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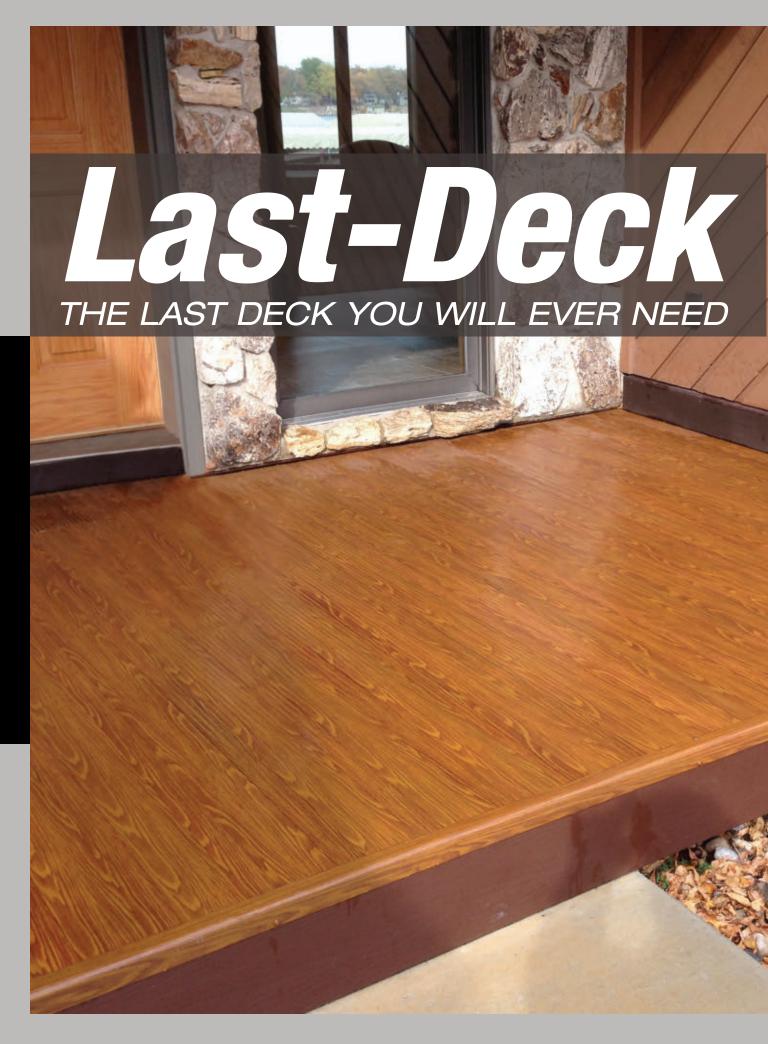
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When the size of a patio project is too large to DIY, it's time to call the pros

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Cover photo courtesy Deckorators



Fasteners that contractors and engineers agree on. Find out why!

From The Editor-In-Chief

saw an interesting study recently on what Americans want in a dream home. Northshore Fireplace surveyed 2,000 Americans to determine their hopes for a house in the future. It turns out, people are thinking big.

According to the results, the average American wants a home with 7.5 rooms in a comfortable 2,195-sq. ft. home. Boomers prefer a beach location, Gen-X is partial to the country, and Millennials like the suburbs. Among the most important features was "a view with peace and quiet." By the way, new homes are in style now, not some crummy old renovation (ahem), and the "most desired luxury" is land and privacy.

When it comes to exterior style, Millenials and Gen-X prefer a modern look, while Boomers prefer a ranch style. As far as interior styles, males want a modern look while females leaned more traditional. The most popular words used to describe a dream home were: comfortable, cozy and spacious.

Only 15 percent of respondents said that being close to good schools is important, so I'll go out on a limb and tout these folks as the smartest of the bunch.

As far as the dream of owning a home, 75 percent of people feel that homeownership is a lifestyle choice rather than a necessity. Twenty percent of millennial's claim to get anxiety at the very thought of owning a home, however 60 percent of those same Millenials plan to own a home within the next 5 years. In fact, 64 percent of Americans believe they will be able to obtain their dream home in their lifetime.



What's the listing price of the average American Dream Home? It's a modest 1.3 million dollars.

Kind of a steep sticker-price, right? I think so.

Well, it's always nice to dream.





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My new home has a thermostat setting for "Emergency Heat?" When is the appropriate time to use
 that setting?

• "Emergency Heat" is an optional setting for a heat pump, but it should only be used in true emergency situations, such as when your heat pump has stopped working altogether. Heat pumps condition the air of your home by moving or "pumping" heat out of the house in the summer and into the house in the winter. During colder months, it becomes difficult for the pump to extract heat from the outside air, so heat pumps require a secondary heating source, which is usually located in the indoor unit. As temperatures fall, your heat pump (first-stage heat) automatically taps into the Emergency Heat source (second-stage heat) in order to heat your home. Most heat pumps use electric heat coils (like a toaster) as a backup, but those electric coils use a lot of electricity. And when you run a heat pump on "Emergency Heat," you're using those heat coils constantly. The heat pump will stop trying to extract heat from outside and instead it will use only the backup heat to warm your home. Operating the system this way essentially turns your heat pump into an electric furnace—which costs even more to run than a gas furnace and defeats the purpose of having an efficient heat pump. So, only use the "Emergency" setting when the heat pump has stopped working completely, and if that's the case then you should call an HVAC professional.

• I've read the long list of items to avoid flushing into a septic tank, but are there any proactive steps I
• can take to help the condition and performance of my system?

Avoiding certain chemicals and materials is important for proper septic tank care, but there are a few
 extra steps you can take as well. Since septic tanks use bacteria to break down solid matter, many service





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professionals recommend flushing a quart of spoiled buttermilk down the toilet every few months as a natural method to add healthy bacteria to your tank. Store-bought additives such as Rid-X help maintain a healthy balance of septic bacteria throughout the year to prevent expensive backups. It's also important to have the tank pumped periodically, based on usage and the number of people in your house. The average schedule is every one to five years.



• What are the advantages of using milk paint on furniture?

 Milk paint is a water- based paint with the main ingredient, casein, a milk protein, commonly sold in powder form. Used for thousands of years, milk paint is extremely durable and is very safe and non-toxic once applied. When mixed with water, milk paint grants more control over a finishing project than standard latexor oil-based paints. It can be used either as paint or as a dye (wash), depending on the amount of water in the mix. The wash allows wood details to show through the finish and can be protected with a finishing product such as varnish or oil. Milk paint can also be used to give a project a worn antique finish (such as cracks) by varying the paint thickness, or by using a crackling medium. It will not flake off or peel and it allows a wide variety of effects. The biggest advantage of milk paint is its "antiquing" ability, which can highlight the wood's grain and textures. EHT

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Drill Bit Guide for DIY'ers



rom routing wires to drilling pilot holes for fasteners, drill bits are indispensable tools for the professional tradesman as well as the DIY homeowner. In this article, *EHT* explores a wide range of drill bits to cover the basic types and their various applications.

TWIST BITS AND COMMON MATERIALS

The standard twist-type drill bit is the most mass-produced drill bit on the market. The geometry and sharpness of the cutting edges determine the performance of the bit. The most common twist bit

has a point angle of 118 degrees, which is suited for all sorts of general-purpose tasks. Sharper points, such as a 90-degree angle, provide more aggressive cutting power for materials such as soft plastics. A shallower tip angle, such as 150 degrees, is designed for applications such as drilling steel (but requires a starter hole). The general rule is that harder materials require a large point angle, and softer materials require a sharper angle.

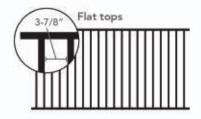
Today's twist bits are available in several material types. Soft, low-carbon steel bits are inexpensive, but are only used in wood and require frequent sharpening or replacement. High-carbon steel bits are somewhat more durable and can be used in metal or wood, but excessive heat can damage the cutting edge. For better quality and a step up in hardness, high-speed steel bits (HSS) are more tolerant of heat and can drill through softwoods, hardwoods and metal.

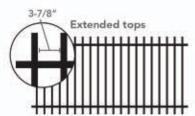
Additional materials are now being used to ramp up the performance of today's metal-drilling bits. Cobalt bits are designed for drilling the toughest materials, like hardened stainless steel, cast iron and titanium. These bits combine HSS with a percentage of cobalt,

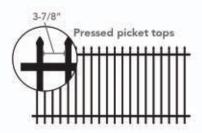
Drill America D/ACO cobalt drill bits are made of heat-resistant m42 cobalt and ground to a heavy-duty 135° split point.

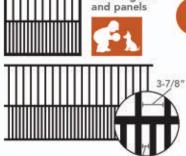
They are similar to high-speed steel, but with more cobalt for improved performance when cutting harder metals such as stainless steel or nickel alloys. Photo © Drill America.

TAKE A CLOSER LOOK

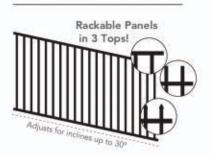








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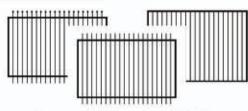
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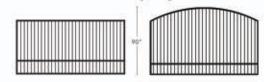
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which results in a bit that resists up to 1,100 degrees Fahrenheit to drill extremely abrasive materials that would normally destroy other bits.

Tungsten Carbide is an extremely hard material that will stay sharp longer than other bits. However, because the material is so brittle, these bits are typically made of HSS and "tipped" with tungsten carbide, so the bits maintain strength and cut down on cost.

Coatings are another hot trend in drill bits. Heat is the single largest hindrance in the life of the bit, and high-tech coatings help resist heat. A Black Oxide coating can double the life of standard HSS bits for all-purpose drilling in wood, plastic, carbon and alloy steels, aluminum and soft cast

iron. Titanium Nitride coating is a very hard ceramic material that can dramatically extend the life of the cutting edge when used to coat HSS bits. Titanium-coated bits will last longer than standard Black Oxide bits and cut through more materials.

Diamond powder is another coating used as an abrasive for cutting ceramic, stone and even glass. Diamond bits generate a lot of heat, though, and should be used with water to cool down the cutting process.

BRAD-POINT BITS

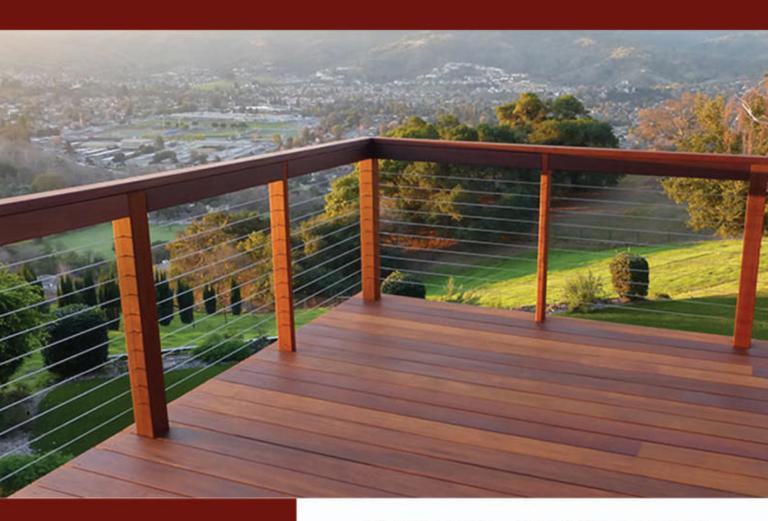
Standard twist bits can wander or skate across the work surface, especially if the bit in question has a wide point angle. In metalwork, drilling a pilot hole can compensate for this, but when drilling in wood, it saves time to use only one bit like a brad-point. Similar to a twist bit, a brad-point bit incorporates a spur with a sharp point into the tip of the bit. The sharp point penetrates the work surface to hold the bit in position while the sharp corners surrounding the spur cut the wood.



The Kik brad-point bits from TG Tools are tipped with six cutting edges to provide 20-percent more cutting surface when compared to standard brad-points.



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Additionally, with the outside corners of the brad-point bit leading the cutting action, the wood fibers at the edge of the bore are cut for a cleaner hole. Brad-point bits are also effective in soft plastic, but are not generally used for metal because of their tendency to bind.

SPADE BITS

For quick drilling of large holes, spade bits offer plenty of productivity with their paddle-like shape. A typical spade bit is flat with two cutting edges flanking a spur, which guides the trajectory of the drilling. It should be noted that spade bits are intended for roughin work such as framing, plumbing and electrical work, because their aggressive cutting and high-speed action can leave a splintery hole.



The Kik spade bits from TG Tools are engineered with 30 percent more cutting surface. Plus, these spade bits eliminate the spur commonly found on similar bits, which allows them to drill curved holes for plumbing and electrical installations.

HOLE SAWS

They're called hole saws, but they fit on a drill—these cupshaped bits cut out large circles or cores of wood for everything from plumbing to doorknob installation. Quality hole saws feature highspeed steel cutting edges bonded to a steel cup with the added advantage of variable pitch teeth. The repeating pattern of teeth and variable pattern gives smoother cutting in a variety of materials, when compared to the standard wavy pattern of teeth.

Popular new hole saw accessories include quick-change adapter nuts and mandrels that work with almost any manufacturer's hole-saw cups. (Mandrels are the centering bit and support piece that hold the hole-saw cups.) The quick-change system makes it easy to change cups in seconds and move effortlessly between applications, sizes and materials. Users simply attach the adapters to their cups, drill a hole, and pull back on the mandrel to change cup sizes in seconds. The quick-change system also eliminates the time-consuming task of digging the plug out from the middle of the cup.



The Diablo 10-Piece Hole Saw Kit features five hole saw cups (bimetal and carbide tipped) and Diablo's SnapLock PLUS mandrel system, including two pilot bits, for quick and easy hole saw cup changes. Photo © Diablo.



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COUNTERSINK PILOT BITS

Countersink bits allow you to simultaneously pre-drill screw holes in wood and countersink the holes for recessed screw heads. These bits belong in every toolbox, but are often unduly overlooked by DIY'ers—and the result is split wood when driving the screws. Countersink bits are available in several sizes to match standard screw sizes. Some versions have



Milescraft includes bits for drilling pilot holes for screw sizes #6, #8, #10 and #12. Photo© Milescraft.

The 4-piece countersink set from

an adjustable twist bit fitted into the countersink body. To match the bit length to the screw length, just loosen the hex nut on the countersink collar, slide the bit in or out, and then retighten.

FORSTNER BITS

Named after their inventor. Benjamin Forstner, Forstner bits are the best choice for drilling precise, flat-bottomed holes in wood. Forstner bits have a center spur as a guide and radial cutting edges that shear wood fibers at the edge and bottom of the hole, creating a smooth bore with an





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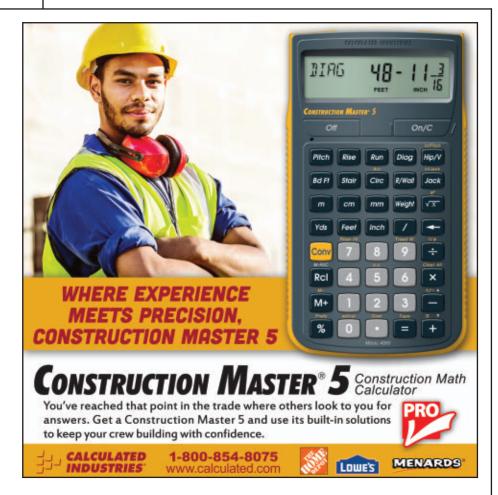
exact diameter. They can cut on the edge of a block of wood to create channels, and can also be used to create overlapping holes. Forstner bits require a lot of force to drive them into the wood, so they're typically used in a drill press. These bits also have no method of clearing wood chips, so they should be retracted periodically to clear the hole.

STEP BITS

Cone-shaped with a "staircase" profile, step bits can drill a wide range of hole sizes with a single drill bit. Step bits can bore metal, wood, plastic and PVC. Look for a step bit that automatically deburs the holes as it drills—a nice feature because burring can sometimes be a problem with standard step bits.



Cone-shaped with a "staircase" profile, step bits can drill a wide range of hole sizes with a single drill bit. The Milwaukee SHOCKWAVE Impact Duty Electrical Step Bits are engineered to deliver best-in-class performance in impact drivers with the versatility to be used in drills. Photo © Milwaukee Tool.



AUGER BITS

Auger bits are great for boring deep holes to install plumbing or electrical lines. Because they're

intended for deep drilling, they feature a long, deep spiral flute to effectively remove chips. A common 7-inch auger bit can drill through three 2x4's, although some versions, called ship augers, range in size up to 18 inches.



GLASS AND TILE BITS

Two types of bits are available for glass and tile drilling. Some glass-and-tile bits from have a spear-pointed carbide tip to reduce bit wander and bit walking. The carbide tip prevents bit cracking when using with hard materials. Available in a range of sizes, these spear bits provide smooth, accurate drilling in ceramic tile, marble, china, mirrors and glass. These are a good choice for drilling fastener holes in bathroom tile or wall mirrors.

A second concept for glass and tile, diamond-grit drill bits utilize a circular cutting edge, like a hole saw, to power through class 5 tile, marble, porcelain, granite, slate and glass quickly and cost effectively. To use freehand, position the bit at an angle to pilot the hole. Slowly begin the edge of the hole and gradually center the bit directly

Bosch Glass & Tile Bits feature a spear point to reduce bit wander and a carbide tip to prevent bit cracking when using with hard materials. Photos © Bosch.

above, drilling down to eliminate the risk of drill-bit wander. As the bit drills through material, the hollow barrel of the bit creates a core that helps guide the drill and eliminates skating. These "wet drill bits" must be water-cooled when in use.

MASONRY BITS

Masonry bits are a variation of the twist-bit design and are typically used with a hammer-drill for its high-impact action. They feature a chisel-like tungsten carbide tip to break up stone, brick or concrete, while the flutes pull back the chipped material. Because these bits occasionally get jammed with crushed masonry, it's best to operate the hammer-drill with a pumping action. Masonry bits are excellent for installing wiring and plumbing in existing structures.



Masonry bits are a variation of the twist-bit-design and are typically used with a hammer-drill for its high-impact action. Photo © Bosch.



Take Measures to Get Your Perfect Light Fixture



This six-light linear chandelier from Kichler Lighting's Marquee collection brings a contemporary spin to a farmhouse staple, mixing clean, simple lines with a smooth wood-tone finish. Photo © Kichler Lighting.

the new fixture needs to fit appropriately in the space. A grand chandelier, for example, will not fit in a foyer with an 8- or 9-ft. ceiling height. If you have an 8-ft. ceiling, consider a flush-mounted fixture to achieve the clearance requirements for the room.

Depending on the room or placement of the fixture, the hanging length or height of a fixture is equally as important as the size. As a rule, keep 7 feet of clearance from the floor up to the bottom of the fixture in a space like a foyer, living room or bedroom where people typically walk underneath the fixture. In an open foyer or hallway, hang chandeliers or pendants with the bottom at least 6 inches higher than the door.

Bathrooms are another room where ceiling height measurements are extremely important. Hanging chandeliers and pendants over a bathtub adds a touch of elegance. Measure the height from ceiling to floor and measure the space between the top of the tub and the bottom of the fixture. At least 8 feet of clearance is required. If the bathroom is small and cannot accommodate this rule, consider using a smaller fixture. Or, do not hang the fixture directly over the tub; instead, install it at least 3 feet away from the tub.

ighting is the finishing touch to a room's design. It is the element that changes the mood of the room and gives life to the space. There are many options for home lighting, and it can be intimidating to think about making the right decisions for each room. The American Lighting Association (ALA) can help with a listing of local ALA-member lighting showrooms with trained experts to help with design inspiration, lessons on the latest technology and selecting the perfect lighting for your space.

Before visiting a lighting showroom, be prepared with basic information about your space. Some of the most important questions the showroom sales staff will ask are questions about size. Take as many measurements as possible. A little preparation will ensure that you select the perfect fixture for your space.

Before leaving home, take the following measures.

Ceiling height—When shopping for a hanging light for a high ceiling, make a note of the room's ceiling height and the length and width of the room. If a fixture is already hanging in the space, give an estimation of its size. Bring pictures of the space, making sure that the picture gives some perspective on the size of the room.

Fixture Size—Keep in mind that

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While many people like to have a ceiling fan above their bed, if this is not a requirement for you, a stunning chandelier can add style and serve as a decorative focal point in the room. Photo © Feiss.

Other measurements to take to the lighting showroom include measurements for fixtures that will hang over a dining room table or kitchen island. Measure the table length and width. The length of an appropriately sized fixture will be at least one foot shorter than the length of the table. Also bring basic information about the size and shape of the table. It is a good idea to bring a picture of the table in the space as a good reference for the showroom salesperson.

Today's larger kitchen islands can typically accommodate a series of small pendants or a grouping of large pendants. Start by measuring the length and width of the island and take note of the shape (square, rectangle, peninsula, etc.). Measurements are very important, because for smaller pendants equal space needs to be accounted for around each pendant. For larger pendants, hang even numbers (two

NEW WAYS TO LIGHT YOUR BATHROOM

While functionality is still key, stylish and unique bathroom lighting designs are becoming increasingly popular. To meld the two, ALA recommends utilizing creative ways of installing fixtures and layering light.

The bathroom is used for various, task-oriented activities from applying makeup, to shaving, to getting dressed. Therefore, proper lighting is first and foremost when producing a bathroom lighting layout.

To create an illuminated sink area, the days of just a simple bath bar above the mirror are in the past. Today, people are installing fixtures around the mirror in creative ways to add style and function. For example, try installing swing-arm sconces on either side of a bathroom mirror. These versatile fixtures come in a variety of styles and can be moved around according to your needs. Vertical lights on either side of a bathroom mirror provide the most even illumination, so utilizing wall-mounted sconces or bath bars on the sides of a mirror are also popular trends.

Layers of light are important in every room in the house, and the bathroom is no exception. Recessed cans in the bathroom serve the important role of providing overall illumination, especially in a large master bath. A stunning statement chandelier can also brighten up the space and add a personal touch to the overall bathroom design. Consider hanging a chandelier over the bathtub for a dramatic and elegant look.

Pendants, a fixture often reserved for the kitchen, can also work in the bathroom. They can take the place of a single, larger chandelier over the bathtub, or can be hung on either side of a mirror, in place of the wall-mounted options mentioned above.



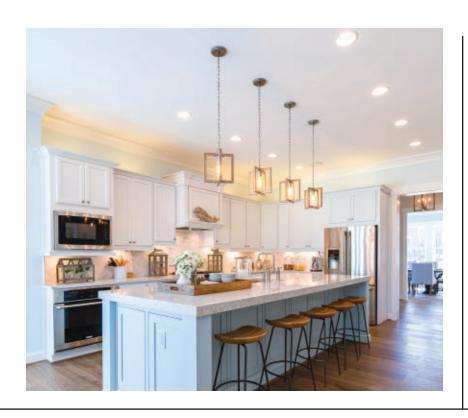
To ensure ultimate functionality, all of your bathroom fixtures should be placed on dimmers. This allows you to easily adjust light levels based on your needs, whether taking a relaxing bath or applying makeup in the morning.

versus three pendants, for example) and plan for each to be about one third the width of the table or island below.

For both dining tables and islands, measure the height from the floor to where the bottom of the fixture should be. A good rule of thumb is to hang mini or medium-sized pendants 66-72 inches from the floor to the bottom of each fixture.

Lighting showrooms are a great source for components and other

Today's larger kitchen islands can typically accommodate a series of small pendants or a grouping of large pendants. Photo © Progress Lighting





MATERIAL MARKET

lighting accessories. When purchasing bulbs, shades or replacement glass for fixtures, there are a few pieces of information the showroom staff needs in order to help most effectively.

Most showrooms carry a wide variety of bulbs. Buying bulbs at a showroom gives benefits well beyond simply replacing a bulb. Showrooms have invested in knowledgeable sales staff who truly care about educating their customers on light sources.

When seeking a new shade for a table, floor lamp, chandelier or sconce, bring the measurements of the lighting fixture as well as the measurement of the current shade. If possible, bring a photo of your fixture and shade too. Or, even better, bring in the shade you want to replace. The same goes for replacement glass, and if you know the manufacturer and part number, provide that information too.

Above all, expect an enjoyable experience at a dedicated lighting

showroom. The experts at ALAmember showrooms are the best resource to help with all lighting decisions. **EHT**

Editor's Note: This article appears courtesy of the American Lighting Association, a trade association representing over 3,500 members in the residential lighting, ceiling fan and controls industries in the United States, Canada and the Caribbean. To learn more, go online to ALALighting.com.

CREATE A COZY HOME WITH HYGGE

Want to make your home as cozy, calm and relaxing as possible? Try hygge (pronounced: hue-gah), a Danish lifestyle trend that has captured the imagination of lighting and interior designers, as well as homeowners. More than just a décor trend, hygge is a state of mind—one of cozy contentment while appreciating the simple things that bring joy to your life.

According to the American Lighting Association (ALA), lighting is a key element in hygge, which takes a minimalist concept and punctuates it with warmth, texture and glow. One of the most effective ways to create a warm and cozy atmosphere is by the placement and adjustment of lighting in the home.

The gentle glow of candles, which symbolizes the hygge trend, is complemented by soft, mood-provoking electric lighting. With hygge, interiors are lit to create a pleasant ambiance. Light and shadow are equally important elements, as they contribute to a feeling of warmth and naturalness.

"Lighting is a critical element for a hygge atmosphere," says Tim Stumm, creative director for Z-Lite. "Of course, there is the warm glow of candles, but make sure you incorporate the proper lighting design using Kelvin temperatures 2400K to 2700K. These temperatures are best to create intimate, calm and the most soothing lighting possible."

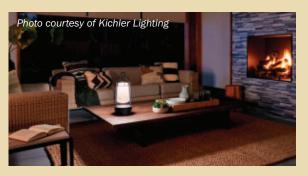
Using several light sources that scatter warm light throughout a space is the best way to create hygge. Table and floor lamps, wall sconces, and pendant lights provide light as well as a soothing and inviting feel, giving plenty of options for different moods and settings.

Transform space with shadow and light by placing lamps in spots chosen to highlight a room's decorative elements. Adding a few softly lit pendant lights brings a serene, diffused glow that creates areas of darkness as well as light, increasing the sense of tranquility.

Something that won't be found in hygge décor is harsh overhead lighting. To quote the Swedish fashion and lifestyle Youtuber Jenny Mustard: "Ceiling lighting is where hygge goes to die."

To add a comfy, hygge-worthy glow to your home, follow these lighting tips:

- Limit the use of ceiling lights. If overhead lighting can't be replaced with lamps, install a dimmer on the ceiling light to make the room glow with warm, low light.
- Select light bulbs with a low lumen number that are warm white or soft white in color. A bulb's lumen number determines

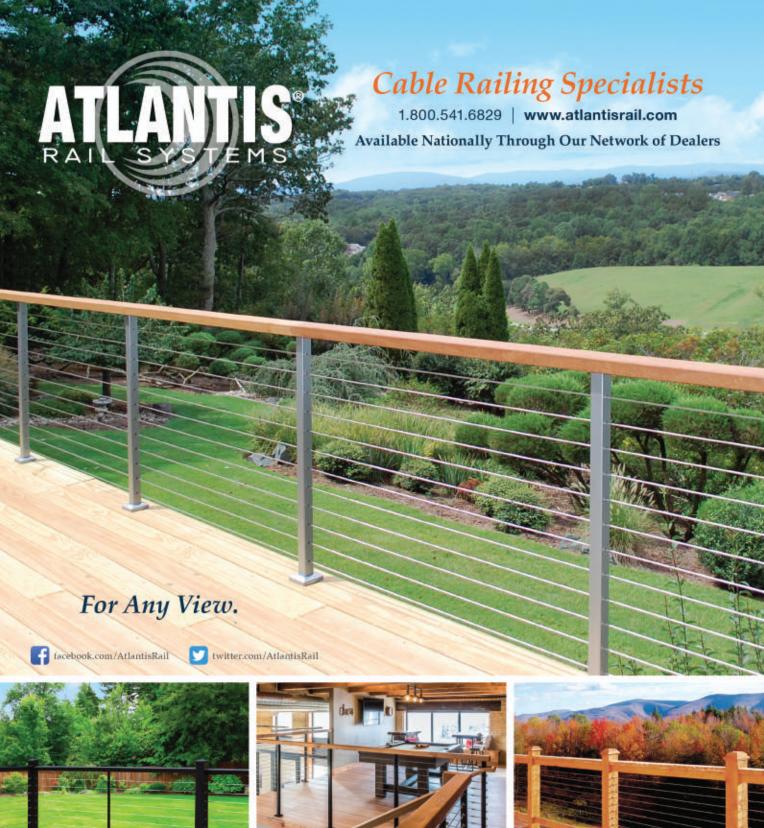


how bright it is. The higher the lumen number, the brighter the bulb. Try for a comfortable brightness that still gives good visibility.

- Use LED candles for a pleasant flickering glow. It is always wonderful to walk through rooms lit by the magical radiance of candlelight.
- Choose LED light bulbs that can be dimmed to a warm white color temperature to create a soft aura.
- Place darker shades on table lamps and floor lamps for a deep, soothing glow.
- Bring the outdoors in through lighting. Heavily influenced by nature, hygge style, much like Scandinavian style lighting, nods to natural phenomenon like the colors of sunsets and wood burning in a fire. Organically shaped light fixtures, reminiscent of tree branches, and the use of natural fibers and fabrics epitomize the hygge style trend.

While cozy lighting is essential for dark winter nights, the long, light-filled summer days also harmonize with hygge. Light, in general, is critical to hygge, whatever the season.

In the summer, hygge capitalizes on outdoor living. As the sun sets, light outdoor spaces with twinkling rope lights and table lamps, pendants and chandeliers made specially to withstand outdoor conditions. Inside, use natural decorative elements and highlight them with fairy lights or electric lanterns. Take advantage of natural light flowing through the windows to create dramatic dark and light contrasts.









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DECK PRODUCT ROUNDUP

t won't be long before the weather breaks, and everyone is back to building outdoors. The time to plan your new deck is at hand, and here's a roundup of new products to consider for the project.

DECKORATORS VOYAGE COMPOSITE DECKING

Deckorators has expanded its line of wood-alternative decking with the launch of Voyage (pictured). This new line of composite decking features patented Eovations technology. Like other members of the Deckorators Eovations decking family, Voyage delivers the industry's best strength-toweight ratio, absorbs virtually no moisture, and allows virtually no thermal expansion or contraction. Voyage adds to these benefits unique textured embossing for superior traction on the deck surface, along with the bold look of vertical grain variegation. The textured embossing offers homeowners the enhanced safety of superior traction underfoot in both dry and wet conditions. Deckorators Voyage decking provides 34 percent or greater surface traction than other leading brands of composite decking. Voyage is also 35 percent lighter than most wood-plastic composite decking and similar in weight to PVC for easier handling on the job site, but it's twice as strong as PVC decking in terms of stiffness-to-weight ratio for superior durability. Visit www.deckorators.com/deckexpo.





DECK PRODUCT ROUNDUP



ATLANTIS RAIL CABLE RAILING

Atlantis Rail offers a complete line of stainless steel and aluminum cable railing systems. These low-maintenance railings feature unobstructed views that fit any indoor or outdoor, commercial or residential design. Enjoy the streamlined look of the RailEasy models that mix traditional wood or vinyl with the modern look of stainless steel. The NOVA II System combines stainless steel cable railing with aluminum posts and rails. Atlantis also offers a line of concealed hand swage cable railings called the HandiSwage Systems. For a completely stainless steel cable railing system, Atlantis Rail offers the SunRail line that features an easy installation while achieving a custom look.

Atlantis Rail's Spectrum System is a cable railing system that features pre-drilled square posts and fittings to surface- or fascia-mount posts and mount customer-supplied flat handrails. The posts are powder-coated stainless steel and available in standard colors of black or metallic silver (and special colors of pure white, pebble grey,

light brown and dark brown). There are many additional features that can be added to the Spectrum System, including handrail mounting brackets to add an ADA -compliant handrail. Visit www.atlantisrail.com.

DECKORATORS BY HINKLEY LIGHTING

Deckorators has collaborated with Hinkley Lighting to bring an elegant new line of low-voltage lighting to outdoor living:

Deckorators by Hinkley Lighting. The Hinkley brand creates indoor and outdoor lighting that is refined but with a modern point of view, crafted with a blend of innovation and artisanship. Deckorators by Hinkley Lighting delivers a wide selection of 12-volt LED post cap, step light and deck sconce lowvoltage options to coordinate with Deckorators composite decking and railing. All options offer ease of installation, exceptional illumination, and a fiveyear LED and manufacturing defects limited warranty. Visit www.Deckorators.com/Hinkley.

CTA OUTLAST

Manufacturers of treated lumber are adopting a new guideline in their manufacturer's warranty: Specifically, it you don't coat your end cuts with a preservative—and use the *correct* preservative—then your treated lumber won't be covered by the manufacturer's warranty. Enter CTA Products, which offers Outlast Q8 Log Oil containing the required oxine copper to treat end cuts. In fact, Outlast Q8 Log Oil is the only deck stain end-cut product on the market, so you can achieve your desired wood color along with





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DECK PRODUCT ROUNDUP



the required protection in a single application. Choose from six color tones, including Natural Base, Light Gold, Medium Gold, Medium Reddish Brown, Dark Brown and Barn Gray. You can learn more about end-cut preservative treatment at www.outlastcta.com.

WISECOAT WATER-BASED HARDWOOD FINISH

Lately, there has been much talk over new regulations regarding lower VOC levels in wood coatings and finishes. If you need a solution for local and state regulations or just want a new finish option for your wood project, consider WiseCoat by DeckWise. While the DeckWise flagship hardwood finish, Ipe Oil, is already a low 250 g/I VOC, the company has a new 53 g/I VOC environmentally friendly finish to offer in the WiseCoat Premium Hardwood Deck, Siding & Fence Sealer. If you live in an area with current low-level VOC regulations, you are already accustomed to the benefits of a low-VOC wood finish. You will be glad to know this waterproofing sealer for hardwoods or

thermally modified wood is a onecoat application finish. It sinks in deep to coat the microscopic wood fibers and is guaranteed to impede water intrusion for up to 10 years on vertical surfaces and 6 years on horizontal surfaces.







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PRODUCT ROUNDUP

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ent tint adds UV blockers to prevent your project from graying, while enhancing the natural wood grain. Visit www.deckwise.com.

age naturally and its semi-transpar-

INSTA-RAIL TUBE KIT

The Insta-Rail Tube Kit 36" is a stainless steel vertical infill kit for existing or new deck projects. Note: This product is not a cable rail. The kit requires a distance of 24-1/2 inches from top to bottom rail and will fill up to 72-in. width. The kit width can be cut to fit. Spacing



between vertical tubes is 3-1/4 inches, and the Tubes are 3/8-in. diameter. All components are made from stainless steel. The kit includes mounting channels, studs, anchors and tubes. The Insta-Rail Tube Kit offers fast, easy installation with basic hand tools. Visit www.dolleusa.com.

SURE HOLD FASCIA BOARD SCREW

Sure Drive USA has launched a new composite fascia board screw that installs without the need for an expensive countersink bit. The Sure Hold fascia board screw has been designed with wings that auger through the fascia and trim board, creating an oversized hole. The oversized pilot hole allows for the expansion and contraction movement and keeps fascia board panels straight. No pre-drilling is required to install this superior engineered fastener. The Sure Hold fascia board screw has a self-starting Type-17 auger tip that eliminates splitting and starts faster. Made from strong 410 grade coated stainless steel, these screws will hold up to a variety of extreme weather conditions. The oversized





flat top head design covers the oversized pilot hole and comes in a variety of colors. Mahogany, Earthtone, Graystone, Ipe and White painted heads are available to match your composite fascia board project. Visit www.suredrive.com.

CAMO DRIVE WITH EDGECLIP AND EDGEXCLIP

National Nail's CAMO deck-fastening innovations can install decks up to 5X faster than traditional methods. The new CAMO Drive, a collated, ergonomic standup tool that attaches to any drill, offers three fastening methods-Edge, Clip and Face. The CAMO Drive is easy-to-use, versatile, and easy on your body. CAMO also offers the new EdgeClip and EdgeXClip for installers who are frustrated with clip installation. The Never-Miss Guide included in every EdgeClip and EdgeXClip pail, makes installation faster. For extremely fast installation, use the Camo DRIVE with the Clip Guide. A deck installed very quickly with new CAMO tools creates a smooth, fastener-free surface that is beautiful and barefoot-friendly. Visit www.camofasteners.com.





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DECK PRODUCT ROUNDUP

TREX ENHANCE COMPOSITE DECKING

High-performance, stellar looks and affordability in a composite deck board? The newly re-engineered and expanded line of Trex Enhance composite decking combines the beauty and durability of Trex's composite decking with pricing designed to put the pressure on treated lumber. The updated Enhance decking collection is part of Trex's 'good, better, best' decking line-up, all backed by 25-Year Limited Residential and Fade & Stain warranties. Differentiating the reimagined Enhance line-up is a scalloped profile that is lighter weight for easier handling and installation. This innovative design also contributes to its lower price. Enhance Basics offers the performance and beauty of Trex in three







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DECK PRODUCT ROUNDUP

proven and popular shades, ideal for DIY'ers with its unprecedented affordability. Enhance Naturals introduces five contemporary, multi-tonal hues that resemble the streaked looks of natural wood. Just like Enhance Basics, Enhance Naturals won't rot, warp, crack or splinter, and maintenance is hassle-free. Spills wash off easily with just soap and water. Enhance requires no sanding, staining or painting, and its protective shell defends against severe weather and heavy foot traffic. For homeowners seeking unparalleled performance and aesthetics, Trex's flagship Transcend collection continues to reign with 10 premium shades, including five monochromatic Earth Tones and five multitonal Tropical hues featuring highdefinition grain patterns. Visit www.trex.com.

DECKORATORS ALX CLASSIC ALUMINUM RAILING

Durable yet minimal, Deckorators ALX Classic aluminum railing now comes in Weathered Brown, a popular color that can add a warm, natural finish to a deck. ALX Classic aluminum railing



in Weathered Brown is available in 6- and 8-foot lengths and 36- and 42-inch heights with Deckorators Classic or Estate balusters. The product is easy to install, whether deck builders choose the preassembled or top and bottom rail kit option. Post and stair kits are sold separately. Weathered Brown joins Satin Black, Matte Black and Textured White in the ALX Classic aluminum railing color lineup. ALX Classic railing is covered by a lifetime limited warranty on manufacturing defects and powder coating and a 25-year removal-andreplacement warranty. Visit www.deckorators.com/ALX.

TREX TRANSCEND RAILING KITS

Trex has applied its "make it easy" mantra to selection of a railing system. To help take the confusion out of the railing selection process, the design team at Trex has curated railing pairings for every shade of Trex decking. Simplifying things even further, the company is now offering six of its most popular Transcend railing combinations in packaged kits. All of the kits are offered in 6 ft. and 8 ft. horizontal, 8 ft. stairs, and 36-inch and 42-inch height dimensions to suit any outdoor living space. Visit www.trex.com.



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DECK PRODUCT ROUNDUP

DECKORATORS SLX CABLE RAILING

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42-in. heights, while 1/8-in. cable is available in lengths up to 50 feet. The system features a stainless steel graspable handrail. SLX Cable railing is backed by a 25-year limited warranty on manufacturing defects. Visit www.deckorators.com/SLX.

PARCELBIN

The rapid growth of online shopping has been accompanied by an increasing problem: parcel theft. In response to the epidemic in porch piracy, ParcelBin is a lockable container that securely holds packages delivered when residents are not at home. The security latch is designed to work with most analog and smart-lock systems, including August Smart Lock and Amazon Key. ParcelBin comprises a fully enclosed powder-coated aluminum shell with recycled bamboo composite siding. Available in three finishes, it can be shipped free to any address in the continental United States. Visit citibin.com.





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BUILDING A BEAUTIFUL PATIO

here are big patio projects and small patio projects. This was a big one.

The plan for the lakeshore property at the Gillikin house in Talladega, Alabama involved more than 500 sq. ft. of paver patio and sidewalk, plus a large fire pit added to one end, all topped off with significant landscaping improvements. This installation was built on a sloped lot that emptied into Logan Martin Lake. This meant the site required grading for the patio floor. It also required a lot of earthmoving and trench-digging to handle the water that was draining downhill toward the patio, as well as the water that was draining off the patio toward the shoreline.





And that's what makes this flexible-base patio installation a prolevel project rather than a DIY jobits sheer scope. Thousands of pounds of dirt and material were moved around the jobsite by a crew of workers with gas-driven construction machinery, and it still took them a few weeks to finish the patio. But you'll see in the photos that the building procedures used on this project are largely the same as what a DIY'er can use to build their own flex-base patioonly applied on a much larger scale.

SITE PREP

A patio should be flat (with a slight pitch for drainage), which means the ground beneath it should be flat. That's easier said than done when digging in rocky soil that's riddled with roots. Project manager Hamilton Trimm brought in a skid steer with a number of attachments to help on the project. To grade through the tough soil conditions, he equipped a skid steer with a Power Rake attachment, which tears through the

ground with spinning spikes.

A Trencher attachment for the skid steer also came into play. An underground electrical line had to be relocated during construction. The electrical inspector required it to be buried 12 inches deep. The trencher was used to dig the ditch, which stretched 60-70 feet.

The trencher was also used to help dig a drainage ditch that extended from the fire pit of the patio downhill toward the lake.

After the patio site is graded flat, a vibrating plate compactor is used to tamp down the soil thoroughly. Proper compaction is absolutely critical to a patio project, and a compactor is used at various phas-

es throughout construction—to compact the soil, to compact the gravel base, and finally on top of the patio surface to ensure the pavers are firmly set in the base.

BASE LAYER

The compacted earth is covered with a base layer of crushed rock. The rock is spread on the site and then firmly compacted. As a general rule, patio pavers require at least 4 inches of compacted crushed stone as a base (for pedestrian use) and up to 8 inches for climates where ice-heaving is a problem. The patio site must be excavated enough to include the depth of the crusher-run gravel



Site prep of this large patio requires removal of dirt, stone and rocks. A skid-steer with a power rake attachment breaks up the earth.

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BUILDING A BEAUTIFUL PATIO



A trencher attachment digs the ditch for an electrical line as well as a drainage trough for the fire pit.



Burying the electrical line was a two-man job.

and the paver itself on top. When installed and compacted, the paver should be just above the top of the ground. On this site, a lot of gravel was used and compacted down to about 5-6 inches deep.

Note: For some patios, a sand bed is recommended over the crushed rock, but we don't see this method employed much on pro jobs in the South. However, a sand bed may help a DIY'er achieve an even patio floor installation, because the sand can be screeded perfectly smooth before applying the pavers.



Site conditions and patio design will determine how to manage drainage. This patio included a circular fire pit with a drainage trench, which was lined with landscape fabric and filled with gravel.



The bed of crushed rock should be spread evenly over the patio site and thoroughly compacted.



A vibratory plate compactor will be used in multiple phases of construction.



The bed of crushed rock should be screeded evenly in preparation for the paver surface.



A heavy pallet of pavers requires powered equipment to move place to place.

In the case of the patio shown, the crushed rock was thoroughly compacted, screeded flat, compacted again, and then re-screeded. This ensures a firm, flat base to lay the pavers.

PAVER INSTALLATION

Although paver patios are often touted as DIY-friendly projects, people often overlook some of the logistical challenges involved with moving materials. Concrete pavers are very heavy, and if they aren't delivered right to the spot where you need them, then you'll have to



This patio features Pavestone's Venetian series in the River Blend color tone.

transport them. And a pallet full of pavers doesn't move easily. The construction crew used a skid steer with a Forklift blade.

The pavers were manufactured by Pavestone, a Quikrete company. The Gillikins chose the company's Venetian series in the River Blend color tone. As described by Pavestone, "The Venetian series creates dramatic and dynamic interaction with sunlight through its cleft and chamferless surfaces, which evoke the timeless appeal of cut flagstone." These handsome pavers are made of durable concrete with iron oxide pigments that won't fade with extended UV exposure. The joints and surfaces

are designed to create a natural look and minimize furniture wobble.

Keep in mind that the brick pattern and patio shape will impact how many bricks will need to be cut. Although a curved patio has a less formal appearance than a square one, the rectangular pavers will need to be cut to follow the curve of the border. The choice of brick pattern can also minimize cutting. A basket weave pattern is ideal because full pavers can be used throughout a square or rectangular shaped patio. Using a running bond or 90degree herringbone in rectangular areas will only require half-cuts. A wet saw (or a brick set) can be used to cut the pavers.

This project used pavers of three different sizes. The pattern incorporated a seemingly random recurrence of large accent stones. The installers carefully level the pavers as they proceed, checking them left-to-right and front-to-back in order to keep the patio in the same plane, but maintain the consistent drainage slope. A rubber mallet can be used to set the pavers firmly in the base.



The choice of brick pattern can minimize cutting of the pavers.



A rubber mallet should be used to set the pavers into the base.

The paver surface should be compacted when complete.

EDGING

The edges of a patio should be anchored in place to resist movement and retain the field pavers. The pavers should be recessed below grade with the surface just above ground level. In some



The fire pit was surrounded by the circular edge of the patio, which had to be cut at an arc.



A wet saw, available at most rental outlets, is the most productive means of cutting pavers.

BUILDING A BEAUTIFUL PATIO



The exposed edges of the pavers will be buried by substantial landscaping so the patio surface will be just above ground level.

cases, it may be necessary to build up the earth around them and compact it into a substantial berm that frames the edge pavers and gradually tapers into the surrounding ground.



The project included three walking paths, which were constructed much like the patio.



The grade of the site sloped significantly in different directions along the the walking path.

Patio edges that remain above ground (to overcome sloped grades) are constructed over a short, mortared wall (built of block or stone with its first course recessed below grade). In this case, the edge pavers can be mortared onto the wall as a final course.

The edging can simply be comprised of the outer row of field pavers, a contrasting pattern of field pavers, or made of a different block or stone altogether. Three

edges of this patio were made of field pavers, but the side facing the uphill slope was finished with a row of taller edge pavers, installed to help divert runoff from the new patio surface.

Joint sand is the key to providing interlock between pavers and providing cushion between them that prevents paver-to-paver contact and chipping. The sand joint between pavers should be between 1/16 and 3/16 inch. Concrete sand that has coarse and angular particles is recommended over masonry sand, which has rounder, finer particles. The joints need to be completely full of sand to function properly and promote interlock in the system.

WALKWAYS

The paver walking paths were constructed in the same manner as the patios, but the ground beneath pitched away in different directions, which first required construction of a small drystack stone wall to retain the gravel base. The outer courses of the sidewalk pavers were mortared in place atop the drystack walls.



To accommodate the slope, a drystack stone wall was built to support the downhill side of the walkway, and the edge pavers were mortared onto the wall as the top course.



The uphill side of the walkway was lined with natural stone and boulders to inhibit erosion.

EMBELLISHMENTS

The standout feature of the Gillikin patio is a huge, stone fire pit, which deserves its own story of construction. Landscaping was another major aspect of the design, with the goal to blend the new installation with the scenic outdoor environment. To make this connection, Trimm incorporated natural stone unearthed on site as well as hand-picked stones selected locally to maintain the

natural theme throughout. By surrounding the pavers with boulders, ferns and shrubs that decorate a ground-cover of thick pine straw, the new patio looked like it "grew there." And that was the goal. **EHT**

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For more information on Pavestone patio and landscape products, visit www.pavestone.com.



The uphill side of the patio was lined with tall edging bricks to divert runoff from the patio surface.

Shown below is a finished shot of the completed Pavestone patio project, complete with furniture and landscaping.



ACCENT. By Matt Weber

BY TIMBERCHIC

s part of an ongoing remodeling project, the *EHT* staff had our first opportunity to install Timberchic, a peel-and-stick plank made of genuine reclaimed wood. Thin, lightweight, and easy to cut and apply, these DIY-friendly planks are made 100-percent from reclaimed river logs and are available in a range of board widths and wood tones (we chose Coastal White). They're ideal for creating accent walls but can also be used on ceilings, backsplashes, doors, columns and more. We used them to accent the surrounding foyer walls of a home's front entry.

Peel-and-stick
Planks of
Reclaimed Wood
Make Striking
Wall Decor

The smooth, wipe-able surface exhibits all the distinct characteristics of real wood, but requires no glue, nails or screws to install. To apply the planks, you simply peel the backing off the adhesive strips, butt the edges to the adjoining planks, press into place and secure with a roller.





ORDERING & PREPARATION

To order the Timberchic product, you'll need to calculate the amount of square footage of your project, then add 5 percent to account for waste. Also, determine whether you need any outside corners or end caps—or if you'll be customizing any of the surrounding trimwork using a different material.

The wall surface needs to be clean (free and debris and loose drywall), smooth (so sand down any bumps) and flat (within 1/4 inch over 4 feet). Any wall repairs requiring joint compound need to be primed or painted.

Remove any fixtures attached to the wall (outlet covers, switch covers, wall sconces, etc.). Also, remove any existing trim that will interfere with installation.

LAYOUT

Aside from the peel-and-stick simplicity of applying the boards to the wall, the installation procedure is similar to laying a board-pattern floor. This means you need to establish a level and square layout pattern. We ran a 4-foot level along

TOOLS REQUIRED:

Pencil Chalk Line Level

Rubber J-Roller

Miter Saw (either hand saw or electric)

Jigsaw

Utility Knife

Black Dot Stickers (provided)

the ceiling and floor of our work area, and were lucky enough to find that our wall and ceiling were level.

However, builders make mistakes and houses settle, so not every situation will be so neatly square. If you find the floor and ceiling aren't level, measure the distance between your floor and ceiling at both ends of the wall. If these are within 1/4 inch, then your floor and ceiling are adequately parallel.

If you determine that your ceiling is fairly level, you can use your ceiling as the reference point for laying out your starting row. Base molding can be used along the floor to disguise an out-of-square gap along the bottom row.

If both the ceiling and floor are out of level, you can begin a level starting row in the middle of the wall, then work upward and downward until your rows reach the floor and ceiling, where you can conceal those out-of-square gaps with trim. However, if you take this approach,



Simply peel off the tape packing to reveal a very strong adhesive.

first measure from the anticipated height of your center row to both the ceiling and the floor. Divide these measurements by the width of your Timberchic planks. If you end up with a small remainder (i.e. a very thin "sliver" board) at the top or bottom, then adjust the height of your starting row to ensure a larger final row at the top and bottom. For example, a 1-in. row is too narrow and not optimal for finishing a room. Ideally, you want to have a row no less than 1/2 the width of a normal row.



Each Timberchic plank is made of of genuine reclaimed wood, only about 1/8-in. thick to conform to the wall.



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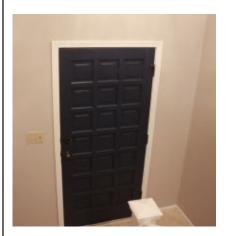


INSTALLATION

I realize that some people cringe at the thought of a "peeland-stick" product because inferior products in the past have been known to come "unstuck" and

move around (I'm looking at you, cheapo peel-and-stick flooring). Take my word from experience that the Timberchich strips utilize a very strong adhesive, and once a board is pressed firmly to a

wall, your more likely to tear the wood plank off the strips than you are to pull the strips off the wall. We're talking about a very strong glue. For this reason, all measuring, cutting and test fitting of planks must be done prior to removing the tape film. After the tape film has been removed, avoid touching the adhesive strips



Here's the "before" shot of our foyer project, showing the walls are nothing special.



All remodeling jobs are different so plan the project in advance. This one required a telescoping ladder to access the tall walls above a staircase.



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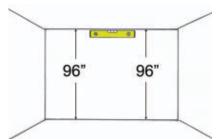
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The best case scenario is that your ceiling and floor are level and parallel.



If the ceiling and floor are parallel within 1/4" (and the ceiling is fairly level), you can use the ceiling as a reference point to start the first row.



Unscrew any switch plates or outlets covers, and tape the screws to the plates for replacement.

and protect them from dust and debris.

If any of the planks have an open knot, simply use the "black dot stickers" (included with each box of planks) behind the knot to hide the wall. To do this, place the plank in its desired location before removing tape liner. Mark

any open knots on the wall with a pencil. Remove the plank and place a black dot sticker over the pencil mark.

To place a plank in its final position, remove the tape liner,

align the plank along the reference line or adjacent plank with a slight angle so only the edge is touching. Make any necessary adjustments and lightly press the plank into place.



ACCENT WALL

Double-check the fit before applying pressure to the plank with a rubber J-roller. The pressure-sensitive adhesive achieves a better bond the more pressure that you apply. Pay extra attention to pressing down the edges and ends of the plank.

Begin the first row in a corner.

The planks are designed to simply butt against each other at the joints. Similar to floor-board application, the butt joints in adjacent rows should be staggered the width of the plank, at a minimum.

A miter saw makes the best tool

for cutting the planks to size. Also, keep a jigsaw handy to cut notches around light switches or any other odd shapes or angles.

Once the field is completely finished, finish up with the trim package of your choice. On this job, we went with a simple



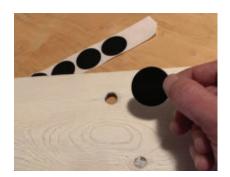
Pressure from a rubber J-roller strengthens the bond of the adhesive.



The thin blade of a jigsaw is easy to maneuver when making notches or inticate cuts.



Carefully mark the face of the planks for cutting.



Each box of Timberchic includes "black dot stickers" to fill any knotholes in the wood.



A miter saw is handy tool for making quick cuts in the planks.



When removing trimwork, pry it off carefully and pull out the nails if you have any intention of reusing the material.



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picture-frame door surround and matching baseboard package, which we felt complemented the rustic "driftwood" look of the new accent wall without distracting from it with ornate trimwork. In the end, we felt

the new Timberchic wall planks

added a great deal of character to what was otherwise a fairly uninteresting living space. Mission accomplished. EHT

.....

Learn more about these adhesive wood wall planks at www.timberchic.com.



Take the opportunity to make any repairs or improvements you come across. We applied spray foam insulation around this door jamb.



We finished the walls around the door and floor with custom trimwork.



Stagger the end joints between rows by the width of a plank (at minimum).



Small areas like the side of this door are a great place to use cut-off end pieces.

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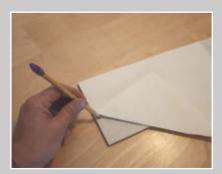
Donald Durham Co. Box 804-HT, Des Moines, IA 50304

TEMPLATE TRICK

If you find careful measurement to be a challenge, you can easily make a paper template to copy odd shapes, and then transfer them to your planks. Simply crease the papers edges to match the shape in question, then align the paper template over the board and trace the cutline.









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MetalTech 4-in-1 Scaffold Bench & DeWalt Wet-Dry Vacs



he *EHT* staff had the opportunity to test some cool new home-improvement products and wanted to share the news with our readers.

METALTECH 4-IN-1 SCAFFOLD BENCH

I'm facing a lot of roof-line work in my near future, involving gutter maintenance, soffit vent replacement, and repairs to the eaves of my house. This means I'll be spending a lot of time off the ground. When working atop a ladder on projects like this, I spend half the time moving and repositioning the ladder. To save time, provide a wider platform, and give myself a little elbow room, I'm using the new 4-in-1 Multi-Purpose Scaffold Bench from MetalTech (sold exclusively at the Home Depot).

Thanks to its large locking casters, I can roll the Scaffold Bench right where I need it and adjust the height of its wooden



work platform up to 6 feet. And although this is a new product, it appears MetalTech has plans to offer extensions, guardrails and outriggers to access even higher working elevations (I see myself ordering those in the future). The bench has an 1,100-lb. capacity, and the deck allows for a stable footing and a large standing space of 29 in. x 72 in.

When used as a workbench, the included rails and attachment brackets can be used to install any brand of miter saw or table saw, along with accessory outfeed



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SPOT LIGHT



roller supports that attach to the end of the bench. The workbench can be easily moved around the jobsite, then locked in place for stability.

After the work is done, the Scaffold Bench can be configured as a two-shelf storage unit for the garage or workshop. The included storage shelf includes a ventilated metal grid and side braces (200-lb. capacity) that can be adjusted to any rung height along the ladder sides.

With the large easy-rolling casters, the 4-in-1 Scaffold Bench can also be used to cart equipment and supplies around the jobsite.





Weighing a 161.5 lbs., this durable steel bench is solidly built to withstand the daily rigors of a demanding work site. The unit is sold in a flat box for convenient shipping, but assembly is easy and requires no tools. The shelves adjust with handle-pull cotter pins, which simplifies assembly and day-to-day operation. The new 4-in-1 MetalTech Scaffold Bench would make a nice tool for the DIY'er or pro craftsman—as long as they have a garage, shed or workshop to store it when not in use. Learn more at www.homedepot.com.

DEWALT WET/DRY VACS

For cleanup around the home, jobsite or workshop, DeWalt's 12-Gal. Poly Wet/Dry Vacuum delivers excellent suction power and quiet operation.

The *EHT* staff had the opportunity to test the vacuum, and we can report that not only does the motor run more quietly than most vacuums, but the rubber wheels enable it to roll quietly across the floor without excess noise. Featuring a single-stage motor and plenty of drum capacity, this powerful shop vacuum reaches 5.5 peak horsepower and comes with a 20-ft. cord and a 7-ft. hose. The unit is easy to assemble right

out of the box. It is designed with a built-in drain and blower port and includes a washable cartridge filter. The vacuum is also packaged with a variety of accessories—a hose, utility nozzle, floor brush, crevice tool, washable cartridge filter, two extension wands, hose adapter, disposable dust bag, and removable accessory bag.

The DeWalt 12G is lightweight, easy to maneuver, and makes a fine choice in vacuum for messy spills and big cleanups. But for smaller applications, DeWalt offers the 4G PolyWet/Dry Vac.

The DeWalt 4G weighs less than 13 lbs. and is shaped like a toolbox, which makes it easy for anyone to grab it by the easy-carry handle





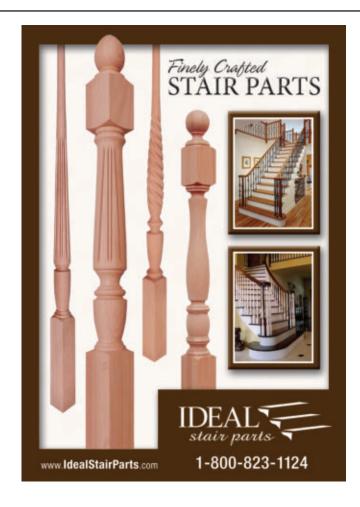
and tote it where it's needed. With its powerful 5-peak horse-power motor, this little vac provides surprising suction power for heavy-duty pickup. It features a fine-dust cartridge filter for small, dry debris and wet materials, a large on/off switch with a water-resistant design, and a built-in 20 ft. power cord and accessory storage compartment.

The 4G's "Ultra-Flexible" 7-ft. hose easily bends a tight radius for maneuvering into cramped spaces to reach nearly any job. The built-in blower port is powerful enough to blow sawdust and debris to clear off a work area. Additional accessories include a utility nozzle, crevice tool, and two extension wands. Learn more about DeWalt's new wet/dry vacs at www.dewalt.com. **EHT**











Replace a Camshaft Position Sensor



By Matt Weber

f your vehicle acts as if it has the flu, it could mean the camshaft position sensor needs to be replaced. If the engine idles roughly, stalls frequently, has a drop in power, accelerates slowly, sputters or sounds like it has a nagging cough, your camshaft position (CMP) sensor could be failing. If left unaddressed, the engine could eventually die while you're driving.

The CMP sensor identifies the position of the camshaft to the ignition control module (ICM), engine control module (ECM) or powertrain control module (PCM).

The ECM uses this data to determine the timing of the ignition, as well as the timing of the fuel injection required by the engine. When the sensor fails to do its job, the engine can't function properly.

When not replaced, the vehicle could experience hard starting (or failure to start), long crank time, misfire, decreased power, spark plug fouling, catalytic converter failure, poor fuel economy or intermittent shutdown ... all fine reasons to replace the camshaft position sensor.

Often, these symptoms will be accompanied by the dreaded

"check engine" light. If so, an automotive computer scanner should be able to confirm whether or not the sensor is the problem. Many automotive supply stores will scan your vehicle's onboard diagnostic system free of charge.

If you determine the camshaft position sensor is the problem, the good news is that replacement is usually very simple, if you can easily gain access to the sensor. The CMP sensor is mounted in several different places, depending on the model. The sensors are specific to vehicle and range in price from \$10 to more than \$80.

STEP BY STEP





When replacing the CMP sensor, make sure the ignition is in the OFF position. On this 2003 Dodge Stratus DOHC model, the CMP sensor was conveniently located near the top of the engine, on the end of the cylnder head. To access it, however, I still had to remove the PCV hose.



I then disconnected the electrical connector to the CMP sensor. This photo shows the red lock tab that has to be pulled out and disengaged to remove the connector.



The sensor was mounted to the cylinder head with two screws, which I removed.



The old sensor pulled off easily.



I applied a little silicone grease to the gasket of the new replacement sensor.



Installation is the reverse of removal. Once everything was reconnected, the result was a dramatic improvement in engine performance, all due to such a little component. **EHT**



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1/2-in. that accept 3/8-in. square drive tools, as well as a 1/4- to 3/8-in. ShockWave square socket adapter with up to 30x life for use in quick-change impact drivers. The set features laser-etched and color-coded bands so users can more easily organize and identify the size they need for the job at hand. For added utility, the new Extractor Set comes in a flexible plastic holder which prevents against any pieces getting lost in storage bags, totes or carts. Visit milwaukeetool.com.



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