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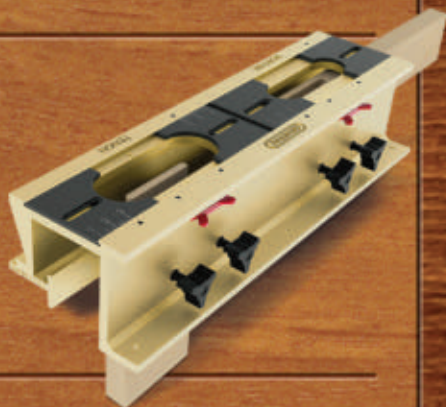
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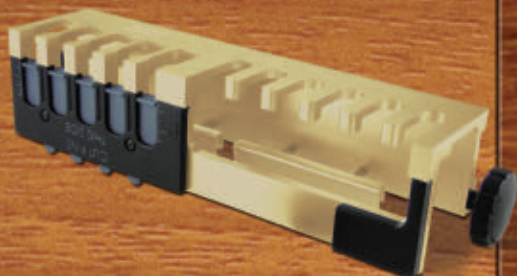
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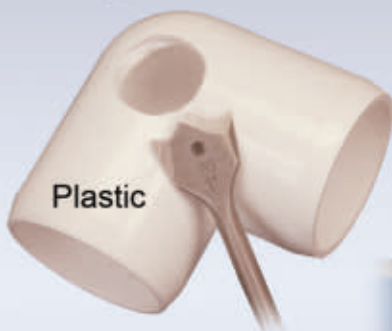
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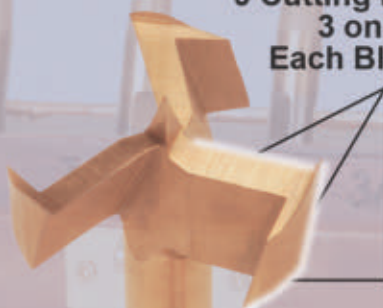
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If you're reading this magazine, then it's a safe bet that all the rights and responsibilities which come with owning a home are extremely important to you.

Imagine if someone you don't know suddenly decreed that they had authority over your home. They say you'll now be required to abide by certain codes that they favor, pay the taxes which they will levy, and secure licenses for certain activities that were previously unregulated. You might think that sounds like the bygone days of kings and lords, but it's a reality faced by a locality that's near and dear to the *Extreme How-To* staff.

Building and zoning codes are funny things in that they vary greatly from place to place. Some codes make sense for the sake of safety, some codes are implemented for political reasons, and some city regulations are implemented to generate revenue. Generally speaking, codes are adopted by government officials, and the citizens of those cities have a voice in who comprises those government officials.

That's where the Citizens Against Lincoln Expansion (CALE) have a problem. They had no say in all the new regulations that the nearby city of Lincoln, Alabama, is trying to stick them with. Zoning codes are municipal ordinances, but CALE represents a group of homeowners who have long lived outside the city that's claiming new authority over their land.

The problem reared its head when the population of Lincoln surpassed 6,000 people in the 2010 census. The Lincoln police jurisdiction had extended 1.5 miles beyond the city limits, but expanded to three miles with the population surge. Now the city is claiming authority over a large number of homes that are located in unincorporated county territory that is not part of Lincoln.

"They are regulating and taxing land that is not part of Lincoln," CALE spokesman John Hubbard said to local news station ABC 33/40. "These people have no voice in Lincoln. They want no voice in Lincoln. They want to be left alone in Talladega County."

This story reminds me of the tales of Robin Hood. Typically remembered as the hero who "robbed from the rich and gave to the poor," people often forget exactly who comprised the "rich" he was targeting. It was the greedy Prince John and his henchman, the Sheriff of Nottingham, who collected unlimited taxes from the people against their will.

If memory serves, everybody tended to cheer for Robin Hood, and nobody liked the prince or the sheriff.

Good luck, CALE.



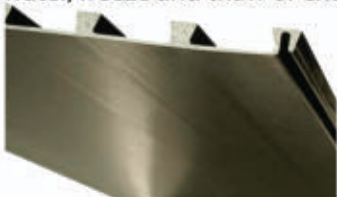
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Q: What's the easiest way to measure the slope of a roof?

A: A carpenter's square (L-shaped) is probably the simplest tool to measure roof slope, which is also referred to as the roof's "pitch". Hold the square against the sloping roofline with the short arm pointing downward and the horizontal long arm pointing to the opposite side of the roof. Position the long arm so it intersects the roof at the 12-inch mark. With the square held level, measure down from the vertical arm to the point of intersection. Roof slope is indicated by the number of inches the roof rises for each 12 inches of horizontal run. If the vertical arm intersects the roof at the 4-inch mark, it has a 4-in-12 slope.

Q: How should I transition new wallpaper around an arched doorway?

A: Since the wallpaper won't fold neatly around a curve, and it can be tricky to cut an arch out of the paper during installation, the easiest method is to wallpaper the inside of the arch separately. First, apply wallpaper to the archway wall as you would any other wall. If wallpapering the adjacent room, do the same to the opposite wall. Smooth the paper and use scissors to trim the paper in the shape of the arch, leaving a 1-inch strip of excess wallpaper around the opening. Do the same to the opposite side, if applicable. Along the perimeter of the arch, cut the excess wallpaper into a strip of tabs. Cut closely to the wall's edge and keep the tabs roughly two inches wide. Fold the tabs inside the archway and glue flat to the drywall. Then measure the width of the archway, cut a wallpaper strip to match, and adhere the strip over the tabs in the archway and flush with the edges of the wall.



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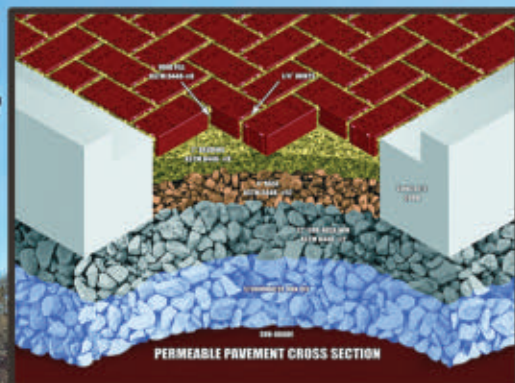


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Q: When installing insulation, on which side of the wall should a vapor barrier be applied, the inside or outside?

A: Most insulation requires a vapor barrier on the inside of the house wall due to the increased humidity generated when the interior temperature is warmed during winter. Normal, everyday living can put from 5

to 10 pounds of moisture into the home each day. In the winter months this moisture can accumulate and condense on the cold inner sides of exterior surfaces. This can cause paint to blister, stains to form on drywall, even damage the building's structure. Vapor barriers can help control the amount of moisture passing through insulation and collecting inside exterior walls and floors. A vapor barrier in the attic usually isn't required as long as you have adequate ventilation.

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Q: How should I paint interior brick?

A: First step is to scrub the surface clean using a firm synthetic-bristle brush and a TSP (trisodium phosphate) solution. Rinse off the TSP thoroughly so it doesn't interfere with the paint's adhesion. After the surface dries, patch any damaged brick joints with repair mortar and a small tuck-point trowel. Tool the joints smooth and allow them to dry completely. After masking off the surrounding area with plastic and painter's tape, apply a coat of latex primer that is specifically formulated for use with brick. Roll on the primer using a 1-inch roller nap. After it dries, roll on your color of choice in semigloss or gloss latex paint. Cracks and divets can be touched up with a small detail brush. **EHT**



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The Sky is the Limit

A Scaffolding Review for the Homeowner



Scaffolding generally consists of a system of walk boards with tubular cross-brace panels that can be assembled in a variety of configurations to access off-the-ground work.

one hand is always required to hold onto the ladder, thereby leaving only one hand to do the work when two hands are usually needed.

Scaffolding, on the other hand, provides a safe and expedient alternative to using an extension ladder, and is safer than two extension ladders that are connected by an aluminum extension board. Scaffolding can be purchased in single sets or as complete units. I recently purchased a rolling 30-ft. tower scaffolding from an online supplier (www.thescaffoldware-house.com) that I used while painting my house. My house has four gables on it. The rear gable is the only one that is accessible without a ladder or scaffolding, and one of the gables is over 30 feet in the air, making scaffolding a necessity.

CONFIGURATIONS

Always follow the manufacturer's instructions for your particular scaffolding system.

Scaffolding is joined together one section at a time with tubular cross-braces that look like a giant letter "X" turned on its side, and usually consist of panels that are 5 ft. by 6 ft.-4 in. or 5 ft. by 5 ft. The particular model that I purchased came with six S-Style double ladder sections that are 6 ft.-4 in. high, as well as four single ladder sections that are 5 feet tall.

By Clint C. Thomas, Esq. Photographs by Zoe Thomas

The old adage, "having the right tools for a job makes the job easier," still holds true today. Anyone who owns a two-story house understands how difficult it is to perform any type of maintenance twenty or more feet

in the air. Working from a ladder greatly limits a person's work area to the space that is in their immediate arm's reach, not to mention having to move a ladder more times that you can count. In addition, safety considerations dictate that

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The great thing about scaffolding is that the sections can be assembled in almost any configuration. For example, if height is needed then all of the sections are connected together vertically. However, let me caution that it is very important to use outriggers on the bottom of each leg, or at least on the legs that are not up against a wall. Outriggers are best described as extra legs that attach onto the corner posts of the lowest level of scaffolding. They reach outward from the scaffold about 30 inches and provide additional stability to the overall unit because they increase the size of the scaffold's base. The use of outriggers makes a measurable difference in how much wobble a person experiences while on the upper-

most level of the scaffolding.

On the other hand, if width is needed, then the various sections can be connected horizontally. In some cases it may become necessary to even offset different sections of scaffolding to accommodate various obstacles. I had to do this in order to paint the front gable on my house. The porch roof prohibited me from getting close enough to the gable to paint it, but by erecting two sections of scaffolding in front of the porch roof and then connecting those sections with two sections directly over the porch roof I was able to reach the area needed.

Offsetting can be accomplished by laying 2x12 boards from one set of scaffolding to another object, in my case the slanted

Scaffolding can be set up on the ground level or on a lower roof.



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porch roof, and then placing the other scaffolding sections on top of the 2x12 boards.

The other alternative, if the physical area around you permits,

is to set up a vertical section of scaffold and then connect another set to it using only two of the four corners of the vertical scaffolding, and then resting the

remaining two legs of the upper section on some other object, such as a porch roof.

Scaffolding can also be used to straddle uneven terrain or other impediments, such as the crown of a roof. If the scaffolding legs are in direct connect with a roof, be sure to place some type of padding under the legs so they don't poke holes in the shingles. I used old hand-towels that I folded up and placed under each leg.

ACCESSORIES

Many people will often purchase scaffolding second-hand and, consequently, without many of the accessories that make using it easier and safer. For example, it is common practice to use 2x10's or 2x12's as the walk



When positioning on a roof, it's smart to protect the finished surface from damage by the scaffolding.



End brackets hook and bolt onto the scaffolding frame to extend the work area.

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boards. However, when bought new, good quality scaffolding comes with aluminum and wood decks that easily hook onto the frames. These typically measure

7 ft. long by 19 in. wide, are made out of exterior-grade plywood inside of an aluminum frame and can support 75 lbs. per sq. ft. Unlike boards that bow, bend and

move underfoot, professional decks do not budge an inch and are totally safe.

My 30-ft. tower scaffold came with three such decks, but I also purchased an additional four decks because it aids in setting up and taking down the tower to have a deck on each level. It is a good idea to paint the exterior plywood in the decks with heavy-duty exterior-grade paint, such as porch paint, to help extend their usable life.

Scaffolding does, however, have a couple of down sides. For starters, it is heavy, and although not required, is best set up by two

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To handle extra materials, equip the brackets with boards to expand the work surface.



Side brackets accomplish the same work-surface extension on the sides of the scaffolding.

people. Also, it takes time to properly set up a set of scaffolding. It took my teenage son and I over an hour and a half to fully erect the 30-ft. tower, but the time spent setting it up was saved, plus some, in being able to do the work in an easy, safe and convenient manner.

STABILITY

The final drawback to scaffolding is that it can be dangerous if improperly assembled. There is the obvious danger of falling off of it, but also the lesser known danger of it turning over because it was not level when it was erected. Remember, the higher the scaffolding goes the more pronounced any tilt becomes. Think of the leaning Tower of Pisa. However, a good set of screw-jacks and the use of a level (the longer, the better) will eliminate this problem. Make sure to check that the scaffold is level in both directions.



Lockable wheeled outriggers provide additional safety, stability and portability to the scaffolding system.

The scaffolding must be assembled completely level, with adjustments made to the screw-jacks on the bottom legs.



The 30' scaffolding shown can reach the third-story gables. For extreme heights, secure the scaffolding with chains fastened into the house's wall framing.

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In other words, level it left-to-right and then level it front-to-back.

Screw-jacks consist of a threaded metal bar welded to a base plate. The threaded bar inserts inside the leg of the lower section

of scaffolding in place of the wheels. The scaffold section then rests on giant wing-nuts on the threaded bars. These wing-nuts are used to adjust the height of each particular corner of the

scaffolding and make leveling a breeze.

When using two people to set up the scaffolding, one person can stand on the highest level while the second person at the base of the tower passes them pieces of scaffolding. The ground-level worker attaches a rope around

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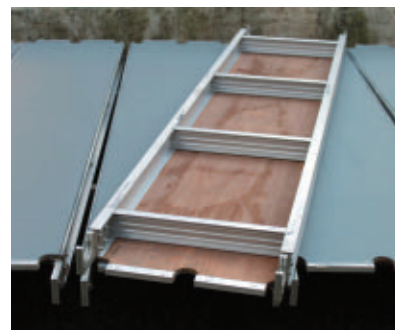
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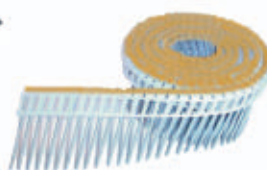
Prefinished Color	Maze Color #
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LP Blue	M-256
LP Country Red	M-026
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LP Khaki	M-251
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the center bar by using a carabiner that snaps open and closed. The rope is then used by the person on top to pull up each of the scaffolding pieces. The rope can later be used to pull up a bucket with tools or materials.

One person can set up the scaffolding, but it would take significantly longer to make multiple trips up and down the tower.

Generally speaking, it takes two people anywhere from an hour to an hour and a half to erect a 30-ft. tower scaffold with outriggers and

It's easiest to assemble the scaffolding with one or more person, with the lower workers passing up panels one at a time.

side-brackets. It takes nearly the same time to take it down again, so it's important to factor those times into your work schedule.

Several other accessories worth having are "mason frame access panels," end brackets and side brackets. The mason frame access panel is essentially a safety railing for the uppermost section of scaffolding. One such panel goes on each end of the top section and is then connected by four tubular poles that attach to the panels with quick-connect clips common to all scaffolding.

End brackets and side brackets, as the names imply, are triangular brackets that hook and clamp onto either the end or the side of the scaffolding to allow additional work space. I purchased 20-in. end brackets for both sides of my

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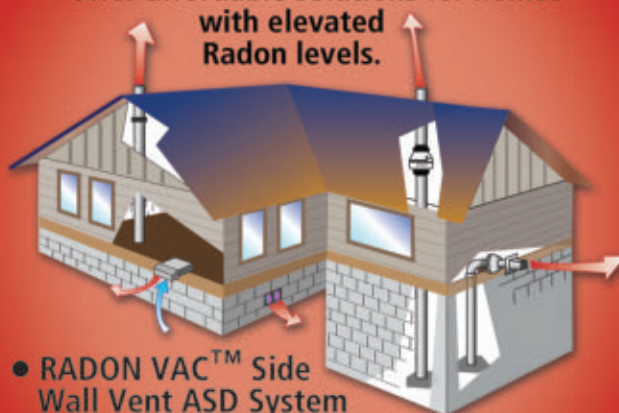
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scaffolding. This allowed me to lay a piece of 2x12 lumber on top of the end brackets and thereby gain an additional 20 inches of workable area on either side of scaffolding. I do recommend the use of a safety harness of some type if side brackets or end brackets are used.

The final accessory to consider is a good set of wheels or casters for the bottom-most section of scaffolding and for the outriggers. Admittedly, it is not feasible to roll a 30-ft. tall scaffold tower, especially over the bare ground, but two sections and possibly three sections is manageable, depending on the terrain.

Scaffolding may seem like an extraordinary expense, but given the many uses that you will find for it, as well as the ease with

which it allows you to perform whatever work you have to do, you'll discover that it is well worth the money. Scaffolding has many uses, from painting your house to repairing a roof or cleaning out your gutters. Therefore, think of it as a capital investment.

Also, compare the cost of the scaffolding to the cost of going to the emergency room because you fell off a ladder trying to over-reach. Stay safe, work smart, and the sky is the limit with scaffolding. **EHT**

A single person can assemble the scaffolding using a rope to haul up the pieces, but prepare for a lot of climbing.



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Free Frame

Install a Tile Backsplash with a Matching Mirror Frame



By Larry Walton

Removing the old mirror was an easy decision. However, that left us with the task of covering the same area or repairing the wall surface where a new mirror might not cover it.

I wasn't really up for ordering a custom mirror to get the exact size we needed. So, I had pretty much decided on the wall repair when we happened upon a tile backsplash with a matching tile mirror frame in a commercial building.

We knew immediately this application would work well in our bathroom to complement the floor tile and provide continuity in color and texture throughout the room.

The previous homeowners had left behind some 6-in. tile and grout that matched the floor tile. We bought an off-the-shelf 36-in. high mirror, which was tall enough when placed on top of the 6-in. tile backsplash to fill the void left by the old mirror.

The length of the vanity and the wall area we wanted to cover would be concealed by the 60-in. stock mirror plus a nice 2-in. tile frame around it. These were very similar proportions to what we had seen at the commercial site.

STEP BY STEP APPLICATION



Removal of the old mirror revealed some rugged wall surface including wallpaper and missing texture. Installing a large enough mirror and frame combination eliminates the need to match the texture and paint to the rest of the bathroom.



Beginning with the backsplash end tiles, we put teaspoon-size globs of tile adhesive on the back four corners of the tiles. Keep adhesive away from the edges so it doesn't fill the grout joints when the tile is pressed on the wall.

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Put the bottom edge of each tile on the countertop and tip into place. Slide tiles side to side to adjust the grout joint width. Remove any excess tile adhesive from the tile surface and the joints so the grout can penetrate the joint by at least half of its depth.



Measure the last tile for the wall, allowing space for grout by subtracting the grout joint width.



We marked the cut line on our tile pieces because we used a wet saw without a cutting guide like you would find on a stationary saw.



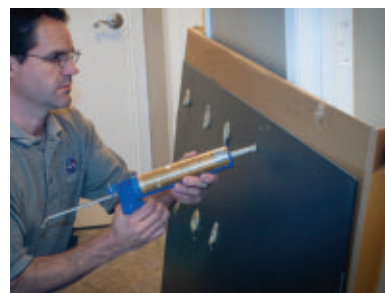
Cutting the tile was easy when using a small circular wet saw. This saw also works well for cutting hard surface materials in place for remodel projects where you want to leave some existing tile work.



Complete one wall first then measure to cut the last tile of the remaining wall, subtracting double the grout joint width. On our project we wanted $\frac{3}{16}$ -in. grout lines so we cut the last tile for each wall $\frac{3}{8}$ in. under the measurement.



Prepare the wall surface for the mirror according to the instructions on the mirror adhesive's container. This wasn't necessarily toxic dust, but if I'm going to put on a dust mask, I use one that really works.



Determine the center of the mirror and mark both edges on the wall. Apply mirror adhesive according to the manufacturer's instructions.



With the adhesive on the back of the mirror, position it starting with the bottom edge of the mirror on top of the backsplash tiles. Tip it into place. The tile supports the mirror while the adhesive sets.



Determine the width of the mirror frame tiles by measuring from the mirror to the corner wall or to the end of the vanity. Cut all of the frame tiles to the same width. Cut the four upper corner tiles at 45



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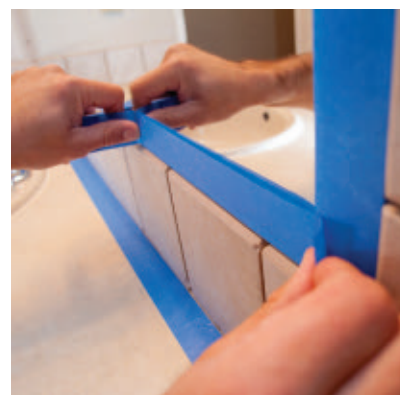
degrees. Set the upper corners of the mirror frame first. Grout-joint spacing can be adjusted by moving the short point of the tile cuts closer or farther away from the corner

of the mirror, while keeping the inside edge touching the mirror.

Set the tiles along the top of the mirror, working from the corners back toward the center. The center



tile or the two center tiles can be cut, depending on whether the number of tiles between corners is even or odd.



After the tile adhesive has set overnight, mask off the countertop, mirror and wall areas next to the tile. Scrape any excess tile adhesive out of the joints.

NO SAW, NO PROBLEM

Some tile stores offer a free cutting service for a certain number of cuts on tile purchased at their store. They usually have a per-cut price for additional cuts.

As alternatives to saws, manual tile cutters work much like glass cutters by scoring a line across the tile along which the tile should break. For big jobs with lots of cuts they can be very fast, but be prepared to lose a few tiles in the process.

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DO IT YOURSELF



Apply the grout using a grout float, a squeegee or plastic putty knife, making sure to completely fill the joints. Since we kept the factory tile edges next to the mirror, we used grout to make a 45-deg. bevel along the outside cut edges of the mirror frame.



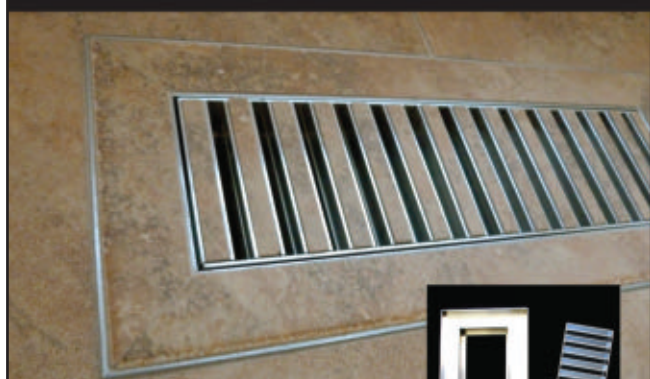
Sponge off the surface of the tile. Be careful to keep sponge pressure light to avoid digging grout out of the joint. Cheese cloth or towels can be used to remove minor grout haze after the grout has dried. You may wish to use a colored caulk that matches the

grout to seal the joint between the tile and countertop to prevent cracking. **EHT**

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The advantage is clear. You can find our iconic CHANNELLOCK BLUE® handled pliers in almost every toolbox and work truck around the world. Our typical clients are tradesmen and professionals, as well as DIYers. When you ask any dedicated tradesman what color their pliers are, chances are, he or she will answer "blue."

Our customers choose CHANNELLOCK® tools over the competition because we're deeply rooted in innovation and dependability. We invented the tongue-and-groove plier in 1933, and it has been an industry-best tool ever since. Unlike our competition, we don't waste time constantly trying to design the latest gizmo or gadget to add to pliers. Instead, when we change something, we make sure it's a needed change for tool users that will make their jobs easier. In 1965, we received a patent for the conical surface created on the cam side of the pliers when undercut. And in 1984, we received another patent for the PermaLock® fastener we

Extrême How-To speaks to Jon DeArment, president and COO of Channellock Inc., about the company's long-standing tradition of manufacturing high-quality tools in the USA.

How do you feel Channellock's American work force benefits your company?

To be able to say that our world-famous pliers are still made in Meadville, Pennsylvania, is a source of pride to everyone at Channellock Inc. This pride is felt in our nearly 400 associates we employ. We have associates who have been with us for upward of four decades, and even have second generation associates.

That sort of pride, loyalty and professional experience is extremely valuable to the success of CHANNELLOCK®, and we think it shows in the quality of products we make.

From the point of view of the consumer who uses Channellock tools, what advantages in the design or performance of the final product can be attributed to your company's tradition of manufacturing in America?

We believe that American manufacturing is the backbone of the U.S. economy. The best designed and crafted products in the world, like CHANNELLOCK® pliers, come from the United States. By manufacturing our pliers in Meadville,

added to our tongue-and-groove and slip-joint pliers.

Our customers know what they're going to get in terms of performance and durability, whether it is our tongue-and-groove pliers, high-leverage linesman pliers or new American-made Professional Screwdrivers.

How do you feel Channellock has benefited the community of Meadville, Pennsylvania, and the regional economy at large?

Channellock Inc. moved to Meadville, a small town located in Crawford County, Pennsylvania, in 1904. We're one of the largest industrial employers in the region, and provide a place of stable, professional employment with competitive wages and benefits, as well as reinvestment into our facility, technology and skill levels of associates.

Company size alone makes us unique among manufacturers in the region, and Channellock Inc. is very fortunate to have nearly 400

great associates who exemplify the family-owned spirit throughout the company, community, county and region.

As a company, we've always been very involved in the community and the region. With a strong commitment to excellence, innovation, ethics and philanthropy, CHANNELLOCK® is the first to acknowledge the importance of the people who live and raise their families in the community.

We are also very proud of our Falcon Program. This program is a multi-faceted initiative which encourages, celebrates and rewards associates who demonstrate, among other things, leadership skills through participation in community organizations. In 2014 there were eight nominations for the award.

Channellock Inc. consistently supports the local Little League, Crawford County 4-H Fund, the Pennsylvania Future Farmers of America (FFA) Foundation, Mary B. DeArment Memorial

Park, Relay for Life, United Way of Western Crawford County, George S. DeArment Ice Arena and March of Dimes among many other organizations. We also have associates who serve on various boards including the Advanced Manufacturing Industry Partnership, Precision Manufacturing Institute (PMI), Crawford County School District and Hand Tools Institute.

How do you feel the work ethic and character of your employees compare to the workers of other countries?

There is something special about our associates. There is a sense of pride and ownership in what we create in Meadville, Pennsylvania. Because of this, our associates, across the entire company, have a personal connection and vested interest in maintaining the high standards of quality that the CHANNELLOCK® name is known for.

In addition, many of our associates are involved in the community, and we encourage that. Whether it is being involved in local organizations, coaching youth sports or supporting local charities, our associates are a part of our community beyond the walls of Channellock Inc. This sense of local pride carries over into the work day and really drives home what it means to be an American manufacturing company. **EHT**

Learn more about Channellock at www.channellock.com, and read our extended interview at extremehowto.com!



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SEE-THROUGH SHOWERS

By Rob Robillard

My brother, a master plumber, always says the shower is the heart of the bathroom. When the shower is bad, it can make you hate your bathroom.

The 5-by-7-ft. utilitarian master bathroom I grew up with is now history. Today's trends—complete with radiant heat, unlimited on-demand hot water, high-end fixtures, furniture-grade vanities, stone work, music and walls of glass—have transformed bathrooms into private grottos where a homeowner can retreat to relax.

The trend these days is to remodel your bathroom into an oasis of relaxation, and the shower design, more specifically frameless glass shower enclosures, are a key driver in that trend.

A glass shower enclosure gives the bathroom a spacious, luxury spa-like look and feel, but all too often homeowners make a critical timing mistake. When designing the bathroom, homeowners often put off the glass shower enclosure decision until the end of the project, considering it a “finish trim” decision. Big mistake!

According to Greg Weyman, vice president of marketing for Basco Shower Enclosures, a leading shower enclosure manufacturer, “The tile, hardware and fixtures are where most people start and tend to spend the majority of the budget within the shower.”

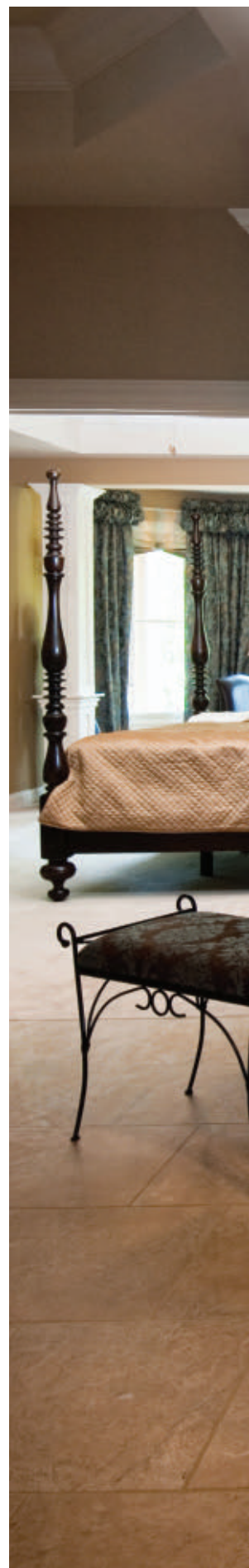




Photo courtesy Basco Corporation

SEE-THROUGH SHOWERS



If you want a glass shower, however, you should incorporate its inclusion from the outset of your remodeling plan.

TYPES OF GLASS ENCLOSURES

Semi frame-less and frame-less glass shower enclosures have been around for a while and have always been associated with a timeless look of quality and classic design.

As a remodeler, most of the glass shower enclosure designs I deal with are custom made, which is not usually considered an easy DIY project.

Frame-less glass shower enclosures are made of tempered glass and come in varieties of finishes, styles, glass textures and patterns to satisfy most people's aesthetic appetite. The glass doors are

super heavy and require quality hinges and secure attachment in order to operate properly.

PLANNING

The process of planning, choosing and installing a custom glass enclosure can be an educational experience.

Rather than adding a glass shower as an afterthought to a remodeling project, you should incorporate its design into the outset of your plan. The heavy weight of the glass might even require additional framing beneath the floor.

I truly believe that you get what you pay for, so don't skip on the products with features that will make your life easier and save you time. On my projects I use glass and fixtures from an Ohio-based company called Basco Shower Enclosures. Basco is an innovative leader in the shower enclosure industry, and has been around for more than 50 years. They are a family owned business, owned and operated, by the Rohde family in Mason, Ohio. (In fact, Mr. Rohde, now in his nineties, still goes in to work to make an appearance.)

DESIGN THE SHOWER FIRST

The best part of using a custom glass enclosure company is that



The glass installer needs to measure or create a template after the tile, marble or stone is already set in place.



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SEE-THROUGH SHOWERS

you can create any type, size or shape shower you want, and then have the glass made to fit it. Custom glass enclosures can be installed with tolerances of 1/16 inch.

Professional glass installers will template the space you create and then have the glass cut perfectly to fit that space. This may include cutting tapered glass panels to fit to and accommodate walls and

floors that are not level or plumb.

The installer needs to measure or create a template after the tile, marble or stone is set in place. It takes approximately three weeks to custom-make the glass and get it installed.

Many people hastily jump into a bath remodel project and unknowingly throw away money by not taking the proper steps to organize their project. Before you start remodeling your bathroom, take the time to communicate with your

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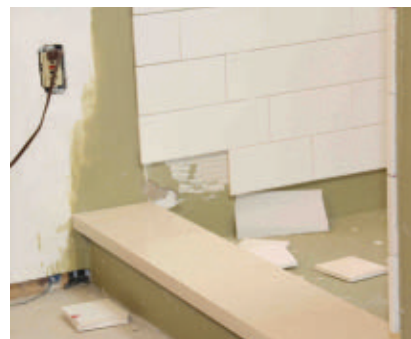
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Pitch all thresholds and half-walls into the shower for drainage.



Even experienced remodeling contractors call a specialty installer when it comes time to hang the glass enclosure. This is a project best left to experienced professionals.



Glass panels are secured to the walls with glass clips and 1/16" of space that is sealed with silicone. On horizontal surfaces like half walls, the glass is installed in an aluminum channel which is bonded to the tile or marble with 3M VHB high-bond tape plus silicone.

contractor and plumber about your intentions to use a custom glass enclosure.

Before I even break through a wall on any bath remodel slated for a glass enclosure, I call and consult my installer Mike Cook from BathWare Solutions out of Westbrook, Maine.

I'm a great remodeler, but Mike specializes in enclosures and has forgotten more than I know about his specialty trade! Check your ego at the door and consult the pros.

PLANNING CONSIDERATIONS

One thing that people do not realize is that adding tile, marble, granite and walls of glass adds hundreds of pounds to the "dead load" of the structure. A dead load is the weight of all the materials used in the construction of a home, and have an effect on all structural members of a house. This weight is a constant over the life of the structure, and has a big impact on the long-term deflection

or creep of the framing members.

Careful planning at the time of remodeling may involve adding floor-framing support to carry the additional dead load.

Other things to consider are fastening these huge, several-hundred-pound panels of glass to walls and the door-hinge attachment.

Here are some considerations:

- Install solid blocking in the walls for the glass door and wall panels to be securely anchored. Install this blocking from the floor to the ceiling.
- Do the floor joists need reinforcing?
- Where will you enter the shower, and where should the showerhead go?
- Glass panels are installed to 1/16-in. tolerance, and the panels can be tapered to accommodate walls and floors that are not level or plumb.

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SEE-THROUGH SHOWERS

- Glass panels cannot be cut to match a bow in the wall. Ensure that your walls are flat.
- Design your shower so your showerhead and body sprays do not

splash directly onto a door or glass seam. Placement of these items is important to prevent leaks. (Note: Often the showerhead can be moved but not the door location, so share your plans with your contractor.)

- Pitch all thresholds into the shower for drainage.

- Pitch all half walls into the shower.

- Use solid surface thresholds. (Never use split tile thresholds.)

- Do you need an easily accessible shower with wheel-chair access?

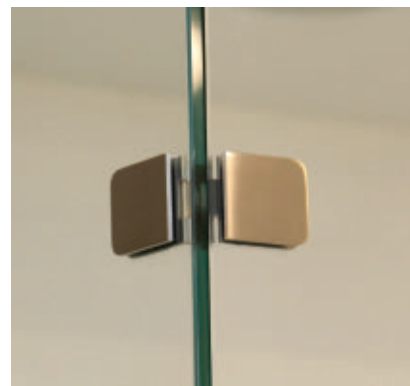
- Schedule the glass installer to measure as soon as the tile or stone is set. Grouting is not necessary. Plan for installation three weeks later.

CHOOSE THE SHOWER ENCLOSURE FRAME

What does frameless and semi-frameless mean? Frameless will have minimal amount of framing around the door and panels for



A semi-frameless shower will have some framing at the edges of walls but no frame on the shower door.



The glass panels are joined with clips.

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SEE-THROUGH SHOWERS

support. Semi-frameless may have framing around the entire opening but not around the actual door panel itself.

Semi-frameless and framed designs are available and are dependent on your design choice and décor. If you're like me and prefer to see less aluminum and more glass, then you'll want a frameless or semi-frameless enclosure.

One question I get a lot is how to secure the frameless glass panels in place. The panels are secured to the walls with glass clips and 1/16 inch of space that is sealed with silicone.

On horizontal surfaces like half walls, the glass is installed in an aluminum channel which is bonded down to the tile or marble with a 3M VHB high-bond tape and silicone. The 3M tape creates a chemical bond or "weld" that is very strong and will not move. High-strength bonding tapes are a proven alternative to screws, rivets, welds and other mechanical fasteners. Unlike screws or rivets which join materials at a single point, the 3M bonds the entire surface and spreads any stress load across the entire length of the joint.

GLASS OPTIONS

The best part of the shower enclosure is the custom glass element. Not only can you design the size and shape of your shower but the glass options offer you a variety of styles, from the open look of clear to distinctive artistic patterns, including beveled and etched glass.

Or, choose an option which limits the visibility into the shower:

- Rain glass
- Fluted glass
- Obscure
- Autumn
- Tempest
- Silk

Whether you decide to attempt a project yourself or hire a contractor to do it, insist on using safety-tempered glass. Safety-tempered glass is five times stronger than ordinary glass. When broken, it is also designed to crumble into small granular chunks instead of splintering into jagged shards. The granular chunks are less likely to cause personal injury in an accident.

GLASS COATINGS

Look for low-maintenance glass coatings. For example, Basco offers a glass coating called



Here's the semi-frameless glass enclosure once completely installed.

AquaGlideXP which is an ultra-protective coating that bonds with the glass to increase sheen and luster and prevent spotting, soap scum and mineral deposits. The best part of this coating is that it reduces maintenance by 60-70 percent.

I have this coating in my own shower and can attest that after two years of four daily showers, this glass remains clear and scum-free. You do not need to use chemical glass cleaner to clean it. All it requires is to spray it with water and wipe clean. At my house, we use a squeegee after the last shower, and an occasional wiping with a micro cloth. That's it! If your shower experiences "hard water," then this coating is a no-brainer.

CHOOSE THE DOOR

You need to decide on how you want to enter your shower. Whether you choose a sliding door, swinging door or door-and-panel, make the decision that provides the easiest access.

For example, if you are building for accessibility you will want to look at the sliding door option. It easily glides out of the way and eliminates the clearance that a door swing requires. In order to have a sliding glass door, you need to plan on having an area for the door to slide into.

CHOOSE THE FINISH

The metal finish colors options are designed to complement today's most popular faucet and bath

SEE-THROUGH SHOWERS

hardware. Most companies offer diverse enough selection to meet and satisfy even the most discriminating consumer. You should consider matching your trim, handles and hinges to your shower and faucet finish.

Some common finishes are Brushed Nickel, Oil Rubbed Bronze, Antique Pewter, Wrought Iron, plus many more.

PRICE POINT

Glass is priced per panel and based on size. Each jump in size increases the price by approximately \$150.

The size ranges are:

- 0-72"
- 72-76"
- 76-80"
- 80-84"
- Up to 102"

INSTALLATION OF THE GLASS ENCLOSURE

While it's possible skilled persons could install these enclosures by themselves, I don't see this as a DIY project. I highly recommend having an installer who specializes in glass enclosures perform this installation.

Most local distributors will key out your request to their network installer who will handle the measuring and install your glass shower enclosure.

The installation of a custom glass enclosure will add a level of quality and class to your bathroom like nothing else. **EHT**

Choose from an array of hardware styles, finishes and colors.



*A variety of glass options offer privacy and artistic décor.
Photos courtesy Basco Corp.*



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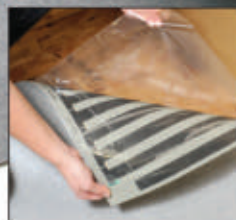
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***A DIY
Project to
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GROW VERTICAL WITH A BACKYARD ARBOR

By Clint C. Thomas, Esq.

My wife and I are blessed to live in a Victorian home that was built circa 1890. Much of the home retains its original charm and architecture, however, the landscaping has been sorely neglected at different points over the past 123 years. Local lore has it that a prior owner of the home during the 1960s was renowned for her gardening abilities and had a menagerie of botanical specimens planted all around the house. Sadly, most of those ornamentals have been lost over the years. However, a few running rose bushes, despite decades of neglect, have survived the passage of time. In an effort to preserve those historic plants, my wife asked that I build two arbors for these running plants to get them off the ground and protect them.

STARTING POINT

I began my task by clearing back the unnecessary ground cover and then laying out the four holes for each of the posts. I took measurements for each post off the exterior wall of the house that was closest to the arbor's location to ensure that they were the same distance from the house. I made each post



Carefully lay out your post locations in relation to any nearby structure.



Calculate your measurements according to the center point of the post holes.

In Alabama, the post holes should be excavated a minimum of 16 inches. Check with your local building codes to find out how deep you'll need to dig to get below the frost line in your area and prevent frost heave.

measurement to the centerline of the holes that I made in the ground. In order to make sure the arbor would be square, I measured each corner to its opposite corner in an "X" pattern. If both of the measurements are the same then the layout is square.

I dug each hole to a depth of 16 inches with posthole diggers, and I then inserted a scrap piece of 1x1 lumber into the center of each hole, that I will call a "marking post." With a scrap piece of lumber standing vertically (plumb) in each hole, I measured the distance between all of the posts to verify an equal distance. The marking posts also had the benefit of allowing me to confirm that each hole was of a level height with the others. If one post were to be deeper than the others, it

would cause the entire arbor not to be level.

POSTING UP

With all four holes dug, I then inserted a pressure-treated 4x4 post in each and pounded it up and down several times to compact the dirt in the bottom of the hole.

Begin the layout at one corner and use that post as a reference. Avoid trying to install two or more posts at the same time because it is too easy for them to end up being different heights.

Insert the first post in its respective corner. Use a post-level or two carpenter's levels, by placing them on perpendicular sides of the post, to verify that the post is perfectly vertical. It is easiest to do this with two people because

one person can hold the post and the level while the other person secures it in place. Assuming that you have another set of hands to hold the post perfectly vertical, secure the 4x4 in place with wooden braces and stakes driven into the ground. These supports allow for the insertion of concrete into the post holes without fear of the posts moving from their vertical position.

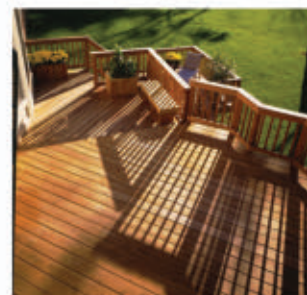
After the first post is secured in place, use it as a guide for the next post remembering to always work in straight lines and never diagonally. I like to put a small finishing nail in the top center of each post and then run a string between them with a line level. This guarantees that all of the posts are the same height, which is easily adjusted by adding or

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removing dirt from each hole.
(Imagine a compass: If you begin at the southwest corner, the next post installed should be the northwest corner and then the southeast corner. The northeast corner post

would be the last one put into position.)

With all four of the corner posts held in place with support brackets and stakes, the next step is to fix them in place with cement. A

ready-to-use concrete mix works best, and I have found that a 16-in. hole with a 4x4 post in it requires approximately 40-50 pounds of cement mix. Ready-mix concrete is typically sold in 40- or 60-lb. bags. Simply mix it in a wheel-barrel and then shovel it into the

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Plumb "marking posts" driven into the centers of each post hole help when taking measurements with a tape to ensure a square layout.



When installing the posts, check each side with two hand levels (or a post level) to ensure plumb alignment.



To align the posts at the same height, one trick is to drive a small finishing nail in the top centers of each post and then run a string and line level between them.



Secure the 4x4s in place with wooden braces and stakes driven into the ground.



Roughly 50 lbs. of concrete anchors the posts.



Brace the posts from each side to hold them in position while you pour the concrete footings.



Ready-mix concrete is easy to mix with water in a wheelbarrow using a shovel.

holes, or pour the dry cement mix into each hole and then spray in water from your hose as a "down-and-dirty" way. However, the mixing and shovel technique is the preferred method to ensure a uniform mix and proper adhesion. Always allow at least three days for concrete to completely cure and set up before commencing any future steps.



If working alone, a strong wood clamp can support the weight of one end of a 2x6 while you fasten the other.



Install the 2x6 band, ensuring an equal overhang on both opposing face boards.

CUE THE BAND

Once the concrete is fully cured, attach pressure-treated 2x6 bands around the upper perimeter of the arbor. Depending on the layout of the structure, I prefer to attach the front and rear bands first and then fill in the two sides next. All of the 2x6 bands are secured in place using 6-in. carriage bolts, washers and

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nuts. I also like to toe-nail a 3-in. coated decking screw from the top of the side bands into the front and rear 2x6 pieces to help keep the side boards in place.

It is important to confirm that both the front and rear 2x6 pieces are equidistant from each side post, and this is most easily accomplished with the aid of a tape measure and an extra set

of hands to hold the 2x6 in place while it is adjusted. Once its proper position has been determined, mark the location of each 4x4 post on the rear side of each 2x6.

Next, take down the 2x6 band and drill a hole in each end in the center of the 4x4 post markings. Then, hold the band back in place

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Mark corresponding bolt holes on both the posts and the 2x6 band.



The band is fastened to the posts with 6" carriage bolts.



Drill matching pilot holes in the posts and the band.

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and stick a pencil through each of the two holes and mark their location on the 4x4 support posts. With the exact location marked, drill holes through each post for the carriage bolts. A socket and

ratchet, together with a box-end wrench, are then used to fasten the bolts into place. The same procedure is used for the side bands, with the exception that they easily fit between the front and rear

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Use a jigsaw to cut a matching decorative profile on the ends of the band's face-boards. Stick with a straight angle or go for a curved shape.



With the band's face-boards attached, the 2x6 side-boards can be fastened between them and flush with the outer sides of the posts.

bands and don't require any measuring to determine whether the ends are equidistant apart.

If you happen to be working alone, the upper bands can be supported in place by attaching clamps to the 4x4 posts themselves and resting the 2x6 band on the upper edge of the clamps. It is still usually necessary to keep your free hand on the band, but the clamps will at least support most of the weight and keep the opposite end of the 2x6 suspended in the air.



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GROW VERTICAL WITH A BACKYARD ARBOR

TOP & SIDES

After the upper perimeter bands are in place, attach 2x6 treated boards to the top of the arbor every 16 inches on center. These pieces are attached vertically, or to say it another way, standing on edge, to the top of the arbor's band. In order for these boards to be 16 inches on center, one outside edge should begin at 15-1/4 inches and the opposite outside edge should land at 16-3/4 inches. This places the dead-center of each board at exactly 16 inches.

The final step in the construction of an arbor is to attach side pieces



Tighten all carriage-bolt connections with a wrench and socket set.



With the band complete, the vertical top boards can be toe-nailed 16" on center.



The horizontal runners were ripped from 1x lumber into inch-thick strips and finish-nailed up the sides of the arbor every 12".

for the plants to grow up. These pieces can be as simple as horizontal strips spaced evenly apart, as I did, or they can be complicated geometric patterns. There is no correct answer other than one's own personal tastes.

I made wood strips by running 8-ft. pieces of pressure-treated 1x6 lumber through my table saw, cutting them into inch-wide strips. I nailed them in place with a 16-gauge cordless finish-nailer after placing marking points every 12 inches down from the bottom of the upper band. I nailed one end



The wood strips give rose bushes and running plants a place to climb and grow as a natural way to decorate the outdoor environment.

and then used a bubble level to verify that each strip was level.

Construction of an arbor is very easy and does not require any fancy carpentry skills. A basic understanding of the concepts of square, level and plumb are sufficient for this type of project. Arbors can be as small or as large as you need or desire and they can be used for ornamental plants or running vegetable plants. If you like running plants, or if ground space is at a premium, consider building an arbor and growing some of your plants vertically. **EHT**



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Tools—
Screwdrivers*

The modern world is held together with fasteners, and whether you're putting something together or taking it apart, the right tools make all the difference. Here's a roundup of some of the latest screwdriver designs to add to your toolbox.

CHANNELLOCK PROFESSIONAL SCREWDRIVERS

Channellock Inc., a family-owned and -operated hand tool manufacturer since 1886, introduces the new Professional Screwdrivers, a line of slotted, Phillips, Torx and nut drivers designed and manufactured in the U.S. to meet the needs of the professional trades and serious DIY'ers. The new screwdriver handles are solvent-resistant, impact-resistant and superior in strength to molded designs. The precision-machined shaft and chrome-coated alloy steel blades ensure full fastener engagement, chrome plating protects against corrosion, and blasted tips provide better grip for



The new Channellock Professional Screwdrivers include 46 different tool offerings.



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The Channellock Professional Six-in-one Driver delivers greater torque than competing drivers with six- or eight-sided handles.



The new Channellock Professional lineup includes mini Torx bits and specialty bits, like the Screw Starter shown.

electronic applications. From shaft lengths of 1-1/2 to 16 inches and the broad array of bit types and sizes, including specialty bits, the Channellock Professional Screwdrivers offer a top-notch solution for whatever line of work you're in.

The new screwdrivers include 46 different tool offerings, including a six-in-one multi-bit driver designed with a four-sided, acetate handle that delivers greater torque than competing drivers with six- or eight-sided handles. Visit www.channellock.com.

GENERAL'S MULTI-PRO SCREWDRIVERS

General's new "Made in America" Multi-Pro Screwdrivers—the 15-in-1 Standard Driver, 15-in-1 Tamperproof Driver, and 14-in-1 HVAC Driver—offer

several exceptional features. The retractable in-handle cartridge with built-in bit clips makes storing, selecting and changing bits quick and easy while saving toolbox space and reducing the risk of lost parts. The Palm Saver Cap remains stationary while turning the driver handle to provide comfort, prevent blisters and enable one-handed use. The EZ-Guide Collar delivers greater control by maintaining alignment between the screwdriver and the fastener. An alloy steel shaft and engineered nylon/ABS handle make these tools nearly impossible to break. And the 1/4-in. shaft opening also serves as a hex driver.

The Standard Driver (8140) is loaded with seven double-ended professional quality bits, providing the 14 most popular standard bits. The Tamperproof Driver (8141) contains seven double-ended tamperproof bits, including the most popular security bits—



General Tools' Multi-Pro Tamperproof Driver (8141) contains seven double-ended tamperproof bits.



The HVAC Driver (8142) comes with a variety of bits, including Shrader Valve Stem and Square Awl Reamer bits to fit most HVACR applications.

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spanners, hex pins and torx pins. The HVAC Driver (8142) is loaded with six double-ended bits and one single-ended bit, including Shrader Valve Stem and Square Awl Reamer bits, to fit most HVACR applications. Visit generaltools.com.

GENERAL LIGHTED PRECISION SCREWDRIVER (75108)

General's Lighted Precision Screwdriver is a must-have for every DIY toolbox. It contains a convenient storage compartment for the included reversible bits, making it easy to keep all of the bits together in the



The Precision Screwdriver (75106) aims light directly onto the heads of screws.

handle at all times, reducing the risk of lost or misplaced parts. The precision engineered Versa-Grip handle provides maximum comfort and performance, while integral LEDs shed light directly on the screw-head work area in a 360-degree pattern. Visit www.generaltools.com.

IRWIN IMPACT PERFORMANCE SERIES ACCESSORIES

The new Irwin Performance Series is a line of bits specifically engineered for use in impact tools and the higher torque they produce. The precision tip geometry is designed for a tighter fit with the screws to reduce stripping and cam-out and increase the life of the bit. From the right length bit to the most commonly used diameters, tip types, bolt, socket and drive sizes, the new lineup ensures the right bit for a wide range of fasteners.

Irwin's 20-Piece Impact Performance Series Set (1903766) includes a magnetic screw-hold attachment with a low-profile collar that holds fasteners securely, reducing wobbling and slip. The 19 heavy-



Irwin's 20-Piece Impact Performance Series Bit Set (1903766) is designed specifically for use with impact drivers.

duty, cold-forged, high-grade steel bits all have a black oxide finish that resists corrosion. The kits comes in a molded ABS resin case with a metal hinge, and the two-step easy in/out storage holds bits securely in place until you need them.

GRIP 30-PC. MINI SOCKET & BIT SET

The 30-pc. Mini Socket & Bit Set (#62403) from Grand Rapids Industrial Products is the perfect kit for intricate repairs on today's popular personal electronic devices, such as smartphones, iPods, computer tablets and other gadgets. The kit includes drop-forged, heat-treated, S2 steel bits, a high-torque aluminum ratchet handle and CRV steel spline sockets.



The GRIP 30-pc. Mini Socket & Bit Set is ideal for repairing today's electronic devices such as smartphones and tablets.

Accessories include: 1-pc. 3-in. speed extension bar; 1-pc. 1/4-in. socket adapter; 1-pc. 4mm bit holder; 6-pc. 1/4-in. spline sockets (5, 6, 7, 8, 10, 12mm); 10-pc. ratcheting Phillips bits (#2, #3); flat bits (4mm, 5mm); tamper star bits (TH10, TH15, TH20); square bits (S1, S2, S3); 10-pc. 4mm ratchet bits; flat 2mm; Phillips #1; tri-wing #0; triangle; punch bit; spanner bit and star bits (T4, T5, T6, T8). Visit gripontools.net.

GRIP 8-IN-1 PROFESSIONAL SCREWDRIVER

Eliminate the need for eight different drivers with the GRIP 8-in-1 Professional Screwdriver (#65128). One unique design fits the following fasteners: flat, Phillips (#0, #1, #2, #3), Pozi (Pz1, Pz2, Pz3). The double injected TPR handle provides a comfortable and secure hold, and the chrome-plated S2 alloy steel shaft resists rust and corrosion. A magnetic tip holds fasteners and allows one-handed operation, and the long, narrow bits grant access to tight spaces where a hex-drive bit holder is too thick to pass. Visit gripontools.net. **EHT**



The GRIP 8-in-1 Professional Screwdriver features a long, thin single-piece shaft that can reach recessed bits in tight spots where a hex-end driver can't fit.

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SKIL 360 QUICK-SELECT

Over the past year, the Skil 360 Quick-Select has floated to the top of the *EHT* tool pile when we need a quick grab-and-go driver for simple repairs and assembly around the house, office or workshop. This

dedicated screwdriver has an innovative twist: an integrated 12-bit cylinder that houses the most commonly used tips for a wide range of fastening tasks. This eliminates the need to carry a case of bits (which

are always difficult for our crew to keep up with), and makes change-up quick and easy. Just spin the chamber like a revolver and click out your bit, stiletto style. This super-compact lithium-ion tool has a built-in battery that holds a charge up to 18 months.

The 360 Quick-Select also comes equipped with the tool



industry's first-ever USB charging capability, providing users with a more convenient way to charge the tool, whether they're plugging it into a computer or another USB port they have on-hand. The driver is lightweight, easy to use, comfortable in the hand, and even includes a Site-Lite LED work-light to illuminate dimly lit areas. Delivering 210 RPM, The 360 Quick-Select is also one of the fastest cordless screwdrivers in its class. Visit www.skiltools.com/360.



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Top Tips for Paver Patios



*Pavers provided
by Pine Hall Brick.*

By Tom Matthews

The time-honored look of brick paver patios is as popular today as ever. For homeowners in search of a backyard retreat for relaxing and entertaining, installing a paver patio makes an excellent do-it-yourself project to enhance the backyard and increase the value of the home. *EHT* offers a few building tips from the patio pros.

USE CLAY PAVERS

For patios, sidewalks and any walking surface, clay pavers represent the best value for the money because they're manufactured with the intention to be pavers rather than intended for vertical applications.

Years ago, clay pavers were made at the end of a "batch" of face bricks—the bricks that are used to build the walls of homes and businesses. As a result, they were fired in a kiln the same length of time as the face bricks. And while face bricks do a fine job of holding up a wall when they are expertly laid by an experienced bricklayer, they are not engineered to support vehicular traffic.

Clay pavers that are meant to be pavers are more durable than face bricks (they withstand up to 13,000 lbs. per square-inch of pressure, which is greater than concrete). They're colorfast, they do well in extreme heat and freezing cold,

and they are a consistent size, which makes installation easier.

PLAN SIZE & LAYOUT ACCORDING TO USE

Gather all the furniture and amenities that you will regularly want on your patio—grill, table and chairs, fire pit, etc.—and arrange everything in a logical and user-friendly location. You can then use a rope or spray paint to outline the patio area to give you a visual estimate of its size requirements.

LOCATE UNDERGROUND UTILITIES

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For patios, clay pavers are more durable than face bricks, able to withstand up to 13,000 lbs. per square-inch of pressure.

Before You Dig” number, designated by the FCC to protect American homeowners and professional excavators from the injuries, expenses and penalties caused by digging-related accidents that result in damages to underground utilities.

Sometimes, the design of the patio will depend on what’s already there. Keep in mind where the utilities are located and determine a safe way to get materials in and out of the construction site.

CHOOSE YOUR BASE

A paver patio can be built with two methods of constructing the sub-base. A patio with a rigid base has pavers that are mortared in place. A patio with a flexible base

is built with sub-layers of compacted gravel and sand.

PATTERN & SHAPE

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 basketweave pattern is ideal because full pavers can be used throughout a square or rectangular shaped patio. Using a running bond or 90-degree herringbone in rectangular areas will only require half-cuts.

SHED WATER

Don't forget to slope the soil about 1/4 inch per foot away from the house to allow for proper drainage away from the building envelope.

COMPACTION IS KEY

After excavating the patio site, use a rented plate compactor to tamp down the soil before building. (A hand tamper will also work, albeit more slowly.) After adding the bed of crushed rock, again use the compactor to tamp down the gravel base. And after installing the pavers, tamp the finished surface. Comprehensive soil compaction during all phases of construction will help ensure a strong, sturdy foundation for your walking surface.



Carefully plan the patio's size and shape according to your lifestyle needs and how many bricks you want to cut.

STINGER INSECT ZAPPER LANTERN

Airborne pests such as mosquitoes, flies, beetles and moths can be a major annoyance, particularly during the warmer months when entertaining on decks and patios, or just enjoying the outdoors. With the new Stinger Insect Zapper Lantern (BKC90), you can forget having to swat, slap and swish away irritating insects. This rechargeable lantern is proven to eliminate up to 40 percent more flying insects compared to similar products that use white UV light technology. Super portable, the Insect Zapper Lantern travels easily from the backyard to the campground and beyond.

Using black UV light technology and an Octenol lure to boost mosquito attraction, the cordless lantern is lightweight with a discreet design and quiet operation. Ideal for areas up to 625 square feet, like a campsite or a deck, the lantern incorporates bright white LED's which are perfect for lantern-only accent lighting. The Stinger Lantern offers a 3-1/2 hour run time, 3-hour charge time and a sturdy ring for carrying or hanging. Available at Wal-Mart and select Home Depot stores, MSRP: \$29.99.



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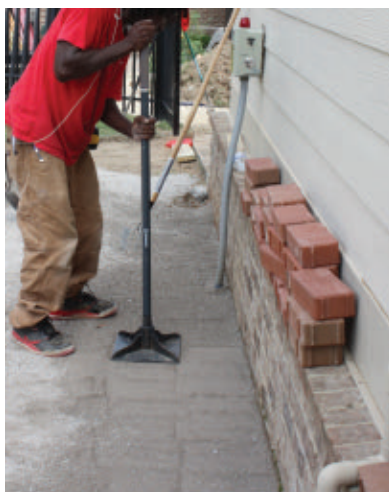
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Dig deep enough for the thickness of the pavers plus a minimum of 4 inches for crushed rock and an inch of sand to use as a leveling bed.



In some cases underground utilities and other obstacles will determine the design of the patio. This patio surface was built to retain access to a water meter.



The subsoil and the gravel bed should be thoroughly compacted prior to installing the pavers.

EXCAVATION

As a general rule, patio pavers require about 4 inches of compacted crushed stone as a base for pedestrian use (up to 8 inches for climates where ice heaving is a problem). Dig deep enough to include the depth of the crusher run gravel, plus one inch of sand, and the paver itself on top. When installed and compacted, the paver should be just above the top of the ground.

Carefully level the pavers as you 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.

FILL JOINTS WITH SAND

Joint sand is the key to providing interlock between pavers and providing cushion between the pavers to prevent 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. **EHT**

Learn more about clay patio pavers at www.pinehallbrick.com.



Make sure to build the patio with a consistent slope to drain water away from the home.



Continuously level the pavers during installation to maintain a flat walking surface and eliminate high spots.



When a different construction crew hauled off all the sand at a local supplier, this crew decided to install the patio without sand. A sand bed, however, can be screeded smooth much more easily than crushed rock for an even surface on which to install the pavers. Without the sand, the installers had to keep re-smoothing the gravel base to make micro-adjustments to the paver placement. The extra work added a lot of time and aggravation to the project, but provides a prime example of why a sand bed is important.



Use a rubber mallet to set the pavers firmly in place. Once the patio is complete, fill all joints with paver sand to lock them in place.

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Water Works

Poly Pipe Sprinkler Repair



By Larry Walton, Photos by Tim Walton

It's not important to know that my brother Chad backed a trailer over our broken sprinkler. The important thing is that we get it fixed. Of course my brother, Chad, the one who broke this sprinkler, was nowhere to be found when it came time to repair this thing, but I'm not dwelling on it because I just need to get it done—even without my brother's help.

The fact that the geyser coming from the yard was depositing dirt and rocks on the sidewalk indicated that the break was down deep rather than higher on the pop-up sprinkler. Sure enough, when I pulled on the sprinkler head, it came right out of the ground. I was disappointed to see that this

was not simply a broken riser. In that case an extraction tool could have gripped the remaining riser pipe to back it out. Finishing the fix would only require threading in a new one.

Time to get out the shovel and get down to the heart of the matter. A word of caution here: Be careful with the shovel because you can cause a problem worse than the one you are trying to fix.

The goal when getting through the grass is to fold back the sod so you can replace it in one piece when the sprinkler repair is done. You have to get deep enough to avoid damaging the roots of the grass but not so deep that you get into the pipe that feeds the sprinkler.

Unless you installed the sprinklers to begin with, you probably will not know the type of pipes that are under the lawn. Even if you have a good guess, you'll still need to dig down to the pipes so you can see what parts you'll need.

In our case, the pop-up sprinkler was fed with flexible pipe. This was not the super flexible pipe like Rainbird Swing Pipe or Toro Funny Pipe. However, the previous homeowner used the same type of fitting that these pipes use. The barbed fitting simply pushes into the end of the pipe, going one direction but not the other.

Here's how I got this repair done without my brother's help.

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When I looked out and saw a geyser at the corner of the lawn, I shut the sprinkler zone off and saw that the water had deposited a fair amount of dirt and rocks on the sidewalk. This meant the problem was deep enough below the sod to blast out some substrate.



By pulling up the pop-up sprinkler head, we could see that the elbow fitting that connected the sprinkler head to the flexible pipe was broken at the turn in the elbow.



The initial goal in digging up the pipe is to fold back the sod without damaging the roots of the grass.



After removing the sod and carefully digging down to the pipe, I found that the other half of the broken elbow was still in the flexible pipe.



I used pipe cutters to cut the pipe just beyond where the broken fitting extended into the pipe.



A 90-degree barbed elbow simply replaces the broken fitting.



I inserted the barbed fitting into the pipe until you could no longer see the ribs or barbs.



I used the pipe cutters to grip the broken connector to unscrew it from the sprinkler head.



The sprinkler body threads onto the elbow fitting.

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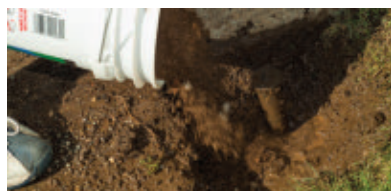


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The hole needed some extra dirt before replacing the sod.

I put the sod back in place around the sprinkler head.



I started the sprinkler zone with the sprinkler nozzle removed from the riser to clear debris from the pipe.



After replacing the nozzle, I adjusted the sprinkler and tested it for the running time of the zone. EHT



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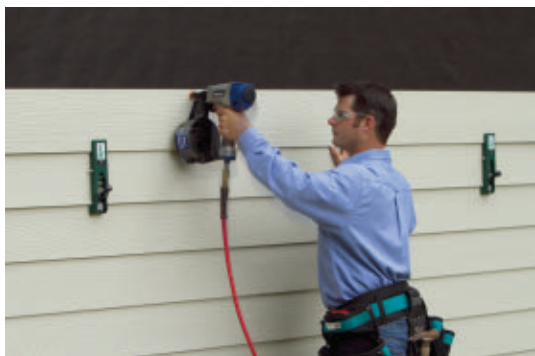
Too many times the structure of a deck and patio are in very sound condition, but the surface appearance makes homeowners want to give up and pay the substantial price to replace the substrate completely. Not only is this choice not economical, but it certainly isn't "Green". United Gilsonite Laboratory has developed a new coating that is designed to give new life to those tired surfaces. UGL NuDECK Wood and Concrete Restorative Coating extends the life of a deck and patio with a paintable solution. From the can



it creates a new, slip-resistant surface for decks, walkways and patios. The tintable color palette coordinates with UGL ZAR Solid Color Deck and Siding Stain to complement the color of surrounding vertical surfaces such as siding, railings, posts and walls. The product is ten times thicker than paint or stain and fills 1/4-in. cracks and nail holes. It locks down surface splinters and can be tinted in 30 different colors. Visit www.ugl.com.

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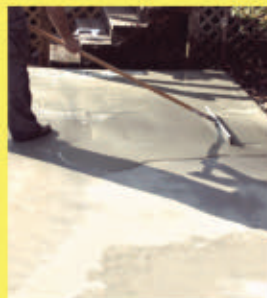
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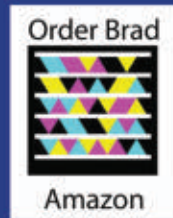
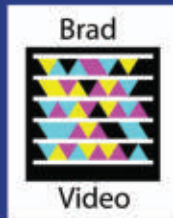
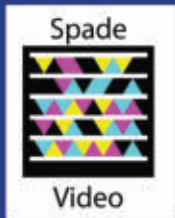


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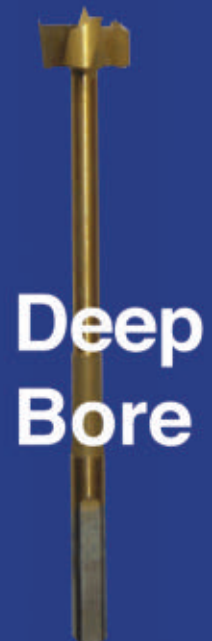
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