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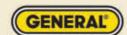
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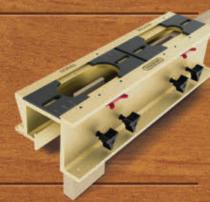




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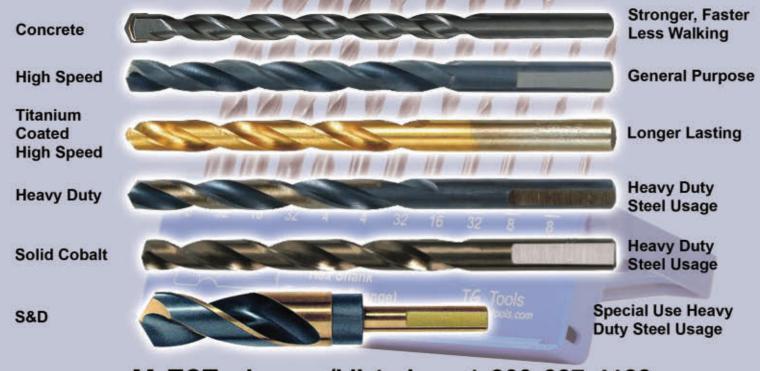
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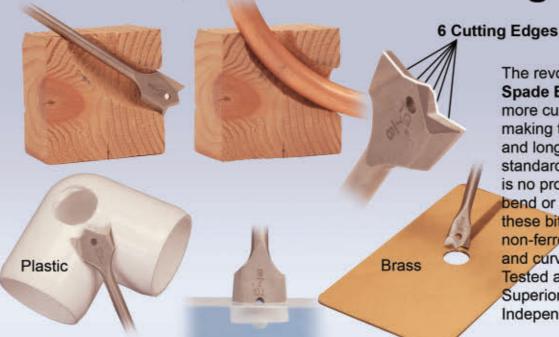


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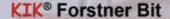
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From The Editor-In-Chief

'm writing this editor's letter during the holiday season, not long after a particular news story caught my attention. During a Christmas gathering, twenty members of a Kentucky family gathered on an exterior staircase when—bam!—the thing collapses beneath them. Eight people were injured in the fall, with six requiring a trip to a nearby hospital.

"The person at the top probably fell about 20 feet," the director of the Hardin County EMS told Yahoo News. "All of our ambulances that were on duty that day responded."

Two things struck me about the story. First: Why would you stack so much weight on the stairs, especially on an outdoor case where you can plainly see how it's built? Second: These folks probably saw the construction but didn't have an understanding of its limitations.

The news report failed to show the fallen staircase but did show footage of "similar" staircases in the neighborhood, some of which had no central post to support the outer stringer. If that is how the collapsed case was built, then it's no surprise the thing fell apart under such stress. Was rotted wood or inadequate fastening a factor? The story didn't say.

I'm unclear on the gross weight capacity of the average set of residential stairs. However, even if the family was fit as a fiddle with ten women at 130 lbs. and ten men at 170, you're talking about 3,000 lbs.—and that's a heavy load.

The good news is that no one was seriously injured, and two women who were pregnant happened to be positioned at the bottom of the case. One of them was taken to the hospital where she gave birth to a healthy child. So, in the end, the family lucked out.



This story is a prime example of why it's such a smart idea to gain an understanding of how your home is built and how the different components perform as a system. Not only is this valuable knowledge when making improvements and repairs, but it's a great way to learn just what your house can do—and what it can't.





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> SUBSCRIPTIONS Customer Service 888-587-8911

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LP Sand	M-158	
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LP Wheat	M-034	
LP White	M-061	

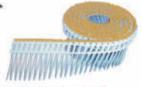


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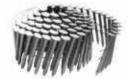
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. I need to replace a dimmer switch. Are the switches universal?

• Dimmer switches are rated to handle a specific maximum wattage. For example, if the dimmer needs to econtrol five 100-watt bulbs, you'll need a switch rated for at least 500 watts. If you're swapping switches without changing light fixtures, then the wattage rating of new switch should be at least as high as the old one.

How Do I Replace a Circuit Breaker?

• If you've already tripped the circuit breaker and the circuit did not reactivate, then you likely have a bad breaker or possibly a short somewhere in the circuit. First unscrew the face plate of the panel box and remove it. Take note of the two wires connecting to the side of the breaker and remember their positions. With the breaker in the OFF position, use a screwdriver to loosen the screw holding the white wire. Remove the wire, apply a wire nit to the end and bend it out of the way. Then loosen the second screw and bend the colored wire out of the way. The breaker is held in place by the contact points that clamp onto the main circuit. Circuit breakers vary in design, but generally they "snap" in and out of place, and sometimes they must be tilted at an angle to remove and install. Snap the old breaker out of the box and replace with a new, matching breaker by reversing the removal procedure. You should be able to feel the breaker snap over the circuit, indicating a firm connection. Replace the wires in their original position, colored first, white second. Tighten the wire screws then fasten the faceplate back onto the box securely. Flip it ON, and the new breaker should be ready for use.



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Placing an open box of baking soda in the fridge is an old standby method to get rid of a bad smell.
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page 82. EHT



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Choose the Right Size Generator



By Matt Weber

electing the right generator should be a balancing act. You'll need adequate electricity to power your equipment arsenal, with greater output required to run large appliances or multiple tools simultaneously. High-power generators, however, cost more to purchase and require more room for storage due to the larger unit size, so there's no need to invest in the extra capacity if you won't need it. The following is some expert advice on matching the right size generator to your power equipment needs, provided by the technicians at Northern Tool & Equipment.

POWER LOAD PLANNING & MANAGEMENT

One important rule of thumb is never to exceed the rated wattage capacity of your generator. Overloading may cause serious damage to the generator and attached electrical devices, and may also result in a fire. For this reason, your generator must be sized properly to provide both the running and starting (surge) wattage of the devices you will be powering.

Before using your generator, determine the running and starting wattage requirements of all the electrical devices you will be powering simultaneously.

The sum of the running and starting wattages of the devices being powered must not exceed the continuous output rating of your generator. (The continuous output rating of your generator should be listed in the "Specifications" section of your generator manual.)

Note that devices without electric motors, such as light bulbs, radios and televisions, have the same running and starting wattage. However, devices with electric motors, such as refrigerators, compressors and hand tools, typically require a starting wattage as much as 3 to 5 times greater

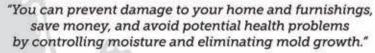




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than the running wattage.

The running and starting wattage requirements are often listed on a device's nameplate. If wattage is not given on the device's nameplate, the wattage may be calculated by multiplying the nameplate voltage by nameplate amperage, Watts = Volts X Amps.

Example conversion to watts: 120 Volts X 5 Amps = 600 Watts

If only the running voltage is given on the nameplate for a device with an electric motor, the starting wattage can be approximated to be three to five times the running wattage.

Estimates for the running wattage requirements for common devices are listed in Table 1.

Table 1

Device	Running Watts	Device	Running
Air conditioner (12.000 BTU)	1700 (a,b)	Jet pump	800 (a)
Battery charger (20 Amp)	500	Lawn mower	1200
Belt sander (3")	1000	Light bulb (100 Watt)	100
Chain saw	1200	Microwave oven	700
Circular saw (6½")	2000 (a,b)	Milk cooler	1100 (a)
Coffee maker	1800 (a,b)	Oil burner on furnace	300
Compressor (1 HP)	1400 (a,b)	Oil-fired space heater (140,000 Btu)	400
Compressor (3/4 HP)	1800 (a)	Oil-fired space heater (85,000 Btu)	225
Compressor (1/2 HP)	1400 (a)	Oil-fired space heater (30,000 Btu)	150
Curling iron	700	Oven	4500
Dishwasher	1200	Paint sprayer, Airless (1/3 HP)	600 (a)
Edge trimmer	500	Paint sprayer, Airless (handheld)	150
Electric nail gun	1200	Radio	200
Electric range (1 element)	1500	Refrigerator	600 (b)
Electric skillet	1250	Slow cooker	200
Furnace fan (1/3 HP)	1200 (a)	Submersible pump (1-1/2 HP)	2800 (a)
Freezer	800 (b)	Submersible pump (1 HP)	2000 (a)
Hair dryer	1200	Submersible pump (1/2 HP)	1500 (a)
Hand drill (1")	1100	Sump pump	600 (a)
Hand drill (1/2")	875	Table saw	2000 (a)
Hand drill (3/8")	500	Television	500
Hand drill (1/4")	250	Toaster	1000
Hedge trimmer	450	Vacuum cleaner	250
Home computer	150	VCR	70
Impact wrench	500	Water Heater	3000
		Weed trimmer	500

- (a) Hard-starting motors require 3-5 times the rated running watts
- (b) For extremely hard to start loads such as air conditioners and air compressors, consult the equipment dealer to determine maximum wattage





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To calculate the running and starting wattage requirements for the devices you will be powering, follow these steps:

- 1. Make a list of all electrical devices you will be powering at the same time with the generator.
- 2. List the greater of the running or starting wattage next to each device as obtained from the devices' nameplate or Table 1. If only the running wattage for a device with an electric motor is known, the starting wattage can

Depending on your work requirements, your unit may need multiple outlets or wheels for portability.



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- Standard kit includes 12 oak wood stair treads, a landing, a complete handrail, and all necessary hardware and connectors.
- Diameters available include a 5 ft. 3 in. model and a 4 ft. 3 in. model.
- The height range for the standard kit is adjustable from 8 ft. 3 in. to 10 ft. 2 7/8 in. and with additional components, can be installed to a maximum height of 11 ft. 9 5/16 in.
- Powder coat finished painted in either Hi-Gloss Black or Hi-Gloss White.
- Can be installed in a clockwise or counterclockwise rotation.
- · Stair treads and landing are made of solid Oak wood with a natural stain and a polyurethane protective coating.
- Balcony rail kits are available in matching color and horizontal baluster and railing design.
- Handrail is manufactured from an aluminum core surrounded by a soft PVC cover to allow the handrail to be curved at the time of installation to accommodate the radius of the staircase.
- Rise between stair treads is adjustable from 8 3/8 in. to 9 1/4 in.
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- A complete installation guide is included in all kits and an installation video is available upon request.
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NEW POWERHORSE GENERATORS

Northern Tool + Equipment's new Powerhorse product line offers portable 4,000- and 7,000-watt generators engineered for a lifespan up to eight times longer than other brands—and available with an affordable price tag. Some of the new models feature an electric start that allows users to simply press a button to get appliances and tools up and running in minutes, without having to pull-start the generator. From the industrial-strength cast iron cylinder sleeves to the dual bearing forged crankshafts, the Powerhorse OHV engines are built to last. The copper-wound heads are engineered to allow the generators to run at full load continuously for weeks without overheating.

Notably, all Powerhorse units also have a clean sine-wave power output that is stable and consistent to ensure sensitive electronics such as your computer, TV or refrigerator are protected and function properly. Each generator is also equipped with a volt meter to monitor and maintain stable power, an extended-run fuel tank to reduce the fuel refilling, and a quiet muffler to keep noise levels down.

The *EHT* staff recently tested the Powerhorse 4000 (M166112E) when repairing a storm-damaged fence in a remote area of property. With 4,000 surge watts/3,100 rated watts, this easy-to-transport generator comes with a fold-down handle and solid 6-in. wheels that will never go flat. It starts easily and runs smoothly and quietly. The unit has a full bank of outlets (9 outlets plus 12V DC) to power a number of appliances simultaneously. We ran an air compressor for our fence project, but the unit has enough power to keep your refrigerator, lights, TV and more running smoothly during a power outage. It comes with 4-gallon fuel tank, and the 208cc OHV engine features low-oil shutdown and recoil start. The 4000-watt Powerhorse generator is a great tool for off-site projects or emergency backup power, and Northern Tool stands behind the product with a 2-year consumer warranty. Visit www.northerntool.com.

- Matt Weber

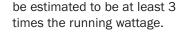




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3. Add the wattages for all devices on your list. This total must be lower than the continuous output rating of your generator.

Example:

Device to	Greater of
be Powered	Starting/Running
	Wattage
Light Bulb	75 W
Refrigerator/18	Cu. Ft. 1600 W
Microwave	700 W
Window AC	1800 W
Sump pump (1/	3 hp) 2100 W
Total	6275 W

In this example, the generator must have a continuous output of at least 6,275 watts in order to power all of the devices simultaneously.

You can increase the number of devices your generator can power by staggering the load on

10 TIPS FOR GENERATOR MAINTENANCE

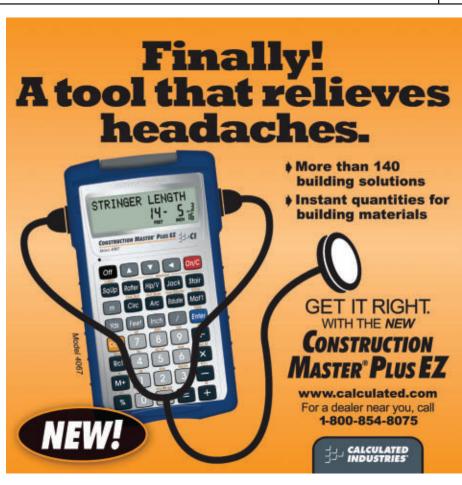
- 1. Check the oil before each use. The oil in a brand-new generator should be changed after the first 20 hours of use to remove assembly lube and metallic particles created during the break-in period. Afterward, change the oil every 100 hours.
- 2. To keep fuel clean, store it in an OSHA-approved receptacle and keep out of high-traffic areas.
- 3. Check the condition of the air filter on each day of use. Clean the filter every 100 hours and change it monthly.
- 4. Use warm water at a low pressure to keep the engine clean. (Never use a pressure washer.) Dry the outside immediately afterward.
- 5. With the equipment clean and dry, inspect for any signs of fuel leakage. If you spot a leak, tighten the parts causing the leak or replace them immediately.
- 6. During inspection, take time to tighten loose parts that could vibrate noisily and potentially harm nearby components.
- 7. Inspect the spark plugs every 50 hours for damage, dirt and carbon buildup. Clean with a wire brush or spark plug cleaner. Replace any plugs with cracked porcelain.
- 8. Clean and inspect the fuel strainer and fuel filter monthly. If there is sediment in the strainer, shut off the fuel-line valve before cleaning. Then, remove and clean the sediment bowl and the filter screen. If sediment has made its way into the tank, all fuel will need to be removed. Clean the residue from the sediment reservoir (the lowest point in the tank). Use a clean rag to wipe sediment from the filter element and the sides of the tank before refilling.
- 9. Once a year, take the time to conduct a general inspection of the generator. Look for any dirty, broken or misaligned parts. Replace the fuel hose if cracks are present.
- 10. If the generator needs to be stored for an extended period of time, be sure to exercise it every two to three months. Let it run for at least 10 minutes while carrying a load.

Regular maintenance will ensure your generator is in prime condition for emergency situations or home improvements.

the generator. For example, you could alternately power your refrigerator and air conditioner for limited periods of time—powering only one of the devices at a time but never powering both at the same time. **EHT**



Devices with electric motors, such as power tools, typically require a higher starting wattage than the running wattage. You should account for the starting wattage when selecting an appropriate generator.



Natural Beauty

Clean Craftsman Trim for Stain-grade Wood Windows



By Larry Walton

old wood windows, you may think of them as outdated but they still remain the windows of choice for many of the architects in our area. We see wood windows with a clear finish mostly on log-built and timber-frame houses, but a renewed interest in the craftsman style is also contributing to an increase in wood window applications.

Of course, wood windows are also used to replace an existing window in order to match other windows in an older home. You can even find designs with sloped exterior sills for water runoff.

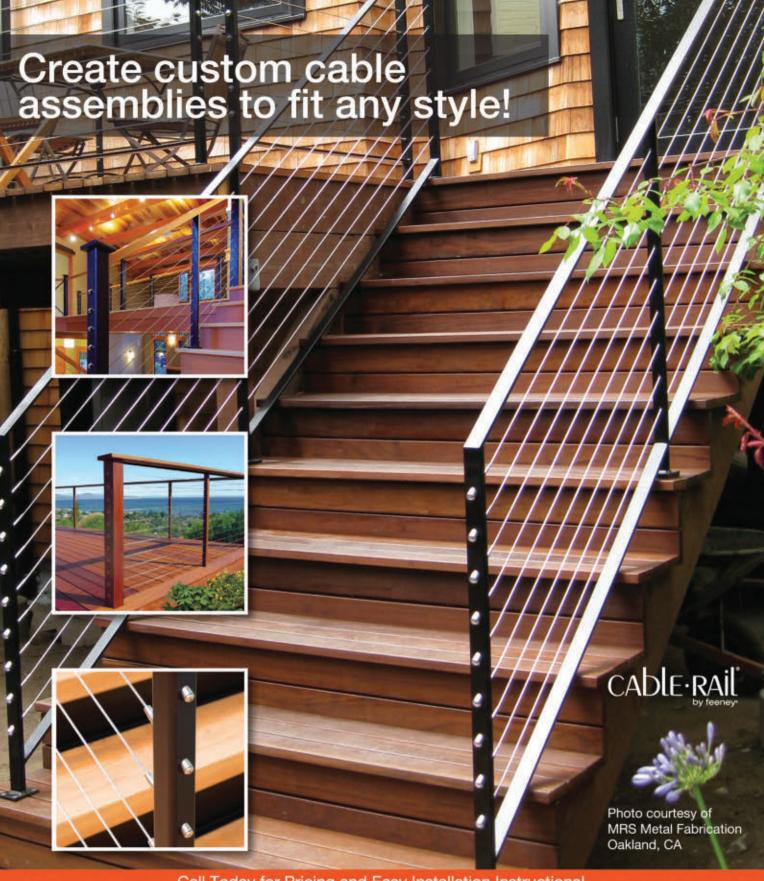
Some of my dad's old finish carpentry books provide detailed

instructions on the best knots to use when attaching a sash cord to a cast-iron weight designed to assist window operation on old double-hung windows. As much as having ropes and pulleys inside your walls sounds like fun, most modern versions eliminate these features in favor of lighter components and spring-assisted mechanisms.

Over the years we've had our fair share of window trim challenges on wood windows. On a large home with 40 or more windows, mistakes in ordering can mean multiplied headaches when trying to get the interior trim to work out.

One of the biggest problems stems from wishful thinking by some window manufacturers and their representatives. How these guys think they can get the window jamb extensions and surrounds the perfect width when there are so many variables in the construction process is beyond me.

When windows are installed in new construction, requirements vary by code and climate for sheeting, wrapping and sealing. Lumber quality also varies. With the use of small trees comes less stable wood grain, and the resulting warping and twisting of studs can be just enough to affect wall thickness.



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DO IT YOURSELF

In addition, insulation, drywall and interior plaster can affect the distance between the window frame and the finished surface of the interior wall. For these reasons you should plan to custom-fit the jamb extensions or surrounds during the finish carpentry phase of the project.

Craftsman style, like other wood window designs, differs in details, but the overall principle is straightforward and functional. Forget fancy joinery. Connections between trim components in the craftsman style are more about stacking with square cuts and butt joints.

When it comes to achieving a quality installation on a natural wood project where caulking cannot be used to bridge the gaps, some back beveling and scribing

may be necessary to get the tight connections you want.

Here's how contractor Nick Taylor trimmed a natural wood window in the craftsman style.



Once the window has been set and the drywall is finished around the window, make sure that the surrounding framing is free of debris and that no drywall will interfere with the window casing.



This illustration shows the common names of the components that make up the craftsman style trim. Additional caps and crowns are sometimes added to the head casing. [Illustration by Tim Walton]



Take measurements of the horizontals and verticals of the window surround to determine the size of the surround.

Measure the width from the window to the drywall and determine the size that will work best, splitting the difference if it isn't uniform all the way around.

Using a table saw, rip down the material the same width for the two verticals and one piece for the top of the window surround. Here





Taylor uses a Speed Square to mark the stool. The distance between the cross-cut lines should be the length of the top horizontal piece.





Taylor uses a slight bevel to get a better fit between the surround and the window frame.



Determine the reveals you want for the window stool and take into account the casing width for the dimensions of the ears.



DO IT YOURSELF

After cutting out the stool ears with a jigsaw, check it in location to be sure it fits against the window frame or jamb extensions all the way across and fits the wall surface. Adjust as needed.

Preassembling the stool with the other three surround boards makes a box that can be installed in one piece.

When setting the window surround, ensure that you have





consistent reveals, using shims and a straight edge to make sure everything stays in place and is even.



Measure the window stool to determine the length of the apron, which should account for the reveal to the casing as well.

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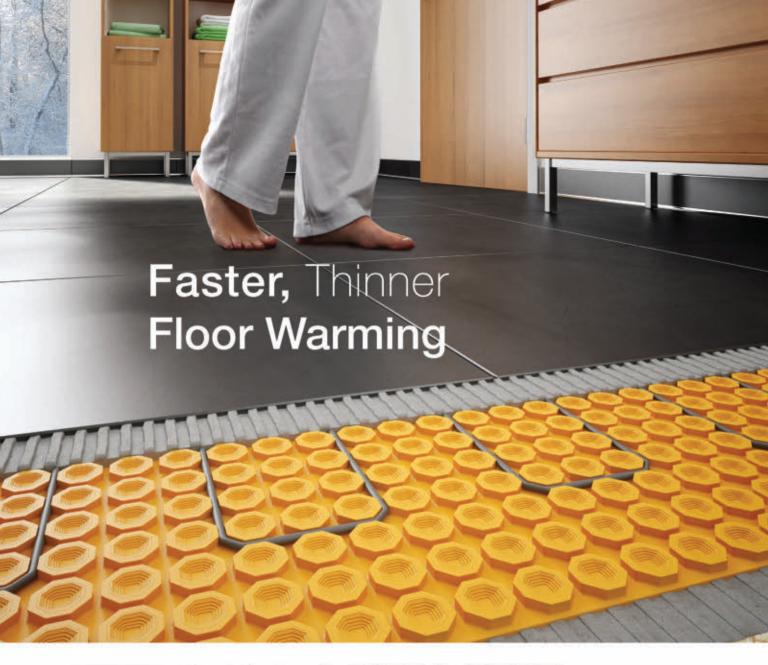
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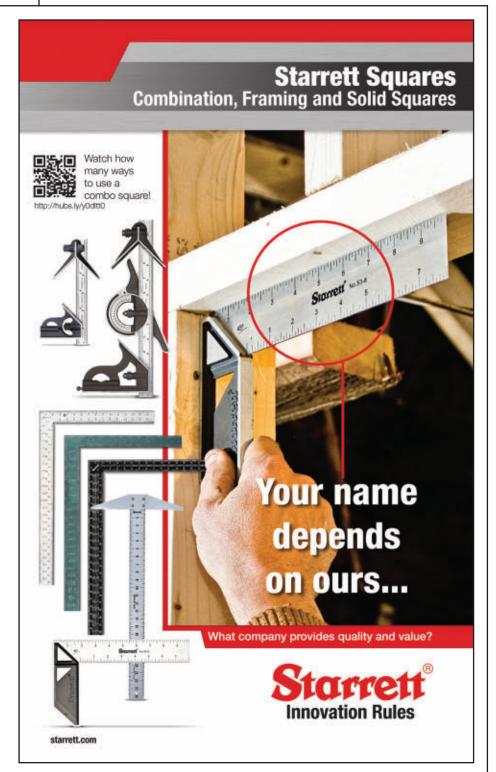
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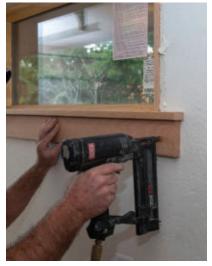
DO IT YOURSELF

After double-checking the reveal at both ends, nail the apron in place snug beneath the window stool.

The vertical casing boards can now be cut to length at the reveal

mark on the horizontal surround board. Before nailing, check that the casing touches the surround all the way up and is fairly flat on the wall surface. Adjust as needed and nail into place.









The parting bead is determined by the measurement from one side of the casing to the other, plus the reveals. It will usually be the same length as the window stool.



Here Taylor leaves the parting bead a little wide and marks for scribing so it fits tightly against the window surround and against the wall surface.



Keeping in mind what will be visible after installing the header helps in the notching and scribing process. In this case, the surround protruded a little so the extra material is above the casing.

Sometimes it's the other way around, and it takes more material in the inside part to reach the surround.

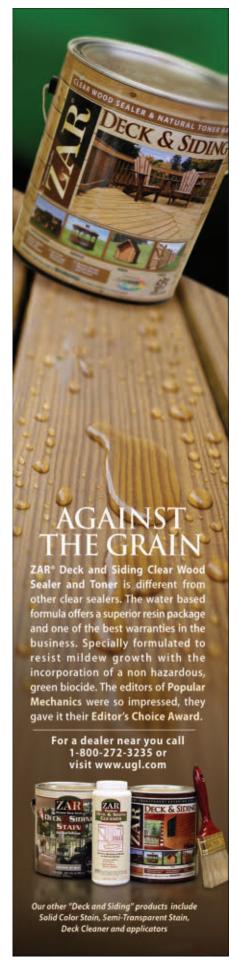


Fastening the parting bead to the casing will hold it in place while you install the header.



After cutting the header and nailing it in place, a small finish nailer can be used to fasten the parting bead to the head casing. **EHT**







ands-down the most popular project among do-it-yourselfers, painting is a fundamental way to transform the look and feel of any room or object, indoors or out. With a little patience, diligent prep work, a coat of primer and the proper procedure, you can apply a new coat of paint with professional-looking results. Here's a roundup of new painting equipment to get you geared up for your next project.

WOOSTER HYDRFLOW ROLLER FABRIC TECHNOLOGY

HydroFlow is a Wooster-exclusive technology developed to ensure consistent release of paint from roller fabric, creating even mil thickness throughout the project. It makes painting easier and faster, because there's no need to go back and rework an area to get proper coverage. An added benefit is that the new rollers don't require painters to push as hard during application. The HydroFlow technology in the new shed-resistant Super/Fab FTP rollers offers more coverage



per load with all flat, eggshell and satin paints. Pro/Doo-Z FTP rollers with no-shed fabric utilize HydroFlow technology to achieve the finest finishes faster for all paints (flat to gloss), enamels, primers, urethanes and epoxies. Wooster has released new Super/Fab FTP and Pro/Doo-Z FTP brands in 9-, Canadian 9-1/2-, 14- and 18-in. rollers as well as 4-1/2- and 6-1/2-in. miniroller sizes. Visit woosterbrush.com.

ROLL A BUCKET

With the award-winning new Roll A Bucket, you won't have to lift and move any more paint buckets. Designed by a painter, the Roll A Bucket is maneuvered with a paint roller for steering, the same way that you would use a mop to steer a mop bucket. The caster wheels allow for easy maneuvering over tarps.

There is also a brake on one of the wheels. Each Roll A Bucket comes with a custom-designed grid, and is sloped on the bottom so your roller can reach every last bit of paint. Work smarter, not harder,

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FLEXIO 890 SPRAYER

The FLEXiO 890 is a portable spray system that is the most flexible and powerful painting solution in the Wagner lineup. With integrated storage for indoor/outdoor spraying, it combines the iSpray nozzle, detail finish nozzle and the X-Boost turbine. The iSpray nozzle sprays unthinned residential paints for broad surfaces both indoors and out. The detail finish nozzle is ideal for small projects and fine finishing. An 11-1/2-ft. air hose provides 23 feet of working area. The FLEXiO 890 produces a slightly stippled, roller-like finish, perfect for interior walls. The new sprayer is also 50-percent quieter and 20-percent lighter than traditional airless sprayers. Visit

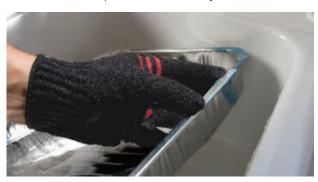
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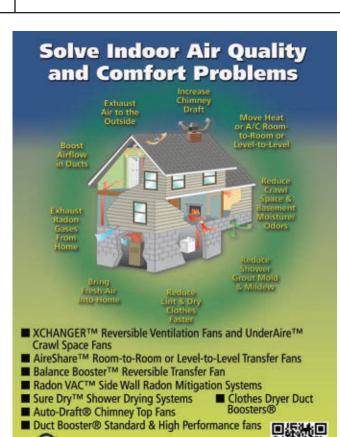
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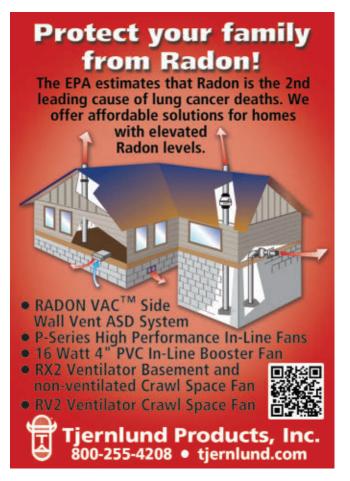
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PAINT GLIDER

A new alternative to traditional paint trays, the Paint Glider is an innovative way to hold paint while rolling without making a mess. The patented round design holds more paint yet resists spills. With Paint Glider moving paint is simple and easy. The circular design

allows you to rotate it 360 degrees using your paint roller, which eliminates bending down to reposition the tray. By rotating, the paint always faces the direction that allows easiest reloading. The slick, rounded bottom allows the Paint Glider to easily slide over bun-

dled drop cloths without spilling or splashing. Pick up the Glider by the handle, and the paint collects in the bottom reservoir, allowing



you to easily move from room to room without spilling. When the job is done, a drain stop allows the paint to easily drain out the Glider for easy cleanup with minimal waste. Visit www.paintglider.com.

HYDE PAINTER'S ASSISTANT

Hyde's Painter's Assistant is a simple multi-tool that saves time and hassle on painting projects. For both professionals and do-it-yourselfers, the Painter's Assistant works as a carrying handle for





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1- and 2-quart containers, turning even simple plastic buckets into a handy carrier when you're painting trim or windows with a brush. It also clips to your roller tray, providing a magnetic brush holder right where you need it. The Painter's Assistant's built-in features include a paint can opener, a brush and roller cleaner, belt hook, putty knife/scraper, a paint-can hook for when climbing ladders, plus a garage tool hanger. Visit www.hydetools.com.

JUMBO-KOTER PIPE PAINTER

Most painting tools are used for applying coatings to flat surfaces like walls and ceilings. When the time comes to paint round areas such as pipes, railings, posts and more, the new Jumbo-Koter Pipe Painter from Wooster is the right tool for the job. The Pipe Painter features twin cages that coat two sides of a pipe simultaneously to increase production by 50 percent.



These dual, smooth-spinning cage frames adjust separately in 30-degree increments to paint pipes of all sizes (the smallest being 1-in. diameter). Made of strong copolymer polypropylene, the Wooster Jumbo-Koter Pipe Painter has a thumb rest for comfort and also attaches to threaded or Sherlock GT extension poles for added reach. The Pipe Painter works with all 4-1/2- and 6-1/2-in. Wooster Jumbo-Koter covers. Visit woosterbrush.com.

HYDE 17-IN-1 PAINTER'S TOOL

Carrying tools around the house—or worse yet, struggling to find tools on a work site—can really slow things down. Eliminate the hassle with the new Hyde 17-in-1 Painter's Tool.

Made from durable .075 thick carbon steel, Hyde's newest tool combines the company's trademark high-quality, lightweight design with with features that are especially helpful for painting, from the wrenches you need to connect an airless spray hose to regular and mini-roller cleaners. The 17 uses: 1. scrape paint, 2. spread compound, 3. open cracks.







6. open cans, 7. open bottles, 8. clean regular rollers, and 9. clean mini rollers. The 10th and 11th use are the 3/4- and 11/16-in. wrenches you need to connect your whip hose to your both your spray gun and your main airless hose. For the other 6 uses, just look to the handle and underneath the Hammer Head end. Numbers 11-14 consists of four different screwdriver bits that are securely stored within the handle and insert into the handle end for quick, easy use. Also hidden beneath the Hammer Head end is a tool that can be used as either a scribe or a nail set. Visit www. hydetools.com.

SMART SIDEKICK ROLLER

The Wagner SMART SideKick is a powered roller that allows for continuous painting, making it extremely suitable for large or multi-room painting projects. The SideKick draws from any size container from 1 to 5 gallons, and directly feeds the roller cover for consistent application of paint to the surface for professional results. Paint is conveyed through a 16-ft. hose, enabling a 32-ft. working area. The powered

roller provides everything needed to paint large projects in less time without reloading. Visit wagnersrpaytech.com.

SHERLOCK BUCKET-TRAY

A standard paint tray isn't quite big enough for some jobs, and a multi-gallon bucket can be too big for others. Those looking for the perfect paint vessel "middle ground" will find it with the new Sherlock Bucket-Tray from Wooster. Its aggressive roll-off grid is excellent for use with 9-, 12-, or 14-inch roller frames. The Sherlock Bucket-Tray has a 1-gallon capacity—four times the amount of standard trays—saving painters



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...ordinary! Wooster engineers take a fresh approach to designing paintbrushes and rollers. We are the company that others copy. Our products achieve something useful, something more: faster production, smoother finish, easier control, and improved performance. If you want painting equipment that goes beyond expectations, look for what's new from Wooster.





time on refills. Built-in handles on both sides make transporting the Bucket-Tray easy and offer a great way to hang it for storage when not in use. An included



frame rest prevents unwanted messes when it's time to switch to using a brush or take a quick break. Molded from sturdy polypropylene, the Bucket-Tray is durable and features form-fitting liners. Made of clear, solvent-

resistant PET (recycled plastic), the Bucket-Tray Liner is a great accessory purchase for instant cleanup. Visit woosterbrush.com.

SMART EDGE ROLLER

The SMART Edge Roller from Wagner is designed to make cutting-in around windows, doors, trim and corners fast and easy. It provides a controlled and continuous flow of paint from the handle to the roller,

eliminating the need for messy, dripping brushes and paint trays. Plus, there is no more taping required. The key is the Twist and Trim Tool, which has a Trim Guard and three micro brushes for painting right up to the edge of the surface, giving you a consistent finish for your entire painting project. The guard prevents the roller from touching the trim, but quickly folds away for regular rolling in small spaces. The paint tube holds 6 fl. oz. and its 3-by-3/8-in. roller allows you to edge approximately 96 linear feet in a single fill. Trim a 12-by-12-ft. room in approximately two to three fills.





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Specialty touch-up paint manufacturer AutomotiveTouchup helps DIY'ers save money and achieve professional-looking results for vehicle paint repairs. The company custom-formulates exact-match touch-up paints for thousands of cars and trucks each year using a comprehensive library of OEM colors. The key to the perfect color match is contained in the vehicle's color code. (The trick is finding it, since it can be located in a number of places, the inside of the door being the most common.) AutomotiveTouchup formulates products to work together as part of a complete



automotive paint system, and recommends using primer, basecoat and clear-coat from the same brand, providing a full range of products and detailed instructions to complete the job with success. Visit. AutomotiveTouchup.com.

PAINT BRUSH COVER

Save time and money during extended paint painting projects with the Paint Brush Cover. Instead of wasting time rinsing brushes, the Paint Brush Cover is a simple mess-free, eco-conscious way to store paint-soaked tools between sessions. It's a secure, leak-proof storage container for brushes of all

sizes that allows painters to skip the cleanup stage. It also reduces the amount of harmful chemicals that are washed down the drain with every home-improvement project. Each airtight container is crafted from a sturdy high-density plastic that can be stacked and stored with ease, eradicating the need to fiddle with Saran wrap, freezing or rinsing brushes mid-project. Visit www.thepaintbrushcover.com.





HANDY PAINT GRID

The HANDy Paint Grid is marketed as the first new idea in painters' grid screens in more than a halfcentury. The new grid is made in the United States entirely out of recycled plastic from car batteries. It provides additional clearance to the bottom of the paint bucket for easy paint access and snaps in place on any 5-gal. paint bucket for a secure fit. Its ergonomic

handle and patented design for superior roll-off make it easy to remove excess paint and ensures that paint is distributed evenly across the surface of the entire roller cover. The 9-1/2-in. wide



HANDy Paint Grid is easy to clean and, because it's made of recycled plastic, will never rust, unlike its metal counterpart. Visit HandyPaintProducts.com.

ROCKLER MILK PAINT

Rockler Woodworking and Hardware introduces 18 new colors of General Finishes Milk Paint, nearly tripling the selection previously available. Milk paint is a traditional, casein-based paint that's been around for centuries and has enjoyed a remarkable resurgence in popularity in recent years. Over the last decade or so, the look has found its way into a multitude of furniture showrooms. DIY'ers use milk paints at home for many projects including cabinets, crafts and





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both indoor and outdoor furniture. The paint produces a special "milky" effect that is widely used on both vintage and modern furniture pieces. General Finishes Milk Paints are interior/exterior acrylic

paints. Uniquely engineered with the latest in paint technology, they can be used directly from the can to produce a high-quality satin-sheen finish. Visit www.rockler.com.

SHAPE TAPE

The makers of Frog Tape now offer Shape Tape, which features a pre-cut repeating pattern ready for easy use, and provides endless design capabilities on walls,



furniture and more. Shape Tape comes in three patterns for a variety of design options: Chevron, Wave and Scallop. Go horizontal, vertical or diagonal. Align the tape and create sections with various widths. Shift the tape alignment and create unique effects. Shape Tape is treated with patented PaintBlock Technology, a superabsorbent polymer that reacts with the water in latex paint and instantly gels to form a microbarrier that seals the edges of the tape, which helps prevent paint bleed. Visit frogtape.com. EHT





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The complex roofline of this house exhibits the decorative appeal of three-dimensional architectural shingles. Our project house, however, had a much simpler roofline. (Photo courtesy Atlas Roofing)

ne of our recent *EHT* projects was a "roof-over" in which we covered an existing single layer of three-tab asphalt roof shingles with architectural shingles.

In roofing, the term "architectural" generally means the shingle has a three-dimensional design and construction. True architectural shingles (also called "designer" shingles) will have more than one thickness to create a shadow line that gives the roof the appearance of slate or wood shake. Not only does the three-dimensional

design enhance the look of the roof, but the extra thickness of the shingles provides additional weather protection.

"Asphalt shingles are aesthetically diverse and come in a wide range of styles and colors that will enhance the look of your home," says Reed Hitchcock, executive vice president for the Asphalt Roofing Manufacturers Association (ARMA). "Designer shingles can display a more natural appearance, and can also match metal, cedar and slate materials that are more expensive. Meanwhile, you're still getting the durability and easy maintenance that comes with asphalt shingles."

For our roof-over project the *EHT* staff chose StormMaster Shake shingles from Atlas Roofing. These designer roof shingles resist high winds, harsh impact and extreme weather conditions. StormMaster Shake also features Scotchgard Protector to defend against those dark, dingy streaks that appear on roofs due to algae. With the algae threat removed, your home's roof



keeps the original color. The shingles are designed to resist cracking, splitting, warping and shrinking in both hot and cold weather climates for many years.

As always, check with the manufacturer and your local building inspector about code requirements for roof work in your area. Some manufacturers don't warranty their product if installed over existing shingles, and a new layer should never be installed over any more than a single layer of old three-tab shingles. For this job to meet local code and the manufacturer's warranty, we had to first cover the old shingles in 30-lb. felt paper before roofing installation. It's also important to follow the manufacturer's instructions to the letter regarding shingle layout and fastener placement.

PREPARATION

For a roof-over project, first replace all missing shingles. Split

and securely nail any buckles, raised tabs or curled shingles.

To ensure performance and qualify for the warranty, make sure the attic ventilation complies with FHA Minimum Property Standards.

To maintain a Class A fire rating, I applied a layer of 30-lb. felt underlayment over the old shingles, beginning at the rake and

overlapping each succeeding course by roughly 4 inches, tacking it down with roofing nails.

FASTENING

The StormMaster Shake shingles require 11- or 12-gauge corrosion-resistant roofing nails with 3/8-in. minimum head. The nails must be long enough to penetrate



One option is to spray-paint all the roof penetrations to match.

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the roof deck 3/4 inch. If the deck is less than 3/4-in. thick, the nails should be long enough to penetrate fully and extend at least 1/8 inch through the roof deck. Keep in mind that a roof-over project requires nails that are long enough to pass through the extra layer of shingles. For this project I recommend a minimum nail length of 1-3/4 inch.

A minimum of four nails are required per shingle, located in the sealant line about 6 inches up from the bottom edge of the shingle. One nail should be placed approximately 1 inch from each side of the shingle, and the remaining nails equally spaced between the two outer nails.

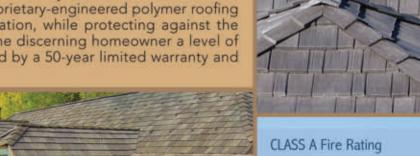
For the do-it-yourselfer, a pneumatic roofing nailer can greatly speed up the project. For this







DaVinci roofing tiles have all the appearance and beauty of natural slate or shake, but with a higher level of durability from the proprietary-engineered polymer roofing formula. The tiles are designed for easy installation, while protecting against the elements for decades to come. DaVinci offers the discerning homeowner a level of style and beauty previously unattainable, backed by a 50-year limited warranty and made in the United States.





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project I used the Senco RoofPro 455XP. It's durable, lightweight and easy to handle, plus it comes with "sequential actuation" for rapid bump-firing.

SAFETY

Working on the roof line can be dangerous, and a properly rated ladder preferably with a stabilizing attachment will be



My starter strip was too wide for the underlying shingle tabs, so I trimmed to fit.



I applied Through the Roof roofing sealant above and below the starter strip.

necessary to climb and carry materials.

Any time you're working on the roof and not on the ladder, you should be roped to a fall-restraint harness. I used a 3M harness that includes a hinged mounting plate which attaches to the roof ridge with a minimum of 10 wood screws.

Our project house had a standard 4/12 pitch roof, but that was still worrisome for me (because I hate heights). The steeper the roof, the more difficult—and dangerous—it is to maneuver on. Consider this when deciding whether to contract the work or do it yourself.

(And don't forget your safety glasses when using a nail gun.)



Smart

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"Doing it Right the 1st Time with Quality Materials Saves Time, Money, Sanity, and may Help Lower Blood Pressure!"



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INSTALLATION

With the felt paper in place, I applied an asphalt shingle starter strip along the eaves. The starter strip at my local Lowe's was actually too wide for the StormMaster shingles, so I had to cut it to fit with a razor. I then added extra roof sealant along the top and bottom of the strip

to ensure a good connection. It's also a good idea to apply the starter strip along the rake.

You might find it helpful to strike horizontal chalk lines over the felt to ensure proper shingle alignment. The StormMaster Shake shingles have an architectural guideline that also helps with alignment. Plus, I taped up a Speed Square as quick measuring jig to spot-check my alignment as I laid the shingles.



Chalk lines can help guide the layout.



Begin the first course with a full shingle at the lower left corner of the rake.



Trim 5" off the first shingle of the second course.

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The trick to laying asphalt shingles is to stagger the seams between courses. Begin shingle application at the lower left rake of roof. Continue the first course across roof with full shingles laid flush with the starter strip and fastened with four nails, placed as specified. I added a bead of roofing sealant between the starter strip and first course.

To begin the second course, cut 5 inches off the left end of a shingle and apply the remaining larger piece over the first course shingle, flush with the left edge and exposing the first course 5-5/8 inches. Proceed with full shingles across roof, maintaining the same exposure throughout the course.

For the third course, cut 10 inches off the left edge of a shingle and apply the remaining larger piece over the first shingle of second course, flush with the left edge and exposing the second course 5-5/8



The trimmed shingle ensures the seams are staggered between courses. Install StormMaster Shake shingles with 5-5/8" exposure.





Use a T-square as a guide to mark the cutline on the rear of the shingle. The Ridgid Roofing Cutter is an air tool that slices asphalt shingles quickly.

inches. Proceed with full shingles across the roof, maintaining the same exposure.

The fourth course begins with a full shingle on the left, proceeding across the roof just like the first course.

By offsetting the seams between shingles in this manner, the roof will continually shed water without allowing a point of entry to the building envelope.

At the ends of the courses, excess shingle material can be cut flush with the rake.

Cuts to the asphalt shingles can be made with a sharp utility knife or a hook-shaped roofing knife. On this project I used the new Ridgid Roofing Cutter, which is an air-driven tool that power-cuts quickly through the tough material. A T-square is a useful guide for marking cutlines on the shingles.



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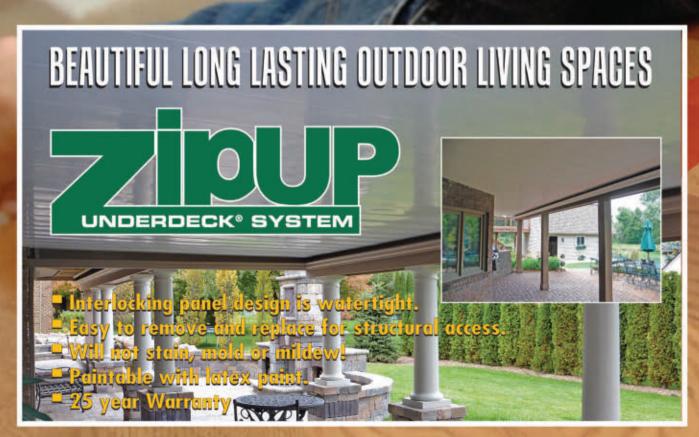
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ROOF PENETRATIONS

If the existing flashing of roof vents, pipes, etc. is in good shape then it can be reused. Make sure all flashing diverts runoff over the lower shingles, shedding water continuously. Seal all seams and any exposed fasteners with quality roofing cement. The shingles can be individually cut to wrap penetrations. After some trial and error, I decided it was easiest to cut those shingles on the spot. An L-shaped framing square can help you transfer measurements from the pipe boots to the shingles, so you can trim them to shape with your knife.

I covered two vent pipes with black Perma-Boots, which seal the



Cut 10" off the first shingle in the third row and nail in place.



The Senco RoofPro 455XP is handy new roofing nailer that saved lots of time on this job.



I marked a Speed Square with tape to spot-check the shingle exposure.



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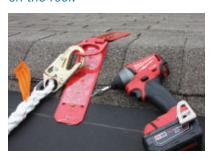
rubber pipe gaskets from leaking. I then spray-painted the metal HVAC stack and range vent a charcoal black so the accessories would all match.

RIDGE

The shingles courses were installed all the way up the roof. The ridge was then capped with Atlas ProCut Hip & Ridge Shingles.



A fall-restraint safety harness should be used when working on the roof.



I attached the 3M fall-restraint harness to the roof ridge with 10 heavy-duty screws.

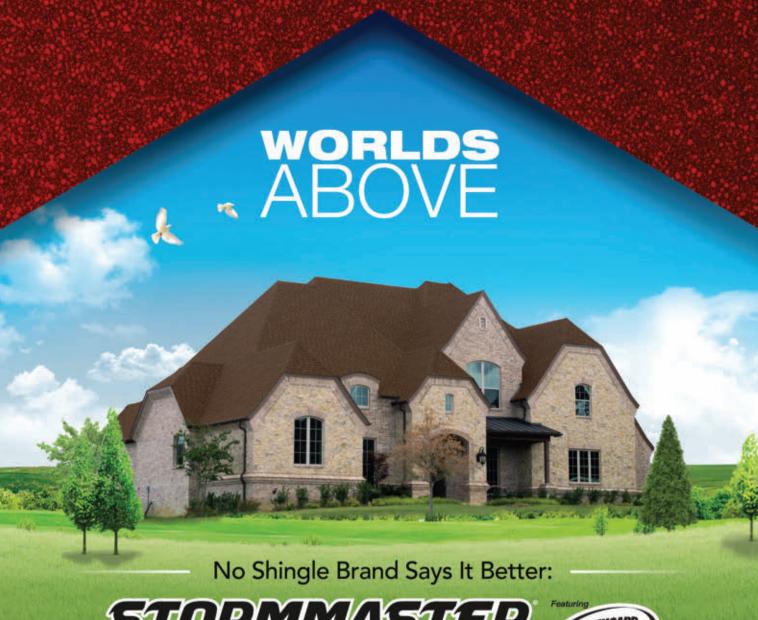
However, to ensure the ridge cap concealed the sealant line of the top course of shingles, I had to overlap the ridge with the uppermost shingles and trim the excess to fit.

The Hip & Ridge shingles can be separated into three equal pieces (perforated lines are provided). Each piece bends lengthwise to provide equal exposure on both sides of the ridge. The ridge shingles are nailed 6 inches apart from the exposed butt edge. Every ridge shingle gets two nails, one on each side. The final shingle is trimmed to fit and set in roofing cement. The exposed end of the ridge shingles should be directed away from the prevailing wind.

DIY OR NOT?

The technique of installing asphalt shingles is not especially difficult. Assuming you're working





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Make sure all flashing laps over the shingles and diverts water over the roofing.

Seal any exposed fasteners with quality roofing sealant. Gardner-Gibson's Leak Stopper goes on white but dries clear.



on a sound roof foundation, then careful shingle alignment and proper fastener location are the keys to success.

However, roofing can be grueling work. Stacks of shingles are very heavy. The blazing sun can be merciless. And stabilizing yourself for ours at a time on a sloped surface can tax muscles that you forgot you had.

I learned the hard way that roofing contractors show up to the jobsite with multi-man crews for a reason. Think twice—no, three times—before attempting your own DIY roof project. With no one to help tote the roofing material, you'll have a long slog ahead of you, to say the least. Take a week off work. Estimate the number of trips you'll make up and down a ladder then multiply that by ten to arrive at a realistic figure.

Me? I ran out of time. Over the course of a few days I installed the



rear half of the roof (the difficult part with all the penetrations) by myself. It took much longer than I anticipated, however, and I was due back at the *EHT* office. I hired my contractor friend Carlos Munoz to help me complete the front half. He and his two workers completed the job in a day.

In hindsight, I would recommend a DIY roof-over only to the most die-hard of handy homeowners, and even then for only small roofs with simple designs. I'm glad to say I did the work and learned from the experience, but I don't want to do it again. It's a large-scale job that requires more hands and strong backs than I was born with.

FINAL THOUGHTS

The end result of the upgraded roof not only looks amazing but adds significant value to the home. Asphalt roofing shingles



I covered the old vent pipes with Perma-Boots. Perma-Boots seal rubber pipe gaskets from leaking and provide a finished look.





provide excellent curb appeal and top performance, which is why four out of five homes in the U.S. have them installed.

"Property owners want their home to look beautiful and unique

from the curb, and that all starts with the roof. Designer asphalt shingles give homeowners the option to choose whichever texture, color or style matches their design vision," says Hitchcock of





We installed shingles all the way to the ridge line then trimmed the excess at the top.



The Hip & Ridge Shingles separate into three pieces (one piece shown).



Fasten Ridge shingles over the ridgeline with two nails each.

ARMA. "Beyond aesthetics, their superior performance and long life expectancy make asphalt shingles an excellent investment for homeowners." **EHT**

For more information on asphalt roofing, visit the Asphalt Roofing Manufacturers Association at www.asphaltroofing.org.



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DECK REDO

By Monte Burch

Renewing a Deck with an **Elastomeric Coating**

hen our deck weathered to splits and splinters we had a major problem. With more than 1,800 square feet of decking surrounding an above-ground pool, a number of the boards had also rotted. We didn't want to rebuild the entire deck, nor install new composite decking because most of the deck boards were still solid but weathered. Although an awning protected the

ends of the boards close to the house, their outer ends were badly weathered. Rather than replacing the entire 16-ft. boards, we only wanted to replace the weathered sections. However, recoating the new sections with a deck stain/preservative wouldn't match the old boards, even with a number of coats.

The solution was Superdeck Deck & Dock Elastomeric Coating. This high-build coating is designed to protect, resurface and waterproof old damaged wood and concrete. The unique formula provides long-lasting



Replacement of rotten boards and application of Superdeck Deck & Dock Elastomeric Finish bring protection and new life to the old wood.





protection against moisture and the damaging effects of the sun. It is designed to expand and contract along with the substrate while offering excellent scuff-resistance for heavy-duty foot traffic areas. Deck & Dock Coating will also lock down splinters and bridge dimensionally unstable cracks on old damaged wood surfaces. The product is formulated to resist growth of mildew and algae on the coating's surface.

Because our deck surrounded a pool, we also utilized Deck & Dock Anti-Skid additive. It creates a great slip-resistant surface to the deck and stair treads.

REPAIR AND PREPARATION

First step was to check the deck framing. All support boards were in good shape, with only the deck boards weathered. Because the pool-deck had a railing section to keep toddlers from falling into the water, it had to be removed before recoating.

The next step was to locate and mark the rotten or soft deck boards. Some you could feel when walking across. We used a sharp knife to probe doubtful boards. A knife blade was used to probe between the deck boards to locate the joists, and mark their locations. We then used a Stanley Quick Square to mark across the boards on the front side of the joist.

We bored starter holes at the corners of the mark with a paddle bit and then used a saber saw (jigsaw) to make the cut. In the case of multiple boards, we made a pocket cut with a circular saw followed by a saber saw to finish.



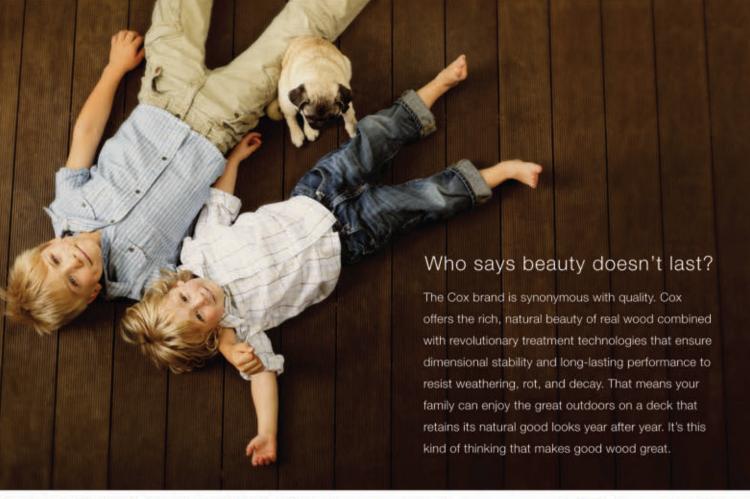
Sections of boards were removed by first locating joists.

A Stanley Quick-Square was used to mark across the boards.



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BIGECK

The old screws were then removed and the old boards pried up and out.

We fastened short sections of 2x6 on the cut side to the existing joists. We then cut the replacement boards to length

and screwed them in place. Where board ends are at an angle, use the old board to mark the proper cut line.

Note: If possible, position new deck boards with the crown facing

up so water will run off. For this reason, be selective in purchasing so you have a good recognizable crown side. Examining the end of the board will reveal the crown.

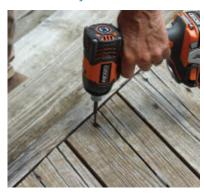
The pool railing sections as well as the outside railings and benches were given fresh protective coatings using Superdeck



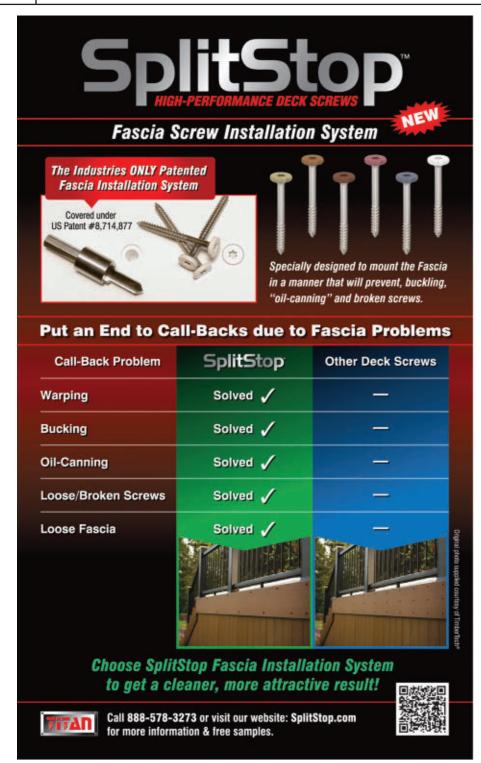
Starting holes are bored in the corners of the mark.



A saber saw is used to make the cut. The Bosch cordless saw is ideal for the job.



Old screws are removed using an impact driver. Go slowly or you may strip out heads and have a real problem.

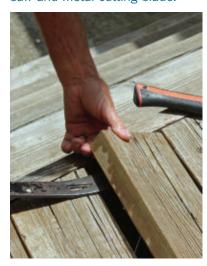


Transparent Stain. The stain is a high-solids, professional-grade wood finish. The stain uses high-quality pigments to inhibit damage caused by the sun, a three-oil system to provide superior protection, and a highly effective mildewcide to inhibit mildew growth on the coating surface.

The deck took more time preparing to finish than we had planned, but finally we were ready to apply the Deck and Dock coatings. The entire deck area was lightly power-washed, as well as the house siding adjoining the deck.



Old pool-surround edging screws were too rusty to remove, and had to be cut out using a saber saw and metal cutting blade.



Old boards, or sections of boards, are then carefully pried out.



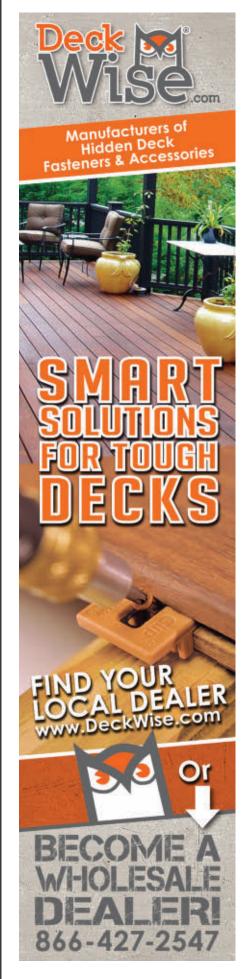
The removed boards with angled cuts are laid on new boards to mark the cuts.



A cordless circular saw makes quick work of cutting deck boards to length.

New 2x6 blocking is scabbed to the existing joists and fastened in place with screws to support the replacement decking.





BIGECK REDO

Superdeck Exterior Cleaner was used to thoroughly clean the entire deck. The Cleaner is a concentrated product formulated to remove foreign matter from wood, including: oxidized (failed) wood coatings,

dirt, grease, oil, pollen and surface stains caused by mildew. The product dilutes with water. The surface must be sprayed with water first, then the diluted product can be applied with a brush,





New boards are installed with quality exterior deck screws.



The rebuilt deck with old and new boards. Note the rot on the pool edges, these boards haven't been replaced yet.

roller or pump up sprayer. The surface must be kept wet by occasionally misting with water. Allow it to stay on the surface for approximately 15 to 30 minutes, keeping the surface wet.

Test a small area by scrubbing with a brush to determine if the surface is ready for rinsing. When ready, scrub the surface with a



The deck and steps are lightly power-washed.



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BIGECK REDO

firm bristle brush or long-handled push broom. Rinse thoroughly with water using a garden hose or pressure washer. Do not exceed 1,000 psi when using a pressure washer. Rinse any residue from plants.

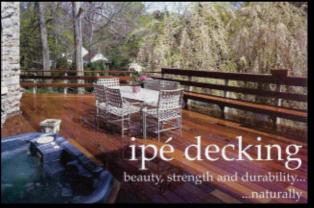
APPLYING THE NEW COAT

Finally, the fun part—applying the finish coatings. The product should not be thinned and goes on fairly thick. It can be applied with a brush, roller or airless sprayer. When rolling, use a 3/8-in. nap synthetic roller cover for smooth surfaces, use a 1/2- to 3/4-in. nap for medium texture, and a 1-1/4-in. nap for a heavily textured finish.

Back-rolling is suggested when spraying, working the finish smoothly and evenly to avoid







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BIGECK REDO

lapping. Always apply a bit of product to a test area and allow to dry completely before coating an entire project to test for color and appearance.

The product should not be applied in the extreme heat of the day. Unfortunately, our deck faces south and we did the job in mid-summer. I discovered we had to work only in early morning, the product dried too quickly to prevent lap marks in the hot sun. Two coats are recommended in order to fill the large, 1/4-in. cracks. And, in a couple of areas we had to apply a third coat. Because the material goes on fairly thick you must brush between the deck boards to cover the sides of the joints.

Coverage may vary, but in most cases it will be 100 square feet



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BIGECK REDO

per gallon for application of 1 to 2 coats. When filling deep cracks or locking down splinters on old, extremely damaged wood surfaces, additional coats may be

required. The product comes with a limited lifetime warranty.

The Duckback Anti-Skid additive was added to the last coat, although we used it in two coats



The Superdeck Deck & Dock is rolled onto the cleaned, dry surfaces.



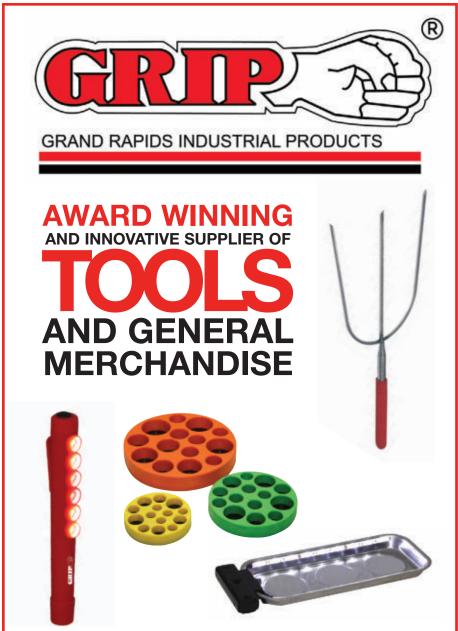
For the last coat Duckback Anti-Skid additive is added.



The additive, made of ground walnut hulls, is used one packet per gallon of product.



The additive must be thoroughly mixed into the coating.



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BIGREDO



on the stair steps. The product, made of ground walnut hulls, is mixed one packet to each gallon of finish.

After the main deck was coated, we cut trim pieces to go around the awning posts and the pool edge. These pieces were precoated, then fastened in place. The pool railings were then reinstalled. We had discovered a lot of rot on the deck boards under the railings, so we raised the railings slightly with wood blocks.

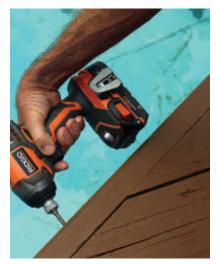
The end result is that our deck looks great and has a new life. **EHT**



The second coat with the additive is rolled in place. Note the crack on the left side and how it is being filled.



Trim boards are then installed using a cordless finish nailer and stainless steel finish nails.



Pool edging has routed rounded edges, and 15-deg. angles are cut using a miter saw. The trim is installed with screws.

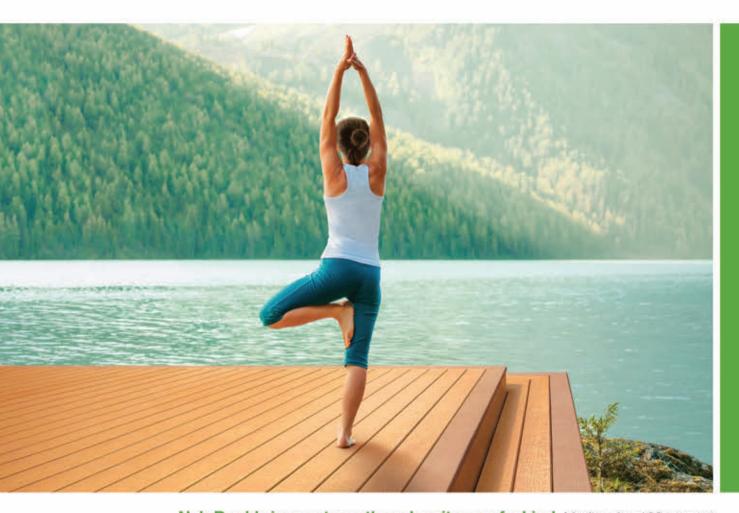


Trim boards are first routed to create a rounded edge, then cut to 45 degree angles to fit around awning posts. The Bosch cordless miter saw makes the on-site work easy.



Pool railing and benches are stained using Superdeck Transparent stain. Note the benches were stained prior to deck coating. The railings were removed, stained and then reinstalled.

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Building Board-and-Batten Doors



By Rob Robillard

Building a board-and-batten door is a task that can be completed in a relatively short period of time and is a project that is suitable for novice woodworkers. In this article we will show you how to build a board-and batten-door using rough sawn, shiplap lumber.

BOARD-AND-BATTEN CONSTRUCTION

A batten door is a simple door constructed of boards in a row, parallel, throughout the whole of its length held together by perpendicular and diagonal support battens. This kind of door is secured

using battens that are nailed or fastened with screws in a crosswise manner. They are often used on barns and storage sheds.

Batten doors have a historical almost country or rustic look and are famous for their basic design. Because there are many different boards in its design, batten doors are extremely stable doors. There is also no technical joinery in a batten door, and its strength is derived from the fasteners used in its construction.

If you were building a traditional batten door you would use the clinch-nail method. The clinch-nail method requires that the nail is driven through the door and then the shank is bent over.

Traditionally, handmade wrought nails were the best to use for clinching. Wrought iron nails were preferred since the metal grain runs with the length of the nail and are thus less likely to break when clinched. Old style "cut nails"

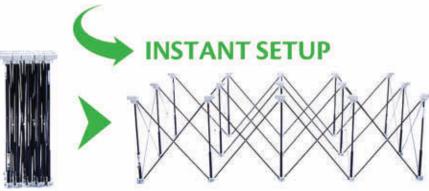
tend to break when clinched. In our article we will be using modern black-colored screws.

SEVERAL CONFIGURATIONS OF BATTEN DOORS

When deciding on how to build a board-and-batten door you need









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PROJECT NEXT

to consider style, security and door thickness. The four door types listed below are all board-and-batten construction but vary slightly in construction.

- 1. Two horizontal battens with one long diagonal brace
- 2. Three horizontal battens and two diagonal braces
- 3. Battens and braces on both sides of the door
- 4. Picture framed door with battens and braces

MATERIALS

Batten doors can be made with tongue-and-groove boards, shiplap or simple boards that are typically suitable for outdoor use. Tongue-and-groove and shiplap doors offer weather resistance by closing off the seams.

Cedar is often the preferred lumber for its inherent resistance to rot and insect infestation, but Eastern White Pine will suffice as well.

BUILDING THE DOOR

The boards used in a board-andbatten door expand and contract in different humidity conditions and the boards will move in different directions. People building board and batten doors often error by trying to glue the edge joints or the battens to the boards. Don't waste your time trying to glue these boards, as the joint will fail.

When choosing fasteners, in the case of screws, make sure you choose the proper length. Choose a length that allows you to securely fasten the battens to the door panel boards but does not penetrate the panel on the opposite side. If you plan on countersinking your screws keep that depth in mind as well.



A circular saw with ripping gauge serves as an excellent tool combo for making long, accurate cuts.

To build the door, first measure your door opening.

Cut the cedar or pine boards into battens long enough to fill the space from side to side. This includes horizontal battens and vertical pieces if using picture-frame style construction.

On a flat surface, lay enough vertically-oriented boards to fill the opening and figure out an appropriate starting-board width and ending-board width. Measure and calculate to determine an equal



Check for square at every joint before fastening.



Cedar is often the preferred lumber for its inherent resistance to rot and insect infestation.

TOOLS REQUIRED FOR THE PROJECT:

- Table saw or circular saw with a ripping edge guide
- Pencil
- Tape measure
- Square
- Block Plane
- Drill
- Drill bits and/or countersink bit
- · Circular saw with rip guide or Miter saw
- · Table Saw is very helpful but not needed
- Primer and paint
- Fastener Driver
- Fasteners
- Boards



The diagonal braces are critical components to prevent the door from racking and sagging.

measurement for both end boards to avoid having one odd size.

Rip your starting and ending boards to maintain the size you determined

Assemble the boards, leaving them slightly longer than the finished height of the doorway.

With a framing square and pencil, lay out the exact measurements of the batten locations on the finished door.

Prime and paint (or stain) all edges of all the boards to be used.

Nail or screw the battens onto the boards.

Trim the excess at top and bottom with the circular saw, and check for square again.

Apply the diagonal braces. You can have one diagonal brace and two horizontal battens or two braces and three battens, depending on design. The diagonal braces are critical components to prevent the door from racking and sagging.

Secure the diagonal brace(s) to the boards. Ensure that the braces point downward and into the hingeside jamb. This is important to resist sagging. The weight of the door keeps the joints between the battens and the braces tight and secure.

Plan your fastener placement so the visible heads look aesthetically pleasing. Install two fasteners per board in the horizontal battens. Avoid placing fasteners in the tongue-and-groove or shiplap joints.

Check the dimensions one final time.

Slightly bevel all outer edges of all the boards, including the battens, with a hand plane.

Install hinges and hang the door. Typically boardand-batten doors are hung on band hinges, gudgeon hinges or "Tee style" hinges.

Once the door is secure in its opening and operates properly, rip 3/8- to 1/2-in. strips of material

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PROJECT NEXT

and apply to the door jamb as a door stop to keep the door closed.

USEFUL TIPS

If you want to give the door additional strength, you can duplicate the batten pattern on the opposite side.

Always paint or seal all six edges, the inside face of the battens and the joints between the boards before assembly. This will ensure your door is best protected from the weather but will also hide bare wood from showing if the wood contracts during dry weather. **EHT**

For maximum sag resistance, make sure the diagonal braces point downward and into the hinge-side jamb.







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Creative Use of Solid Surface



olid surface material, a popular alternative to natural stone, is most commonly used for seamless countertop installations, but offers a wide array of other uses. It is often referred to as "Corian", although Corian is a product developed by DuPont in 1964. Today, solid surface is widely available with brand names including Corian, HI-MACS, Avonite, Formica Solid Surface, Staron, Wilsonart Solid Surface and more. According to SolidSurface.com, the material is made of acrylic resin, polyester resin or a combination of the two

that is then combined with filler, color pigments and acrylic chips. The composition is usually extruded or poured as 1/2-in. thick sheets that are 30-by-144 inches and the same color throughout their thickness.

Solid surface is easy to cut and rout using only standard carbide tipped woodworking tools. It offers seamless installation, it's extremely durable, nonporous and hygienic—even suitable for food preparation. The sheets are available in a wide selection of colors and patterns, and they won't bow, cup or warp. Plus, the solid color

makes the material easy to repair if chipped or damaged.

Although countertops are the most popular application, solid surface is suitable for a broad range of uses throughout the home and offers unique material characteristics that you simply can't get from stone or wood. Check out the following creative uses for solid surface.

VERTICAL APPLICATIONS

Think beyond countertops for solid surface and consider the material for shower walls, tub surrounds, even wainscoting and wall



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cladding. With the proper installation procedures, solid surface sheets can be used in both wet and dry environments. The seamless sheets eliminate the grout joints associated with tile, which are notorious for becoming grimy and difficult to clean, making the material a popular option for bathrooms. Unlike stone, it can also be scrubbed with abrasive cleaners.

The solid surface sheets are generally fastened to the walls with beads of silicone sealant. Dabs of hot melt glue can be used to hold the material in place while the silicone sets. (Because solid surface expands and contracts a small amount, it should not be glued to walls using a hard seam adhesive or it may break itself loose.) Several sheets can be hard seamed together to provide the seamless appearance it is well know for.

DYE SUBLIMATION

A relatively new process called dye sublimation enables the transfer of any design, logo, photograph or image (no matter how simple or complex) into the solid surface material (about 2 to 5 thousandths of an inch). Personalize your living space with your favorite football team logo or even a family photo.

Dye sublimation depends on an acrylic or polyester base to bond with the gassed ink dyes used in the process, which makes solid surface a perfect canvas. To initiate the process, choose your desired image or text—a photograph, digital or vector image—and provide it to your dye sublimation specialist. After approval, the specialist will print the image to an ink transfer plate and heat up both the plate and the solid surface material. Once the materials reach the proper temperature, a vacuum

process is used to transfer the ink on the transfer plate (now in gaseous form) into the solid surface material. The printed piece can then be fabricated, shaped and lightly sanded, in the same manner as any other piece of solid surface material.

THERMOFORMING

Thermoforming is way to create three-dimensional curves and rounded shapes in solid surface material. Thermoforming is the process of heating and shaping synthetic material where other surfacing materials like quartz and granite cannot be used. The material is heated to the point that it becomes very flexible and can be shaped using forms or other tools.

The heating is typically done in an oven. It works best to heat the entire piece of material. (If you heat a small section where the bend will occur, stress may develop at the interface of the heated and unheated portions.) After the material has reached the intended temperature, remove it from the oven and slowly bend it over or shape it into the desired form.

There are three styles of thermoforming ovens; infrared/radiant, hot air/convection, and platen press. No matter what type of oven you use to heat the material, make sure it is large enough to contain the entire piece. The material needs to be heated to within a particular range of temperatures depending on the material composition, and SolidSurface.com offers an online temperature chart of thermoforming specifications for different brands of solid surface.

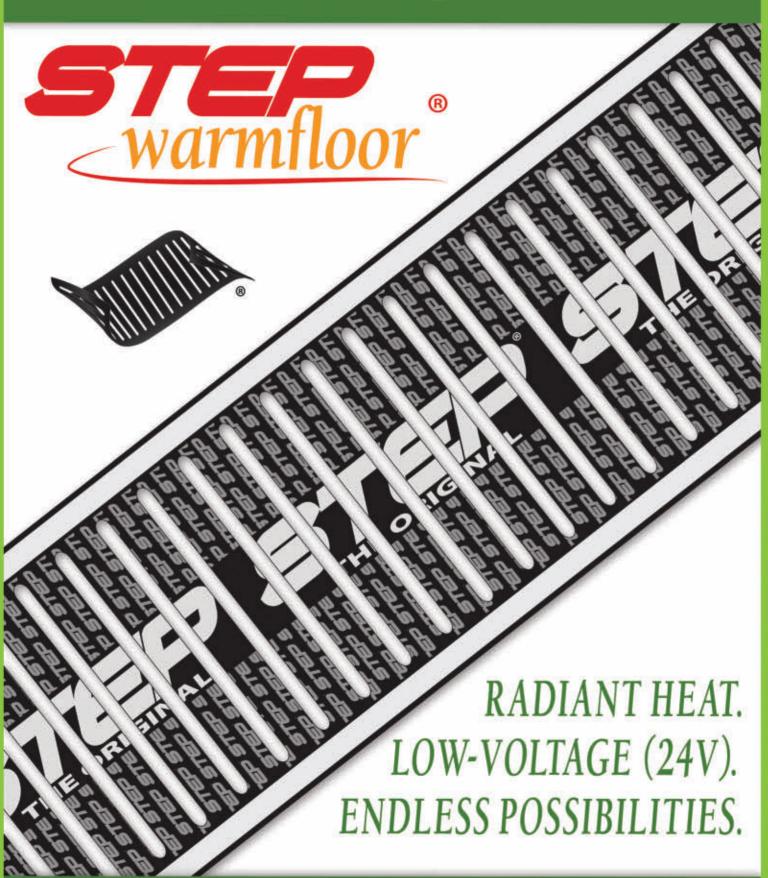
CABINETRY AND FURNITURE

Cabinets made from 100-percent solid surface offer some attractive advantages. They maintain their



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finish with very little effort, offer a vast array of design possibilities, and they stand up to the toughest environments.

Unlike wood cabinets, thermoforming allows you to create 3-D curves and rounded shapes in the solid surface cabinets through heating and molding. Dye sublimation enables you to embed your artwork of choice on the doors or cabinet case.

When it comes to maintenance, solid surface is easy to clean, and scratches can be easily sanded and buffed out of solid surface material. The color of your cabinetry will also never fade, no matter how much you sand it. The non-porous, waterproof properties of solid surface also make it an excellent solution for any

cabinetry destined for a laundry room, child's playroom and any humid or outdoor environment. These same properties inhibit bacterial growth, making the material an excellent choice for kitchens and even hospitals.

CORDLESS POWER

In the near future, homeowners may walk in from work, set their smartphone on the kitchen counter and have the device automatically start charging, with no wires or wall-plugs required.

The manufacturers of Corian are working jointly with the Power Matters Alliance (PMA) to create wireless charging solutions that are embedded right into the solid surface material. Imagine eliminating the clutter of cords and charg-

ing accessories by replacing them with "invisible" charging hotspots located strategically throughout the home.

FINAL THOUGHTS

Solid surface makes a great countertop but so much more. It has the versatility to make the most creative design concepts a reality. Consider this cutting-edge material for your next home project when you want to add some extra pizzazz to your living space. **EHT**



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PRODUCTS

ONEIDA AIR SYSTEMS NEW GORILLA DUCT

Gorilla Duct from Oneida Air Systems is a new affordable clamp-together ductwork for a dust-free work environment. This revolutionary ductwork greatly simplifies installation with no rivets, welding, crimpers or screws needed—it simply clamps together. Besides being easy to install it is also reusable. Want to rearrange your shop, but don't want to order new ductwork? No problem, just unclamp your Gorilla Duct and rearrange accordingly; it's as simple as that. Already have existing ductwork and planning to add more? Gorilla Duct is compatible with all existing ductwork, just add an adaptor to your existing duct and you're ready to expand your shop with Gorilla Duct. Gorilla Duct does not require a precise fit and is easily adjustable, offering the ability to add or subtract length as needed. Visit www.oneida-air.com.



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CEDARSAFE NATURAL CLOSETLINER

Giles & Kendall Inc. is the premier manufacturer of CedarSafe Natural ClosetLiner made from 100-percent Aromatic Eastern Red Cedar. Cedar closet lining is offered in solid tongue-and-groove planks and 4x8-ft. and 16x48-in. flakeboard panels. Cedar closets are an easy way to add luxury to custom home construction or remodeling projects without adding to the bottom line. Aromatic Eastern Red Cedar not only looks and smells



luxurious but also offers a real functional benefit to closets by naturally protecting fine garments vulnerable to moth and silverfish damage. Plus, the material is not just for closets. When installed in pantries and beneath sink cabinets, cedar may repel perhaps the most unwanted insect pests, cockroaches. Furthermore, Aromatic Eastern Red Cedar has been shown to naturally resist mildew and can transform basements and attics into additional off-season storage. Visit www.cedarsafe.com or booth S1255 at the International Builders' Show.



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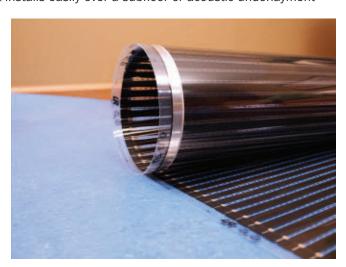


PRODUCTS

PERFECTLY WARM RADIANT HEAT FILM

MP Global Products introduces Perfectly Warm Radiant Heat Film, an in-floor electric heating system that distributes gentle draft-free supplemental heat that will add comfort and coziness to any room in a home. Certified safe for floating wood, engineered wood, luxury vinyl and some floating tile floors, the low wattage roll-out system is clean, quiet, hypoallergenic and maintenance-free. It installs easily over a subfloor or acoustic underlayment

and is controlled locally by individual programmable room thermostats. The lightweight line-voltage system disperses gradual, evenly consistent supplemental warmth from low-wattage resistance heating of the ultra-thin, flexible radiant heat film. It uses just 12 watts per square foot and conforms to warranty requirements of many floating floors. Featuring an ultra-thin wireless filament configuration (just .016" thick), Perfectly Warm Radiant Heat Film installs quickly in one day without any mess, mortar or glue. Simply roll out each panel and cut it to length. Each panel has wires pre-attached at one end for easy installation. Direct all lead wires toward one central electrical box, with final connection by a licensed electrician to the electronic programmable thermostat. Visit www.quietwalk.com.



FYPON CLASSIC WOODGRAIN PRODUCTS

Fypon introduces a new line of Classic Woodgrain decorative millwork and moulding pieces. Made of durable polyurethane, the products come with a refined woodgrain texture suitable for either staining or painting. More than two dozen new Classic Woodgrain pieces are being introduced by Fypon, including a variety of crown, casing, baseboard and apron mouldings, plus crossheads, plinth blocks and a closed-end beam. As with all Fypon products, the Classic Woodgrain pieces cannot be penetrated by moisture or insects. They also resist rotting, warp-

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ing, cracking, chipping, peeling, and are weather-resistant. Visit www.fypon.com.





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PRODUCTS

PROWOOD DURA COLOR

ProWood Dura Color is the latest advancement in treated lumber. Dura Color is treated with an EPA-registered waterborne wood preservative system to protect against termite attack and fungal decay. It's also color-infused, so pigment is driven deep into the wood fibers, creating beauty that's guaranteed to stand up to the elements for years. ProWood Dura Color doesn't use a topical finish or stain that quickly fades away. The Dura Color lumber colorant penetrates the wood during the pressure-treating process, featuring a natural tint that allows the wood's characteristics to remain visible. The lumber is approved for use in decking and above-



ground applications with a 2-year no-fade limited warranty. The product also offers a lifetime limited warranty against termite attack and rot (fungal decay), and the treated wood is compatible with aluminum fasteners. Visit www.prowoodlumber.com.



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The crystal clear Gorilla Shipping Tape is water- and temperature-resistant, nearly 3 inches wide and has a 3.4-mil thick construction to stand up to the toughest package deliveries. Its smooth, quiet dispensing secures packages quicker and easier with its wider tape construction, easy-to-grip dispenser and problem-free tear. Gorilla Shipping Tape offers heavy-duty strength and durability when it counts the most—protecting your valuables when shipping, moving or simply organizing. Visit Gorillatough.com.

DAVINCI ROOFSCAPES' NEW PROFILE AND 50TH COLOR

When the doors open at the 2015 International Builders' Show, attendees will have their first chance to view a new slate profile being launched by Davinci Roofscapes. The company's Single-Width Slate 12-inch tiles have a more authentic quarried look with a thicker, more realistic profile that accurately replicates genuine slate. Deeper impressions in the tiles make them appear thicker, even though they're the same weight as previous tiles in this product offering.

Builders and remodelers will also be able to see the company's new 50th color—Smokey Gray, the darkest gray available from the company. This deep, rich blackish gray is reminiscent of real slate. Visit www.davinicroofscapes.com or booth C2136.





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VAMPLIERS PRO 8-IN. MODEL

The new 8-in. VamPliers Pro incorporates concave inner jaws along with a combination of horizontal and vertical serrations to maximize the contact when extracting problem fasteners. Use VamPliers to remove stuck fasteners that are stripped, rusted, corroded or otherwise damaged. Remove Torx screws, nuts and bolts. The top teeth are inter-meshed for a non-slip grip, the narrow

> nose can access confined spaces, and the serrations between grips can be used as wire pullers. The wire cutters are hardened to HRC58±2 (Rockwell standard), and the ergo-nomic handles ensure user comfort. Visit www.vampiretools.com.





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GRK's Kameleon composite deck screws blend in with your deck for a nice finished look. The patented fiber-trapping rings keep dust under the surface, eliminating the mushrooming effect regular deck screws cause in composite deck boards. The Kameleon screws blend nicely with most popular composite decking such as TimberTech, Trex and other popular brands. The Kameleon also features a countersinking head with cutting

> teeth to bore a perfectly clean hole. The W-Cut thread design and Zip-Tip at the bottom of the screw offers low installation torque and no pre-drilling. The Climatek coating, AC-257, protects against corrosion. Kameleon screws are available in a variety of colors and sizes found nationwide at your local lumber yard, hardware dealer or home center. Learn more at www.grkfasteners.com



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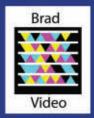
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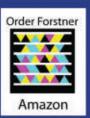














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