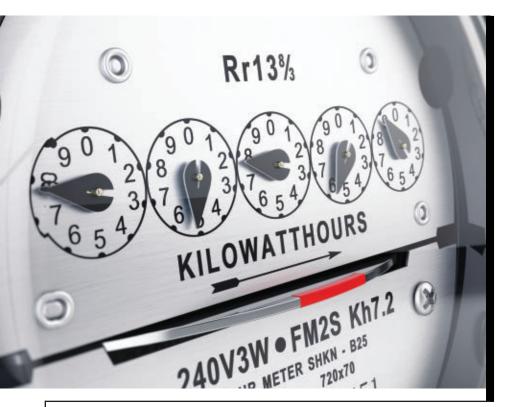






### The Big Draw of Tankless Electric Water Heaters

Is a Tankless Water Heater right for Your Home?



ankless water heaters offer an energy-efficient option for homeowners, and some new models can reduce home waterheating costs by up to 50 percent. Tankless heaters offer on-demand convenience, because these heaters don't have a holding tank. Water is heated on an as-needed basis, not heated and stored for hours like a traditional tank. This reduces energy loss from sitting water and also guarantees a warm shower, even if you're the last person in line. Plus, tankless heaters are powerful, vet compact, Most can be wall-mounted inside or outside the home. Although sizes vary, the average tankless unit is about 24 inches high and 18 inch-

es wide—significantly smaller than the traditional 40-gallon tank. Plus, with today's tankless units you can dial in the water temperature with a digital controller.

Thanks to advancements in design and technology, some units even offer self-modulating "smart" technology. For example, the EcoSmart tankless water heaters from Rheem will adjust how much energy input is needed based on how much hot water is demanded.

Both gas-fired and electrical water heaters are available in a wide range of sizes. Note that gas-fired tankless heaters require the exhaust and air-intake to be vented outside, separately from all

other appliances, which can complicate installation.

Electric tankless heaters require no venting, but they do require significant available power supply. For example, the EHT staff recently explored installing a new tankless heater at one of our project houses. The home in question had a separate mother-in-law suite in the basement, which was operating one of two separate tank-style heaters to accommodate the different dwellings. The downstairs suite seemed like a prime candidate for an EcoSmart Eco-18 unit, sized for two bathrooms for up to three people. However, after consulting with an electrician, we determined the tankless unit was not a good fit for the home.

Why?

Because, although the electric tankless units do conserve energy when the heating coils aren't active, once they do activate, they draw a great deal of electrical power in short intervals. The Eco-18 model required two 40-amp breakers for installation, and it had a 75-amp draw. According to the electrician we consulted, the house in question was already approaching maximum 200amp electrical capacity before adding the new tankless unit. He explained that if the tankless unit were to kick on at the same time as another high-amp appliance, such as an air-conditioner, then the lights in the house would begin to flicker and the electrical supply would be too strained to power everything.

"Okay," we said to the electrician. "How much would it cost to increase the electrical capacity of the home?"

He answered, "thousands," and then went on to grouse about municipal permits, city inspectors, etc.

So, while the new electric units can indeed offer cost savings, they require a large amount of available electric current, and you should be aware of your capacity when considering one for your home.

### **EVALUATING A HOME'S ELECTRICAL SUPPLY**

Homeowners should have an electrician evaluate their home's available power supply before

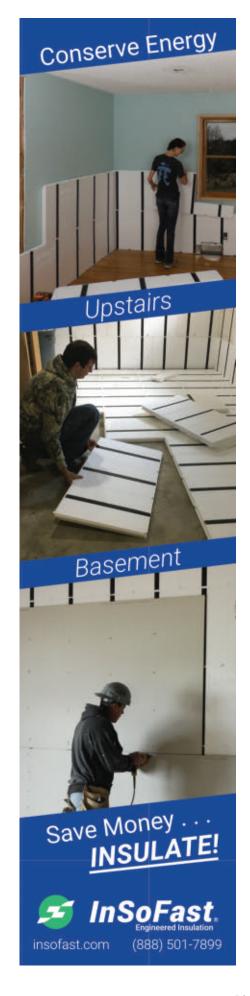
selecting a new electric tankless heater—particularly for the larger sized units—to ensure it will be an appropriate fit.

The amperage of a house's electrical service determines how many appliances you can run at the same time. A 200-amp service allows operation of multiple appliances at once, while a 60-amp service won't provide enough power to run an electric hot water heater, air conditioner and hair dryer simultaneously.

The size of your electrical service, can be determined by examining the main components of your house's electrical distribution system—the wire, the conduit, the meter, the panel and the main breaker. The electrical



The EcoSmart Eco-18 model requires two 40-amp breakers for installation and has a 75-amp draw.



### **SPOT LIGHT**



conduit is a pipe that enters the house either from the underground main electric wire or from above-ground service. A 2-inch conduit can hold wire for 200-amp service; 100-amp service needs a 1-1/4-inch conduit, and 60-amp service uses a 1-inch wire. However, many conduits are oversized, so a 2-inch conduit might hold a 60-amp service.

Visible service wire can also provide an indication of electrical capacity. Six-gauge copper wire indicates 60 amps, four-gauge indicates 100 amps, 2-gauge indicates 125 amps, 1-gauge indicates 150 amps, and 2/0

gauge indicates 200 amps. (Warning: Do not touch any exposed wiring.)

Also, the electrical meter might have the amperage rating printed on its face or body. On your electrical panel, look for a label that indicates its rating, which might have been provided by the manufacturer or attached by an upon installation.

The amperage rating on your main breaker or fuse should also give some indication. The main breaker will be the largest breaker you have and should have its

An electrician should evaluate the electrical distribution system of your home to determine your available power supply.

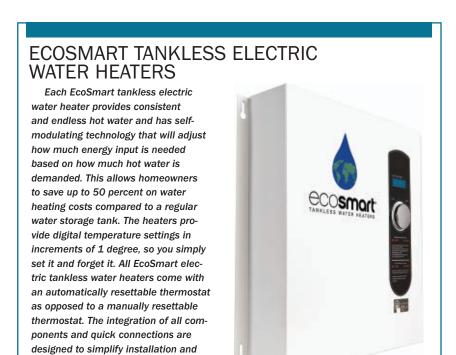




capacity written on it or adjacent to it.

We should stress that it's not advisable for a homeowner to be measuring the wires in their breaker panel. The most accurate way to determine the amperage rating is to consult a professional electrician to look at your electrical meter and the labels on your main breaker or fuse. Sometimes the wire size might indicate one thing while the actual amperage is different coming from the source.

Your electrician should compare all the information to determine the lowest amperage rating. The lowest number is your home's electrical service capacity, and this information will help you select a tankless electric water heater that makes sense for your home. **EHT** 



usage. Learn more at www.ecosmar-

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# PRODUCTS

### **WISEBOND EPOXY KITS**

DeckWise, The Ipe Clip Fastener Company, known for their hidden deck fasteners and hardwood finishes, now offers WiseBond Commercial Grade Epoxy Kits and colorants. WiseBond Deep Pour Epoxy is a premium commercial-grade thick casting resin allowing up to 2 inches of depth in a single pour, perfect for live-edge river tables and large object casting applications. This epoxy is specially formulated to cure to a crystal clear water-like appearance and designed for a long, slow cure to prevent cracking and shrinkage. This epoxy has been engineered to be low-odor, zero-VOC and have a slow exothermic reaction to make it easy to work with. Both Pros and DIY artisans will love it.

The WiseBond Bar & Table Top Epoxy is a super-wet gloss epoxy for bars, table tops and creative countertops. This table flood coat epoxy is a self-leveling, ultra-high gloss finish and is UV stable for durable surface



coatings. It has an extremely low odor and is safe for use indoors with no additional ventilation or bulky respiration equipment. This epoxy resin produces a rich, clear glass-like appearance and protects surfaces from scratches and wear, perfect for finishing river tables or live-edge table projects as well.

When used in conjunction with epoxies, the company's WiseColor powdered colorants are an amazing way to add depth and vibrancy to any river table, thick pour for objects, turning projects, wood and concrete tables or art projects. Available in 50 unique colors, including an impressive selection of glow-in-the-dark powders to illuminate your project like no other. All colorants are available in three sizes and can be mixed and combined to make whatever artistic creations you can imagine. Visit www.WiseBond.com.

### HOMERIGHT ELECTRO-TORCH

The *EHT* staff is a big fan of grilling with charcoal, but we're not a fan of struggling with stubborn charcoal that won't easily light. Enter the HomeRight Electro-Torch. Without matches starter fluid, the Electro-Torch lights indoor and outdoor grills, woodburning fireplaces and stoves. Using only electricity, heat and air, it lights fast and since there's no flame, wind is never an issue. The torch will light a charcoal

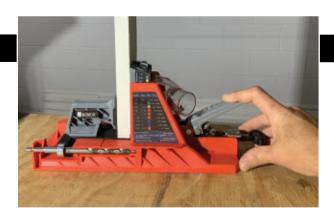


grill in less than three minutes and since no

lighter fluid is required, cooking is chemical-free so food tastes better. It works by generating superheated (1500 degree) air to spark the fire, and then a built-in blower fans the flames for a robust fire. Both functions are controlled by a simple red toggle switch. In addition to starting fires, the blower feature is handy for restarting fires or keeping them going when additional charcoal or wood is added. An automatic thermal shut-down feature protects the unit from heat damage. So get one and get to grilling. Visit www.homeright.com.

### **DRYWALL AXE**

This easy-to-use tool helps drywall installers complete the job faster and with more accuracy. The Drywall Axe is a time-saving 3-in-1 cutting tool used to measure, mark and cut drywall. It has a built-in, heavy-duty measuring tape with a secure lock and guide for accurate and consistent measurements, a retractable utility blade for cutting or scoring material, and a built-in holder with a carpenter's pencil for marking cuts (ideal for rip cuts). It weighs less than a pound, and the durable ABS head and rubberized handle maximize balance and control. As a bonus, the handle flips open to reveal a storage area with four extra blades. Simply measure with the tape, lock it in place, transfer it to your drywall (or other material), then mark, score or cut with one motion, in a straight line. With this tool you can measure once and cut once, eliminating the need to measure by hand, use messy chalk lines or straight-edges. You can also use the Drywall Axe for materials like floor tile, carpet, linoleum, wood flooring, insulation, wood paneling, plywood, ceiling tile, roof shingles and more. It's currently available on Amazon.com and



Amazon.ca, with international shipping options.

### **AUTO-JIG FROM ARMOR TOOL**

Pocket-hole screws are a great way to make a strong wood joint fast. Setting up the pocket-hole jig, however, is usually a multi-step process, requiring you to adjust the drill guide and the bit's collar to an exact depth based on the thickness of the workpiece. The new Armor Tool Auto-Jig is a fully automated system that self-adjusts your drill-guide setting and drill-bit collar based on the thickness of the workpiece. No more manual setting, measuring or adjusting. The Auto-Jig accomplishes this by housing the bit collar in the clamping jaw, so it

slides up and down the stationary bit shaft as the jaw adjusts to clamp the workpiece. As the jaw adjusts, the drill guide also slides up and down to accommodate the workpiece thickness. Once the workpiece is tightly clamped, each component of the jig system is calibrated to drill an angled pocket hole to the exact depth needed. Plus, the color-coded screw system with Color-Coat technology makes it easy to match the screw size and head to the thickness and depth of the pocket hole, while the color coating itself offers anti-corrosive protection to your workpiece. This system is awesome. Visit armor-tool.com. – M. Weber

### **GENERAL TOOLS NEW MOISTURE METERS**

General Tools offers a line of feature-rich moisture meters at an affordable price. The newest introductions include the pin/pinless moisture meter, MM9 (under \$50); a digital pinless moisture meter, MM8 (under \$45); and a basic pin-type moisture meter, MM7 (under \$35). The versatile MM9 pin/pinless moisture meter gives the user the best of both types. It can easily and quickly scan large areas of drywall or wood with the pinless pad sensor. Once moisture patches are detected, it easily converts between pin and pinless with only the flip of the cap to expose the pin sensors for more exact moisture content readings. Key features of all three include an improved ergonomic handle design that conforms to the user's hand for a more comfortable user experience. Plus, they all feature a hi-visibility, white-on-black screen, providing easy readability from any angle—a feature that would cost up to 44 percent more on competing moisture meters. Visit www.generaltools.com.

# PRODUCTS

### CRAFTSMAN V20 7-1/4" SLIDING MITER SAW KIT

A lightweight and easy-to-carry answer to your on-the-go miter saw demands, the new Craftsman 7-1/4" Sliding Miter Saw is part of the V20 cordless system. This 20V max miter saw (CMCS714M1) has a powerful 3,800 RPM motor for cutting 2x dimensional lumber, hardwoods, baseboard and trim. The slide capacity allows for 8 in. cross-cuts at 90 degrees and 5-1/2 in. cross-cuts at 45 degrees. Nine miter detents and a single-bevel blade allow for angled cuts.



Cut 3-5/8 in. nested crown and 3-1/2 in. baseboard vertically. With the 20V Max lithium-ion battery (included), users can make up to 585 cuts in 3-1/4-in. MDF base molding on a single charge. An LED light eliminates shadows and provides an accurate cut line that is easy to read. The saw's lightweight 21.8-lb. design coupled with the side carry handles make this unit extremely portable around the jobsite. Visit www.craftsman.com. – M. Weber

### **ROK-IT CHAIR FROM KIJARO**

It's been a long, hot summer, and I've been working on a lot of projects outdoors. I needed a handy chair for taking breaks and tried out the new Rok-It chair from Kijaro. This is a compact, lightweight chair that is easy to fold up for transport and





storage. The downfall to many similar "umbrellastyle" chairs is that comfort is sacrificed for the sake of convenient portability, but

that's not the case with the Rok-it. The chair affords a comfortable seating posture and has a mesh back to keep you cool, plus padded armrests and even a cup holder. To top it off, the rear feet include shock-absorbing pistons that enable "rocking chair" performance. The Rok-It includes a canvas bag with carrying strap, so you can toss it in your pickup bed and carry it easily to the next jobsite (or tailgating party). Visit www.kijaro.com. - M. Weber



### U.S. HAMMER GAS-POWERED JACKHAMMER

U.S. Hammer has developed a line of gas-powered jackhammers (the Gas Breaker GB-70 & Gas Breaker GB-90) for small, medium, and large jobs in and out of the construction industry. It needs no air compressor, which is typically a \$20,000 add-on to the price of a pneumatic jackhammer. And because U.S. Hammer's gas-powered jackhammer has no

need for a compressor, it's easily stowed in any truck, making it an ultra-portable solution. According to the manufacturer, it's 50 percent more powerful than any existing gas or electric jackhammer, produces much less noise than a pneumatic hammer, and comes CARB- and EPA-certified. Plus, it's driven by a Honda motor that relies on less than 4 gallons of fuel for an 8-hour workday. Visit www.ushammer.com.



#### **GODDARD SPIRAL STAIRCASES**

For a completely customized staircase design, Goddard Manufacturing specializes in handcrafted spiral staircases built to your specifications. Choose from several different styles of spiral stairs to fit almost any application, and the professional craftsmen at Goddard will try to create the design you want. Custom options include a variety



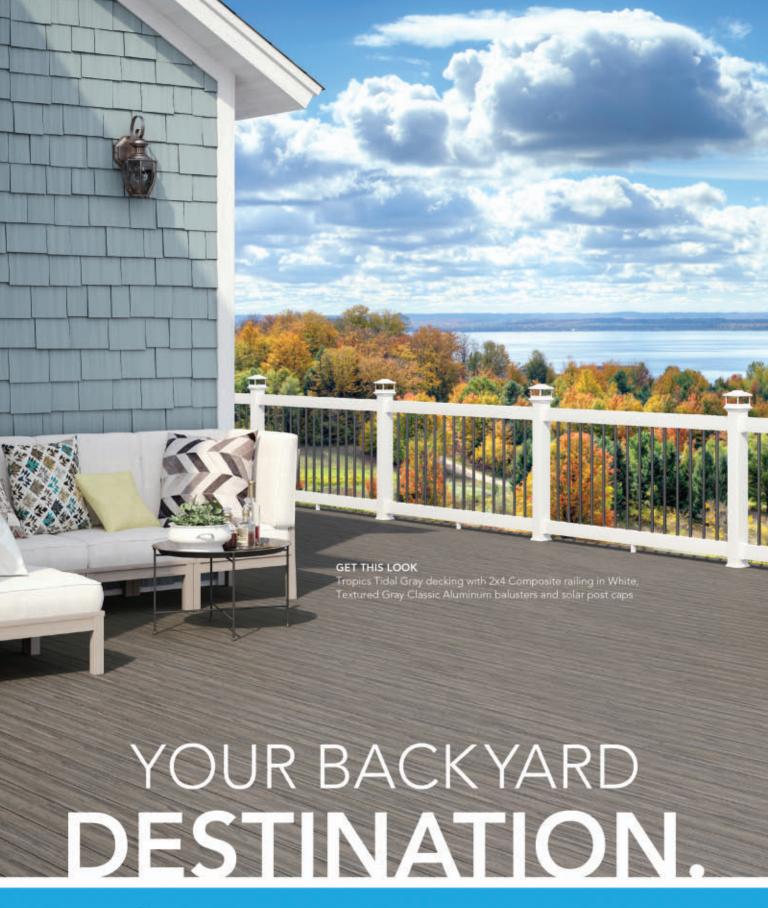
of designs in handrails, treads and decorative balusters. These unique custom spiral staircases are created using oak, hickory, steel and other materials for both interior and exterior. If you're looking for something unique in your spiral staircase, such as oak treads, all-steel treads, red oak handrails, all metal rails, or anything you can imagine in a spiral staircase that you don't see advertised by Goddard, just ask the reps at the company. They will work with you to create the custom stairs you want, made in the USA in Logan, Kansas.

To get the most strength, cleanest lines, and best-looking spiral stairs possible, the staircase will be welded into one solid structure is usually shipped as one piece. (Wood spiral staircases are disassembled and boxed for shipping). If the area is ready for the spiral stairs to be installed, two people can usually install it in less than an hour. The All Wood Spiral Staircase is shipped disassembled and takes four to six hours to reassemble. Visit www.spiral-staircases.com.





Armstrong-Clark	Muro40
B'laster	O'Berry Enterprises50
BetterVent50	Oneida Air Systems37
Bigfoot Systems	Putnam Rolling Ladder CoIBC
Calculated Industries	Rapid Set16
Camo FastenersIFC, 1	Red Hill Corp51
Cats Paw by Mayhew Tools51	Roamwild Car Crack Vac18
CedarSafe	Roamwild Multi-Pullsaw Pro18
Deck2Wall Spacer55	SawStop41
DeckoratorsBC	SnoBlox/SnoJax29
Drywall Axe10	SolidSurface.com
E-Z Gutter27	Sweepovac
Flame Engineering	TG Tools
Goddard Spiral Stairs	The Spoutoff
Hi-Velocity Systems	Titebond
InSoFast9	U2 Fasteners5
InstaTrim8	Utilistrap55
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