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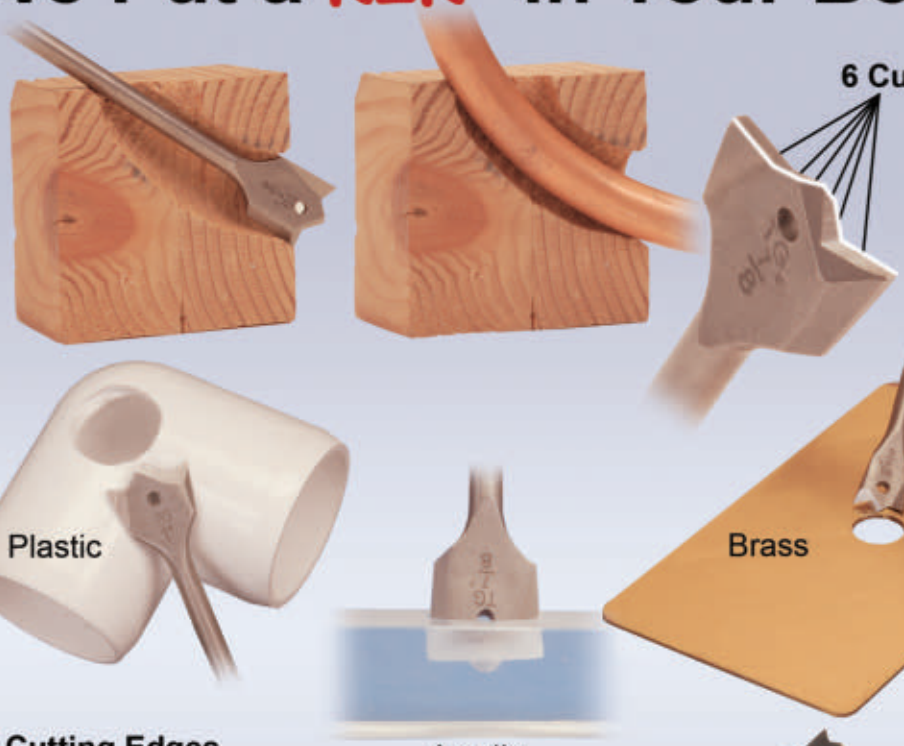

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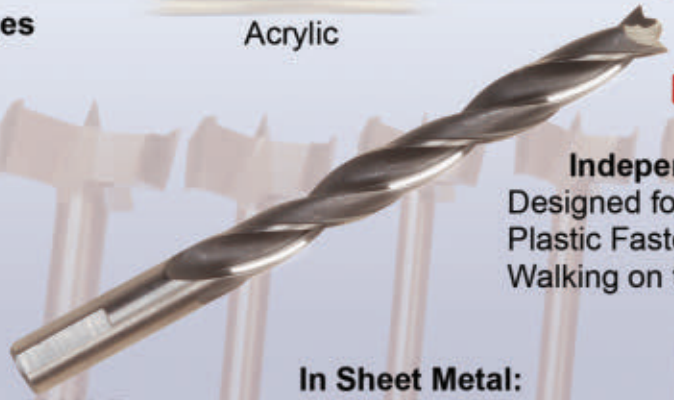

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Extreme How-To

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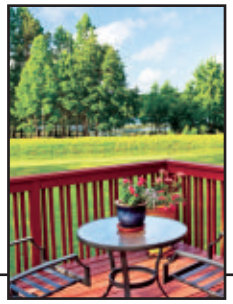

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Q&A Got a ?

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Q: *Some of my patio pavers have settled below the surface of the surrounding retaining wall. How do I extract the pavers when I can't get ahold of them with pry bar?*

A: Try using some concrete screws. Predrill the paver and then use a hammer-drill to drive the concrete screw solidly into the middle of the paver, but leaving about 3/4-in. of the screw protruding from the surface. Then, use vise grips to grab the screw like a handle to work the paver from side to side until you can pull it loose. Once the first paver is out, it should be easier to remove the others around it, allowing you to build up the sand and rock beneath the pavers.

Q: *How does straw-bale construction work?*

A: This construction method uses rows of straw bales as structural wall components over a raised footing or foundation, with a moisture barrier between the bales and the foundation. Each succeeding course of bales is staggered at the joints, just like block or brick construction. The bale walls can reinforced with bamboo, rebar, wood, metal bands or wire mesh. The completed straw-bale walls are finished with several layers of stucco or plaster. Advantages of straw-bale construction over conventional building systems include the renewable nature of the material, low cost, easy availability, natural fire resistance and high insulation value. Disadvantages include susceptibility to rot and the substantial space requirements to accommodate the size of the hay bales.

Q: *I plan to convert my unfinished basement into a finished living space. When installing drywall on the basement ceiling, do the panels attach directly to the underside of the joists?*

A: Rather than attaching directly to the joists, the ceiling should have wood or metal furring strips attached perpendicular to the joists. In most houses the ceiling joists will be inconsistent, with their lower edges located at slightly different elevations that can result in an uneven drywall ceiling if directly attached. To install the furring, pull a string across the bottom of the joists and attach it to the opposite side of the ceiling. Check the string for high and low spots. High spots will need to be planed; low spots will need to be shimmed. For the furring strips, fasten wooden 1x3's or metal resilient channel across the joists, checking for level and shimming as required. Finally, install the ceiling panels across the furring strips, staggering the panel joints from row to row. A homemade "deadman" or T-shaped 2x4 brace will help hold the panels while you screw them into the furring.

Q: *I've seen a faux finish painting technique that combined two different colors onto a wall. What is this technique called and how do I do it?*

A: The two-tone technique you've seen is probably the result of using a glaze in conjunction with a standard base coat of paint. The glaze modifies the appearance of the base coat by partially concealing it with a translucent filter. The glazing technique can be "positive" or "negative." With a positive technique, you add glaze to the wall to enhance the decor. With a negative technique, you cover the base coat with glaze and then use a tool such as a sponge or rag to remove it, revealing the base color beneath. **EHT**

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The Hole Truth

Digging the Perfect Post-Hole

By Mark Clement

A post-hole is more than just a hole in the earth. It is a shaft cut straight down into the ground to particular size in a particular place, despite all the root and rock obstacles between your shovel point and the bottom. It is also a heck of a lot of work, so I want to do it right the first time whenever possible.

"Right?" you might ask. "Dude, it's a hole. Taking yourself a little too seriously? Grab your post-hole digger and get to it."

This reply might fly for a mailbox post (but even those must comply with mailbox placement regulations—see sidebar). However, for a deck, fence or pergola, post holes need to be right or something goes seriously wrong with carpentry layout, profitability and/or inspection. If they're not the right shape and correct depth, they won't fly.

I've dug (and re-dug) hundreds of post holes, both alone and with other people, who swear they know how to do it. The key to digging post holes correctly is to understand what you're digging and to throw away old assumptions about the tools everyone has in their shed or garage.

WHAT IT IS

It's best to think about post holes as shafts. They should descend straight (plumb) down from where you start digging them. The sides of the shaft are straight and the bottom of the hole is flat (or at least flat-ish). In other words, if your hole looks like a cup or a bowl, well, it's not a post-hole.

This concept is pretty easy to get your head around. In reality, however, it is more difficult to execute because it requires us to use the most basic tools we own (shovels, digging bars, etc.) that we've all used a zillion times for shoveling projects—mulch/snow, leveling the yard, turning over the garden—in a different way. Digging a proper posthole is all about getting started in the right place and going the right direction. And that is harder than it sounds.

GETTING STARTED

Different people lay out post-hole locations differently, usually by running strings or pulling layout from an existing structure. However you get there, the first thing to do is mark the whole hole.

Center. The first thing I mark is the center of the hole. I then take a screw or nail, shove it through a hunk of caution tape or red duct tape, and plug it into the ground. Next, I grab a can of spray paint and paint a 24-in. "X" across the center of the hole. (I learned this trick in Joplin, Missouri, building the Boomtown playground with the crew of *Extreme Makeover: Home Edition*.) This cross mark helps keep me on target. The next step is to dig out the screw marking the hole's center.

GET THE SHAPE, CUT THE SOD

Like many projects, starting on the right foot is an indicator of things to come. For post holes, I like to slice the earth at the top of the hole in a square, and

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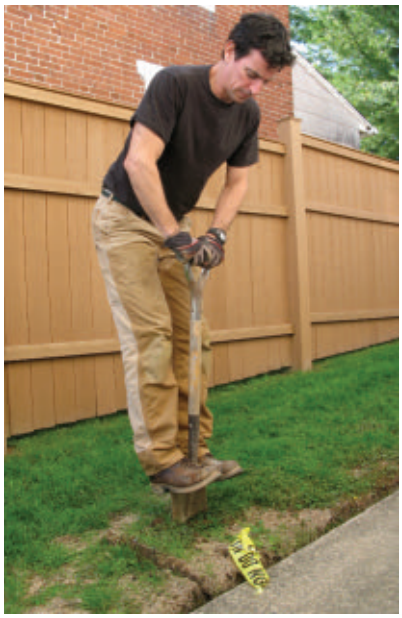
there's hardly a better tool for that than a garden spade. You can measure your hole width (decks with 6-by-6 posts or 12-in. builder's tube usually require a hole that is 16-by-16-in. square or diameter or larger).

Start digging with a garden spade to cut through the turf.

Keep the blade plumb and jump straight down on the spade to cut the walls of the shaft-shaped hole.



The other critical job the spade does is help get the sides of the hole going down straight from the get-go—which is the first hardest part of the job and the thing that'll chase you right down to the bottom of the hole. Lean the handle away from you to get the blade plumb, then jump on that bad boy like you mean it to sink the blade below the sod.

EARTHWORK

I like the spade to get started, but after getting under the sod, I need to scoop out the loose dirt that's in the hole, and for that I switch to the long-handled shovel.

To cut the earth straight off the sides of the shaft, you have to lean the shovel handle outward in a way that might seem uncomfortably far away from your body. However, you know that when you're reaching for the handle, the blade of the shovel is cutting straight down.It is usually around this point in the hole where things go wrong with a rookie because they try to scoop instead of cut. Once you've sheared off the sides of the hole into the bottom, then you scoop out the loose fill.

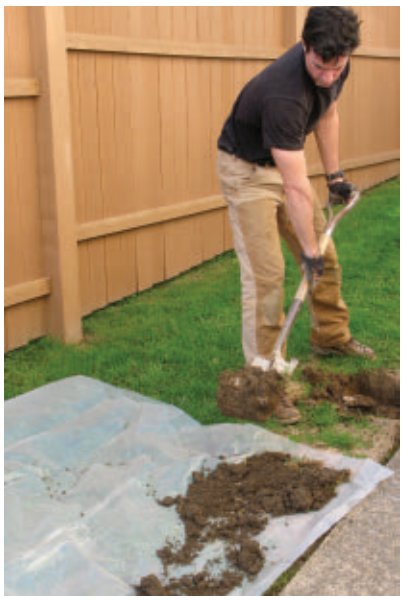
That's pretty much the mojo, although root, rock, clay and other obstructions will conspire to nudge you off course. Nudge them back.

OBSTACLES

Digging a shaft is harder than most people think, and it takes almost nothing to get off track. It's kind of like swimming in a straight line under water—there's nothing to gauge your progress against. A root or rocks can knock even a skid-steer powered auger off line. To help keep the shaft plunging straight down, I employ a whole battery of tools.

Digging Bar. My primary go-to for layers of rock-hard clay, smallish rocks and roots is my digging bar. It can pierce and puncture clay layers. I slam it down the edges of the shaft, then I use it to chew up the center of the hole. I then return it to the edge of the hole and pry against the rim until I'm through the clay. Rinse and repeat. And, unless you've got calluses on your calluses, wear gloves; this steel likes skin.

Check local building codes for post-hole size requirements. Deck posts often require a 16" square hole.



Store the excavated dirt on plastic or plywood to keep the surrounding lawn and landscape clean.

There's also nothing more brutal on small roots than the digging bar blade. Kind of like a shear, I plunge the bar down into them. Sometimes I start at the edge of the root to get it cut, then take subsequent blows to get it out.

The bar can also pry rocks out from the edge of the shaft. And, if there is an old footing down there, such as the edge of a sidewalk or rock that'll fracture, you can use the digging bar to delete those obstacles with lead-pipe brutality.

However, when pounding down into the hole, make sure to try and keep the rim intact. No matter what happens inside the hole, this is the control point.

Recip Saw. Some roots are simply too big for a digging bar to cut through—and too deep for a mattock (awesome root cutter) or axe—to get at. For those, I clear as much dirt from around them as I can and cut them out using my recip saw. Expect dirt to blow up in your face from the saw's exhaust, and for typical demo blades to gum up because the wood is so green. Blades with massive gullets and super sharp teeth really evens the odds.

Jackhammer or Rotary Hammer. I've encountered dirt so hard that there is simply no other way through it than to go hardcore muscle. For those instances, an electric jackhammer can save the day. I've also found my way through uber soil using my rotary hammer and a "spade" type bit. It breaks the soil up just like a jackhammer will, but with less power and more maneuverability. You can rent either tool easily.

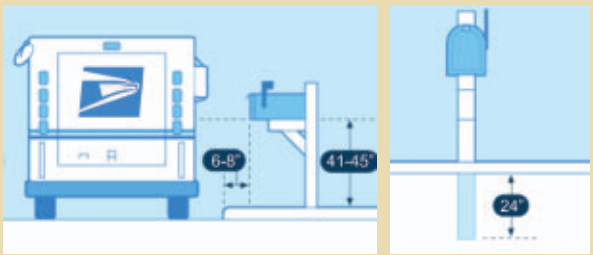
DEPTH

To meet structural requirements for inspections, whether you're building a deck or dropping piers for an addition, the inspector not only wants to see the bottom of the hole, but that the bottom is far enough away from the top. An easy way to get a measurement is to bridge the hole with something straight like your shovel or hunk of 2-by so you can sink your tapefrom it and get a decent reading.

The Bottom. Getting every fleck of dirt out of the hole isn't really possible, so once I'm deep enough and have made the bottom relatively flat, I jump in and tamp it down with my feet. Trust me when I tell you that a hole bottom that is flat and free of debris makes positioning a post or tube significantly easier. And every inspector I've met likes to see nice, neat work. Once they start seeing sloppy stuff, they're extra vigilant. In other words, if you can't get the hole right, what else is a mess?

MAILBOX GUIDELINES

According to the US Postal service, your local postmaster must approve the location of your mailbox. This typically means that a roadside mailbox must be located where a carrier can reach inside without leaving the truck. That means positioning it about 41 to 45 in. off the ground and back about 6 to 8 in. from the curb. Visit www.usps.com for more information.



With the turf removed, a long-handled shovel does a good job of removing the dirt. Dig with the blade plumb and the handle pushed forward to keep the walls of the hole straight up and down.

Digging the hole involves more cutting than scooping. After cutting the straight walls of the hole, scoop out the loose fill from the bottom.

EXTRA DIRT AND THE REFILL

In a landscaped yard dirt can co-mingle with the grass and be a mess to clean up, especially on extended projects and/or if it rains. A sheet of plywood is a great bond-break between grass and dirt congealing around it. Sheet plastic works too, as long as you're re-filling in 24 hours or so. And, on longer projects, it makes sense to cover the dirt pile with plastic to keep it dry so it is easier to work when refilling.

An easy way to get a depth measurement is to bridge the hole with something straight, like your shovel, so you can sink your tape and get a decent reading.

Once the hole is deep enough and relatively flat, I jump in and tamp it down with my feet. Every inspector I've met likes to see nice, neat work.

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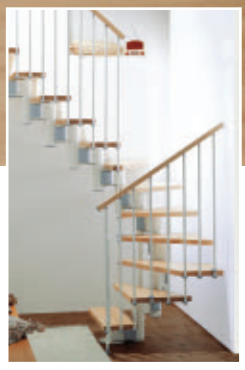
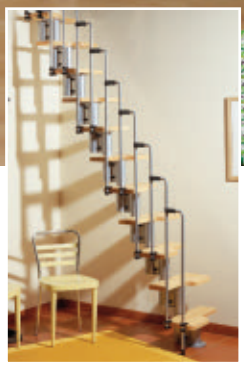


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You will have more dirt left over after the fact. The post, tube, concrete etc., all take up space—plus the dirt is entrained with air. There are a number of techniques to refill the hole, all of which work with varying degrees of success.

You can tamp down the dirt as you refill it (with a tamper, the back of a digging bar or the head of a sledgehammer), but you have to be careful not to move the post as you pack dirt around it. You can also overfill the hole, which will then sink down as water and gravity take effect. The top of the hole may stay proud of the ground or sink below, so this one can be tricky.

The bottom line is that in order to build up, you have to dig in and dig down first. **EHT**

POST-HOLE TOOLS

My main post-hole tools are a spade, long-handled shovel, a digging bar and a tape measure and/or level (for layout and depth measurement). You might notice there is no post-hole digger. Not only are they brutal to use (I have rarely been as sore after a day behind a post-hole digger), but they either don't cut a hole big enough, won't cut through tough soil, or they don't scoop out as much dirt as I can get with my shovel. I'm not saying they don't work, but when you're staring down a dozen 40-in. deep holes for a fence, any move you can save is a good move.

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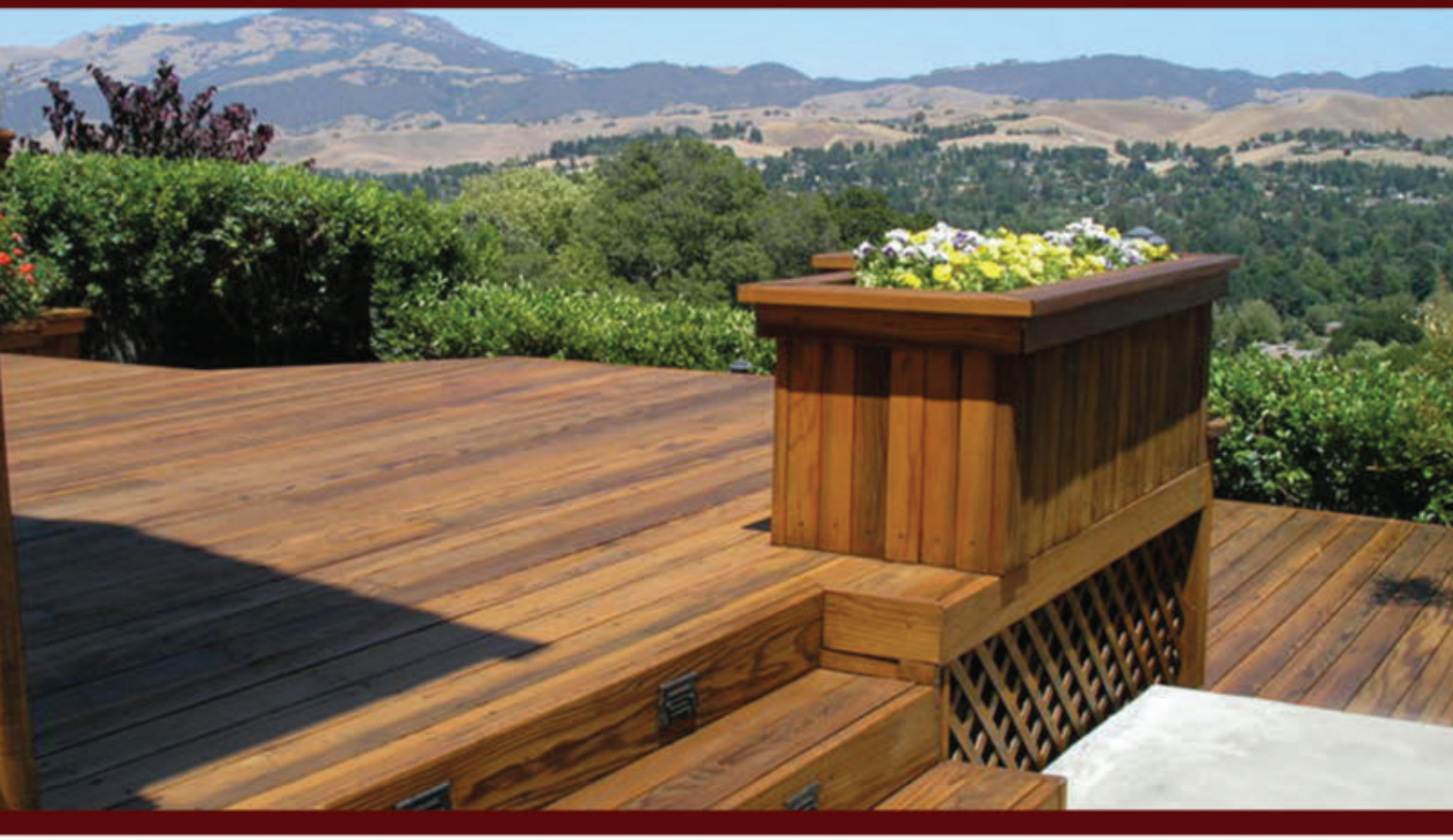

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Repair Carpenter Bee Damage

Some bees leave bullet holes. Here's how to fix them.

By Matt Weber

I assume that carpenter bees were named for their affinity for wood, because they do love to chew it up. However, carpenters use wood to build things, whereas carpenter bees tend to damage the wood in whatever you've already built. In that regard, maybe we should rename them "vandal bees" or "tiny saboteurs."

More than 500 species of carpenter bees exist throughout the world and nearly all of them burrow into dead wood to nest and lay their eggs. They don't actually eat the wood, but chew it up and then messily discard it around the hole they're digging. The bees typically burrow into the underside of a board or beam, such as a deck joist or fence rail, leaving signature piles of sawdust beneath the nesting location. The entry to the nest is typically a round hole that is approximately 1/2 in. wide. Although each nest has a single entrance, the nest may have many adjacent tunnels hidden within the wood. This network of tunnels can weaken the structural integrity of the boards, which is why it's important to stop these diminutive flying drill bits from rendering your outdoor wood to Swiss cheese.

DAMAGE CONTROL

My first attempt at repairing bee damage involved filling the holes with wood putty and/or caulk. Whereas this can eventually work, it can also take a lot of time and reapplication. Because the bees displace so much wood, it takes a lot of product to fill the holes. When the holes are filled with a lot of goop, you can expect shrinkage once the product cures. When the product shrinks, the hole is no longer completely filled, requiring at least another round of caulk or putty—and possibly even more.

For a better method of damage repair, I turned to Rob Baugher of Baugher Design & Remodeling in Birmingham, Alabama (www.remodelit.info). Rob is a friend of *EHT* who hosts the Our House radio show on Saturday mornings. He suggested the dowel-plug procedure that we detail in this article, which proved to be much more effective than gooping the bee holes.

STEP-BY-STEP

1. Locate and mark the damaged areas. Small piles of sawdust beneath the underside of wood boards are the calling cards of carpenter bees and will help you pinpoint the holes.

2. Inspect the structure thoroughly, because one nesting hole often indicates a broader a problem with multiple areas of damage.

3. This photo gives a peek inside a nesting hole, where the adjacent tunnels are visible inside the wood.

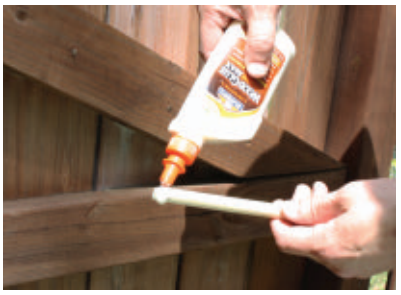
4. Measure the diameter of the hole.

5. Choose a wooden dowel of the appropriate diameter to use as a wood plug. I purchased a couple of different sizes to accommodate different holes.

6. Soak a cotton swab with isopropyl alcohol.

7. Use a small dowel or stick to shove the alcohol-soaked swab deep into the nest. The alcohol displaces the oxygen, so no bees or larvae will survive to burrow out of your repair.

8. Choose a dowel that will achieve a tight fit. This may require whittling the end to size with a knife.



9. Coat the end of the dowel with a quality, stainable exterior-grade wood glue.

10. Twist the dowel tightly into the hole as deep as it will go.

11. Cut off the excess dowel. An oscillating tool is perfect for easily cutting the dowel, but a mini hacksaw will also work in a pinch.

12. Touch up the repair with some matching wood stain, and then repeat the procedure for the other areas of damage. **EHT**

Build a wooden rose arbor to enhance your home's outdoor appeal.

A ROSE BY ANY OTHER NAME

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

Webster's New World Dictionary defines an arbor as a place shaded by trees or shrubs, or, especially, by vines on a latticework. Most men would define an arbor as a "honey-do." As in, "Honey, do this for me." This is just what happened to me. My wife, Shellye, asked that I build her an arbor for two running rose bushes that had been neglected for many years.

The two bushes were growing on either side of a cement walkway that led from a patio to the children's play area. The yard between the patio and the fenced-in play area is terraced, causing the pathway to slope downward from the patio. Fortunately, the rose bushes were located at the bottom end of the walkway on level ground, making the installation much easier than if they had been growing on a slope.

DESIGN FOR THE SITE

To begin this project my wife cleared away the unwanted foliage around the rose bushes and along either side of the concrete walkway. By clearing the ground, she provided me with an unencumbered work area to lay out the posts that would support the arbor. My wife wanted to have three posts on either side of the walkway, so I took

some basic measurements of the area in question and found that it measured 6 ft. in length and slightly over 9 ft. in width. I divided the 6-ft. length into equal thirds and dug holes 12 to 18 in. deep at the 1-, 3- and 6-ft. marks. I dug these holes with a post-hole digger.

I learned a handy trick for digging holes in hard Earth. Dig as much as you can and then fill the hole with water from your garden hose. Let this sit several hours and repeat the process. After the water from the second filling has settled deeper into the ground, dig out what dirt you can and then repeat this process if needed.

I repeated the same layout process on the other side of the walkway, making sure that I measured from the outer most edge of the walkway to the center of each of my of holes to ensure that the posts on both sides of the path would be the same distance from the path. In other words, you don't want to have the posts on the right-hand side 2 ft. from the edge while the posts on the other side are 3 ft. from the edge. This would look unbalanced to say the least.

Length and width measurements are not the only ones that need to be taken at this juncture. The majority of the construction on an arbor is on its top. Therefore, it is of paramount importance to make sure that all of the posts are the same height. Very few pieces of Earth are completely flat. It seems like everywhere has its ups and downs. The best way to rectify this problem is to start in one corner and treat it as your control point. I chose to start in the corner that gave me the most room to maneuver and that was on the higher end of the walkway. Remember, the ground that I was working on was flat, but the walkway sloped from a higher terrace down to ground level. Therefore, I had to make sure that a person taller than 6 feet would not hit their head when they started down the walkway.

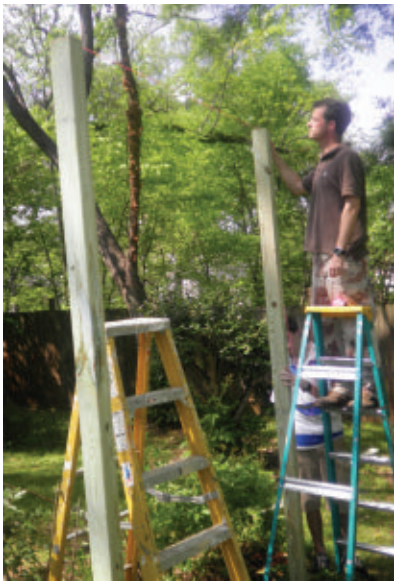
By measuring up from the walkway's highest point and then taking another vertical measurement from the bottom of the walkway at ground level, I determined that I needed to use 10-ft. 4x4 posts for the support beams. The first foot of each post would be buried in the ground and this would give me another 9 feet for headroom. This may sounds excessive, but once you take into account a 2-ft. tall terrace on the high end of the walkway it only leaves 7 feet of clearance. Most doorways are 6 ft., 8 in. high, making my 7-ft. height just about perfect.

BASE CONSTRUCTION

Start with the control post and cement it into the first corner hole. Be sure that you check for level and plumb. This can be done by holding a twenty-four inch level on two adjacent sides of the 4x4 post and moving the post until the bubble reads level on both sides. A handy gadget is a post level, which is made to fit over a corner of a post and will give you the two measurements at once.

Follow this by standing another post in the hole at the opposite end without any cement. The best method to check if the two posts are level is by using a string and a line-level. I hammered a small finish nail into the top of each post

The arbor's post holes were spaced 3' on center.



A tightly pulled string helps to keep the posts in line.

Use a level to check that each post is plumb.

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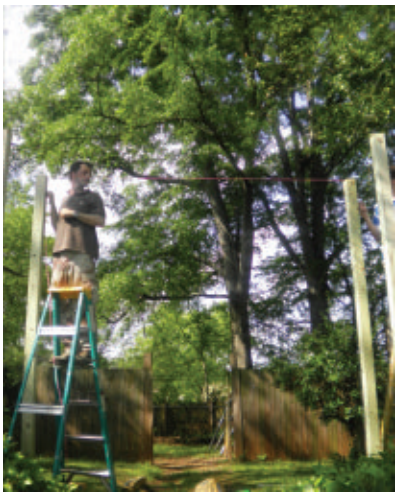
2½" Wide	1½" Wide	Rails	1¼" Wide	
2½" Square	1½" Square	Post	1¼" Square	1½" or 1¼" Square
Black or White Powder Coat		Finish	Black Baked Enamel	Black Powder Coat
36" or 42"	36"	Installed Height	32" or 36"	36" or 42"

before I erected them and ran a high-visibility colored string from the control post to the post at the opposite end and hung a line-level from it. The height of the post at the opposite end, and any posts in between the two ends can be raised or lowered by adding or removing dirt from the holes. Be sure to tamp the bottom of the hole to compact the dirt if you add any dirt to the hole. Otherwise, it will naturally settle, causing the post to sink which can then create possible structural problems over time.

Once you're sure of placement, anchor the posts with quick-drying concrete.

Slope the concrete away from the posts to shed water.



We used a line level on a string to mark the placement of the 2x6 band that surrounds the top of the posts.

Use a tape measure to determine the length of the first two 2x6 boards.

Once the two corner posts are cemented into place it is an easy task to position the middle post. Make sure that it is no higher than the string line running between the two end posts, and to be doubly safe, have someone hold it level and plumb and then stand back and look down the axis of all three posts. They should all line up in a perfectly straight row. If they do not, then you will need to adjust the malfeasant post accordingly. This is why it is a good idea to dig each post hole to a larger diameter than is needed— you can make small adjustments to the post by simply moving it around inside the hole.

A word of caution should be given here. The old adage of "measure twice, cut once" is very important when performing this type of project. If the posts are out of alignment along any axis then the entire project will be off. The last thing that someone wants to do is cement six posts into the ground only to find out later that some of them are too tall, or even worse, too short or not in a horizontal line with the other posts. So, measure, measure and measure some more.

Once all three posts are set in place on one side it is now time to set the other three on the opposite side. This is done in the exact same way, except that it is important to make sure that the second set of three posts are the same vertical height as the first three. This is also done with a line level. Work off of the original control post on the first side and stretch the string across the walkway to the corner post immediately opposite it. Using the line-level as the guide, add or remove dirt from the hole to adjust the height of the new corner post.

Once all six posts are anchor-ed into the ground with cement it will be necessary to wait three days for the cement to harden and cure before you begin any other construction. This is one of the reasons that this type of project makes a perfect weekend project. The posts can be set one day and then the top can be built the following weekend.

ARBOR TERRACE

The construction of the top of the arbor will go much faster than erecting the posts, since the time-consuming part of checking multiple measurements is done. Begin building the top by wrapping a

The arbor is supported by two rows of three equidistant 4x4 posts.

2x6 band around all four sides. I chose to use 12-ft. long pieces of treated 2x6 across the front and back of the arbor so they will overhang each side by a foot. For aesthetic purposes alone, I cut a decorative pattern on each end of these one-foot tails. Any pattern can be used, and almost anything can be used as a template. I used a carving from a piece of antique furniture because my wife and I liked the curved shaped.

Attach all four pieces of 2x6 with carriage bolts, making sure to use flat washers on either side. I found that it was easier to mark where the posts would fall on the front and back pieces and then drill holes in the center of the marked areas while they were still on the ground. My son Sterling and I then held each of these two pieces in place against the support posts and marked the location of these holes with a pencil. This way we could drill accurate holes in the posts without having to hold a heavy board in the air at the same time. We attached the front and back pieces first and then filled in between these with 2x6 for the sides of the band.

With the top banded all the way around all four sides, the next step was to attach rafter pieces so they were running perpendicular to the front and rear horizontal pieces. A simple measurement revealed that the best spacing for these pieces would be every sixteen inches on center. By extending my tape measure along the length of each of the front and rear horizontal pieces I was able to mark every 16 inches.

Each rafter will need to have the same decorative pattern cut into it as the front and back horizontal pieces, and they will also need to have the edges sanded

We used an old piece of furniture to create a template for the decorative detail on the ends of the boards.

We then used the template to mark the decorative profile on the board ends.

Cut the curved profile with a jigsaw.

A ROSE BY ANY OTHER NAME

Sand the contour to clean up any rough edges.

Use a Speed Square to mark bolt locations where the 2x6 boards intersect the posts.

The rafters are connected to the posts with through-bolts that must be predrilled through the 4x4's.

to remove any rough edges. I found that it was easier to attach these with 3-in. long outdoor decking screws, toe-screwing them at an angle.

Once the top was built, the final step was to attach 1-in. long horizontal strips on each side that the roses would grow through. To save money, I opted to buy six pieces of 1x4x8 treated planks. I then ran

Connect the rafters with 1/2" lag bolts, nuts and washers.

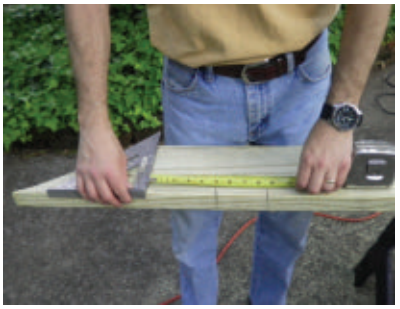
Hanging the 2x6 boards is a two-man job.

these through my table saw with the fence set to give me exactly a one-inch wide finished product.

These strips were installed with screws directly into the 4x4 support posts. Another word of caution is recommended here. Pressure-treated lumber can become extremely brittle, and a 1-in. wide strip is prone to splitting or cracking when a screw is run through it. To remedy this problem, I predrilled the screw to the same diameter as the screws. For added security, washers can be added to the heads of the screws.

The final part is to determine the layout for the horizontal strips. This will vary with personal preference as much as it will with every project. The best way to do this is to hold a tape measure along the outside edge of each corner post extending from the ground to the top of the support post. Then, decide where to mark your lines. For my project, my wife and I chose to have these horizontal strips one foot apart, so I made a pencil

Use a level to make sure your structure is true.



We carefully measured and marked the post locations on the rafters before lifting into position.

mark every 12 inches on one post and used a laser level to shoot a line across the other two posts.

Like all of my classmates in school, I never thought that I would use any of the math that we were being taught. I was convinced things like fractions, geometry, and how to determine area were a waste of my time to learn. Fortunately, my father thought otherwise. Many construction projects utilize all of those mathematical formulas and rules that I

The top of the arbor is wrapped on all sides by a 2x6 band, consisting of two decorative rafters and two square-cut 2x6 boards that fit between them.

Install the square-cut 2x6 pieces between the first two rafters to complete the top band.

When marking the band for placement of the rafters 16" on center, the pencil mark depicts the next 16" point in sequence. The red mark is placed 3/4" back from the pencil mark. This will guide the nominal 2x6 board to be centered directly on the 16" mark.

We attached the top row of decorative rafters by toe-screwing them to the top band with 3" decking screws.

Place the rafters perpendicular to the shaped boards of the top band and space them 16" on center.

Measure the post height and divide it by the number of horizontal strips you'd like the roses to grow through.

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shunned as a child. Building an arbor is a simple process with the application of a few of those mathematical principals. If a person can use a tape measure accurately and can dig a few holes in the ground, then they can build an arbor and turn a "honey-do" into a “honey-done.” **EHT**

We used a laser level to cast a laser site-line over the posts to easily mark the 4x4s for placement of the 1" horizontal strips. We spaced the horizontal strips 1' apart. Be sure to predrill the strips for the screws to avoid splitting the wood.

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DECK REDO

By Monte Burch

Renewing a Deck with an Elastomeric Coating

When our deck weathered to splits and splinters we had a major problem. With more than 1,800 square feet of decking surrounding an above-ground pool, a number of the boards had also rotted. We didn't want to rebuild the entire deck, nor install new composite decking because most of the deck boards were still solid but weathered. Although an awning protected the ends of the boards close to the house, their outer ends were badly weathered. Rather than replacing the entire 16-ft. boards, we only wanted to replace the weathered sections. However, recoating the new sections with a deck stain/preservative wouldn't match the old boards, even with a number of coats.

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

The weathered boards of this big pool-surround deck had lots of splinters and sun and water damage.

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

BIG DECK REDO

Restained and reinstalled pool railings finish off the deck/pool surround.

Many old boards had wide cracks and splinters. The first step was to test for any soft or rotten spots.

Sections of boards were removed by first locating joists.

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

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

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

REPAIR AND PREPARATION

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

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

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

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

We fastened short sections of 2x6 blocking on the cut side to the existing joists. We then cut the replacement boards to length and fastened them over the blocking. If a board ends at an angle, use the old board to mark the proper cut line.

Note: If possible, position new deck boards with the crown facing up so water will run off. For this reason, be selective in purchasing so you have a good recognizable crown side. Examining the end of the board will reveal the crown.

The pool railing sections as well as the outside railings and benches were given fresh protective coatings using Superdeck Transparent Stain. The stain is a high-solids, professional-grade wood finish. The stain uses high-quality pigments to inhibit damage caused by the sun, a three-oil

Starting holes are bored in the corners of the mark.

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

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

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

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

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

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

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

system to provide superior protection, and a highly effective mildewcide to inhibit mildew growth on the coating surface.

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

New boards are installed with quality exterior deck screws.

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

The deck and steps are lightly power-washed.

Super Deck Exterior Cleaner concentrate is used to clean the wet areas.

The product is first thinned with water.

The diluted cleaner is applied with a roller.

The deck is brush-scrubbed and power-washed.

BIG DECK REDO

Superdeck Exterior Cleaner was used to thoroughly clean the entire deck. The Cleaner is a concentrated product formulated to remove foreign matter from wood, including: oxidized (failed) wood coatings, dirt, grease, oil, pollen and surface stains caused by mildew. The product dilutes with water. The surface must be sprayed with water first, then the diluted product can be applied with a brush, roller or pump-up sprayer. The surface must be kept wet by occasionally misting with water. Allow it to stay on the surface for approximately 15 to 30 minutes, keeping the surface wet.

Test a small area by scrubbing with a brush to determine if the surface is ready for rinsing. When ready, scrub the surface with a firm bristle brush or long-handled push broom. Rinse thoroughly with water using a garden hose or pressure washer. Do not exceed 1,000 PSI when using a pressure washer. Rinse any residue from plants.

APPLYING THE NEW COAT

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

Back-rolling is suggested when spraying, working the finish smoothly and evenly to avoid lapping. Always apply a bit of product to a test area and allow to dry completely before coating an entire project to test for color and appearance.

The product should not be applied in the extreme heat of the day. Unfortunately, our deck faces south and we did the job in mid-summer. I discovered we had to work only in early morning because the product dried too quickly to prevent lap marks in

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

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

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

The additive must be thoroughly mixed into the coating.

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The additive provides a slip-resistant, but comfortable surface.

the hot sun. Two coats are recommended in order to fill the large, 1/4-in. cracks. And, in a couple of areas we had to apply a third coat. Because the material goes on fairly thick you must brush between the deck boards to cover the sides of the joints.

Coverage may vary, but in most cases it will be 100 square feet per gallon for application of 1 to 2 coats. When filling deep cracks or locking down splinters on old, extremely damaged wood surfaces, additional coats may be

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

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

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

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

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

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For pool owners who already have a "kool-deck" type finish around the pool, COOL! Is the first product engineered to resurface existing "kool-decks" and other similar toppings without sacrificing comfort or aesthetics. Refinishing saves thousands of dollars compared to the cost of a new "kool-deck."

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required. The product comes with a limited lifetime warranty.

The Duckback Anti-Skid addi-tive was added to the last coat, although we used it in two coats on the stair steps. The product, made of ground walnut hulls, is mixed one packet to each gallon of finish.

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

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

Create a beautiful water feature with some simple materials and a little ingenuity.

INSTALL A "DISAP WATER FOUNTAIN

By Rob Robillard

Statues, vases, disappearing fountains and rock fountains are becoming popular backyard focal points. Just go to any garden shop and you'll see dozens of options for Koi ponds, waterfalls and basin fountains.

Installing a disappearing or hidden-basin water fountain doesn't take up as much space as a waterfall or Koi pond but still gives you the sound of bubbling water and a great looking focal point for your landscape.

With a disappearing fountain, water is pumped through a fountain standpipe from a hidden reservoir buried in the ground. The water then overflows the basin rim and seems to disappear into the ground.

Installing a hidden or disappearing water fountain is a great DIY project and a way to add the soothing sound of moving water to a patio, pool or flower garden area.


PEARING”

INSTALL A "DISAPPEARING" WATER FOUNTAIN

An anniversary gift of a large glazed pot served as the inspiration for the water fountain. I chose my location based on the fountain's best setting in the pool area and its access to power.

INSPIRATION & LOCATION

Recently a friend gave my wife and me a beautiful blue glazed pot for our wedding anniversary. The blue glaze matched the tiles surrounding our pool. My wife has always wanted a water feature by the pool and asked me to make this glazed pot into a water fountain. I recall her saying, "That shouldn't take you too long, it seems pretty easy."

So my "honey-do list" on that weekend was to learn how to build a hidden water feature using the glazed pot. After some research I learned that a glazed pot is suitable for a fountain and has a life expectancy of 20+ years. I was happy with that.

I chose my location based first on the fountain's best setting in the pool area and second on its access to power. The spot I chose was at the end of the pool near a table, chairs and umbrella. This location was also suitable to run electrical conduit by following the stone wall.

DESIGNING THE FOUNTAIN

My vision was to have a 3/4-in. copper pipe protruding approximately one inch above the waterline at the glazed pot's rim. The water plume will cause the water in the pot to overflow and run over the pot's side, disappearing into river rock stones around the pot's base.

I needed a method to collect the overflow water and recirculate it back to the fountain. After visiting my garden center I learned that they sell plastic basins with a grill specifically designed for what I needed. The basin is called a "disappearing fountain basin."

I bought the basin and a pump suitable for recirculating the water. Next stop was the hardware store where I purchased some copper pipe, a quick-disconnect coupler, copper elbows, a few stainless steel clamps, a shutoff valve and some marine epoxy.

At this point my idea was a theory. I was still unsure how I was going to configure the fountain pipe and secure it to the pot.

I wanted to achieve several things with this project:

1. I wanted to install a shutoff valve to control the flow of water.

2. I wanted to be able to disconnect the pump from the bowl for winter storage.

3. I wanted to be able to hear the splash of the water as it overflows from the pot.

4. I wanted to be able to easily drain the basin to service the pump if needed.

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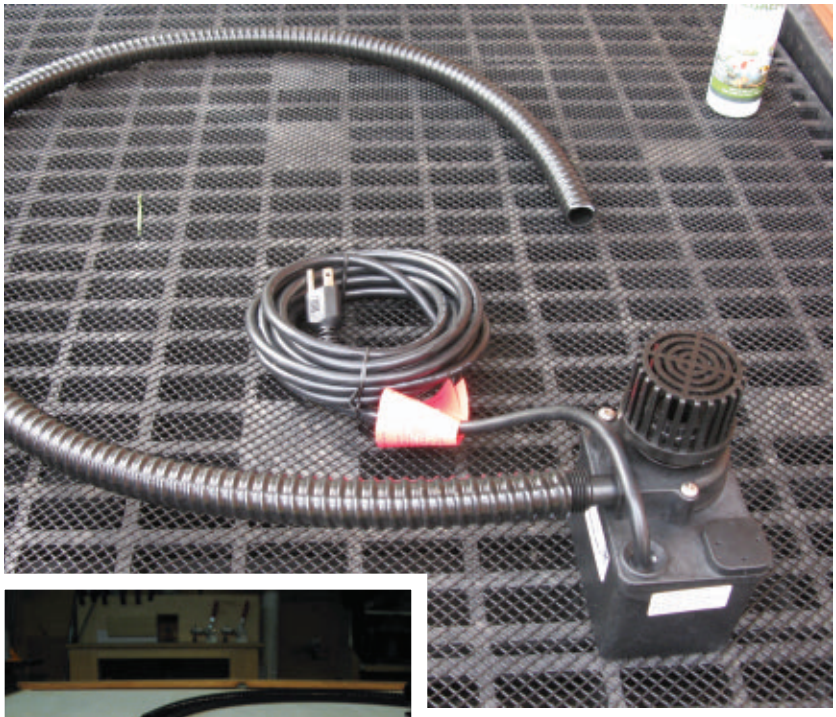
5. I wanted to control the pump with a timer.

The Hidden Reservoir Basin. I purchased my pump and basin from a local nursery. The basin is 36" x 36" x 14" deep and is made of reinforced plastic. The grating is reinforced PVC with a mesh netting covering the grate. The mesh netting helps keep debris and small stones from falling into the reservoir. Cost for the basin was $200.00.

The basin will house the reservoir water pump, some pipe and other connections and will be filled with water.

This basin is designed to be installed at ground level and covered with decorative stones. I planned on using Mexican beach pebbles, which are black and smooth.

The basin is covered with reinforced PVC grating and a mesh netting that would eventually be covered with pebbles. Shown here are the basic components.



A submersible pump is used to recirculate the water. I experimented with the fountain components before deciding on a system.

Water Pump. With help from the nursery's water fountain expert, I chose a Little Giant submersible pump which is designed for continuous circulation. This pump can handle up to 400 gallons and pumps 475 gallons per hour. The pump cost $100.00.

I plan on running this pump only 16 hours a day and controlling it with a timer.

MAKING THE FOUNTAIN CONNECTIONS

To keep my options open, I chose a pump powerful enough to push the water above the waterline. If it proved to be too powerful I would restrict the water flow with the shut-off valve I purchased. (It's important NOT to put anything that restricts the flow of the water ahead of the pump intake.)

I played around with different pipe configurations, swapping elbows and hoses until I came up with a design I liked. Remember, my plan was to make the pump easy to disconnect. I finally decided to

connect the shut-off valve with a pair of 3/4-by-3/4-in. nylon barb adapters and stainless steel clamps. I wrapped Teflon tape to the nylon threads before screwing them into the shut-off valve. The hose that came with the pump screws onto the pump and stays in place without connectors. This allows for quick-disconnect to clean or store the pump.

To make the transition from pump hose to main fountain, I chose a 90-degree PVC irrigation elbow insert (1-by-3/4-in.) to connect the copper pipe. The PVC elbow connects to a 3/4-in. copper threaded "X" male adapter fitting.

A short piece of 3/4-in. pipe separates the male adapter from my disconnect fitting. The disconnect fitting will allow me to drain the pot and remove it for winter storage.

Attached to the disconnect fitting is a long piece of 3/4-in. copper pipe, which makes up the main fountain pipe that will run up and through the basin.

INSTALLING THE HIDDEN RESERVOIR

The glazed pot will be installed on the basin. Installing this hidden reservoir required my digging a hole 3-by-3-ft. square and about 14 in. deep.

We lucked out and were able to get our hole in without having to move an irrigation pipe that we discovered in the bottom of the hole. When I saw this pipe, it gave me an idea that I might want to add an auto-refill to the basin so I wouldn't have to refill it once a week due to evaporation.

When excavating the reservoir basin hole, use care to make sure the bottom of the hole is flat and level in both directions. If not, the reservoir will be out of level and you will not be able fill it to capacity.

Once the hole was excavated and leveled we installed the reservoir, checked again for level, back-filled and tamped.

I chose to leave the reservoir basin approximately 1- to 2-in. higher than ground level to help keep mulch and dirt out of the water in the basin.

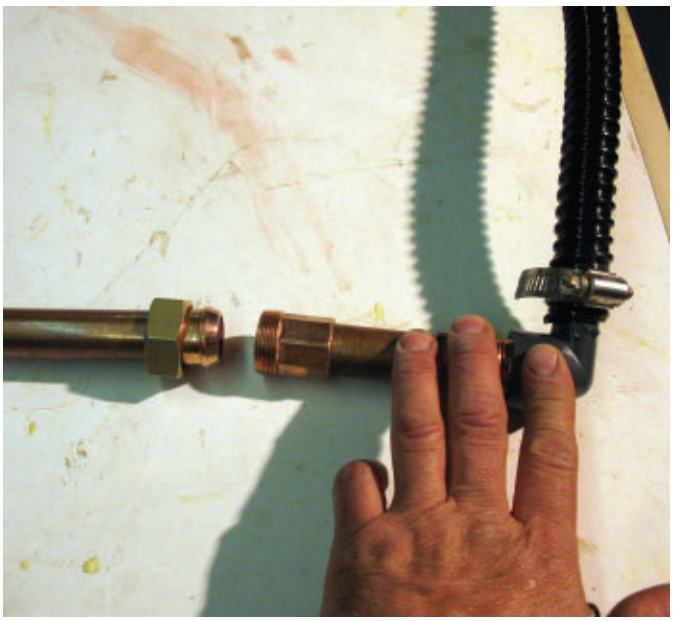
Because the ground slopes away, the reservoir sticks out of the ground higher in the rear. Since this area can't be seen from the patio, I decided not to slope the ground up to the basin.

INSTALLING THE COPPER FOUNTAIN HEAD

Part of my plan was to install a 3/4-in. copper "standpipe" up through the pot's bottom to deliver a plume of water at the top edge of the pot's rim. The basin will hold water and the standpipe will prevent water from flowing out of the pot when the pump is operating.

To do this I used a 3/4-in. masonry bit to drill a hole through the center of the pot. This hole will allow the standpipe to reach the pump in the hidden reservoir below. Drilling this hole was nerve-racking because I did not want to damage the pot. I knew the replacement value was approximately $200.00.

To make the transition from pump hose to main fountain, I used a 90-degree PVC irrigation elbow insert (1x3/4") to connect the copper pipe.



A short piece of 3/4" pipe separates the male adapter from my disconnect fitting. The disconnect fitting will allow me to drain the pot and remove it for winter storage.

INSTALL A "DISAPPEARING" WATER FOUNTAIN

While drilling I had to ream the hole a bit for the pipe to fit. I wanted a tight fit. Test all the components for a sure fit before final assembly.

I then placed the pot onto the reservoir basin and checked for level. The pot can be shimmed a bit if needed.

Next step was to drill a hole through the reservoir basin grate for the copper standpipe to reach the reservoir and pump. I used a 1-in. Forstner bit for this, but a spade bit would work too. I later ended up enlarging this hole so I could remove the pot, if necessary, without removing the standpipe and quick-disconnect fitting.

The existing glazed pot came with two drainage holes that I filled in with Marine epoxy.

Cut an Access Hole. Using a reciprocating saw and a metal cutting blade, I cut a 1-by-2-ft. access panel into one corner of the grating. This panel allowed me to access the pump and shut-off valve to control the water flow, as well as the copper standpipe in order to disconnect for winter storage. This panel provides quick access without having to remove the glazed pot.

Soldering the Copper Standpipe Connections. After dry-fitting everything, I soldered all of the copper pipe fittings. This job required basic soldering tools and materials—copper solder, flux, pipe tool and a propane torch.

Test the Components before Installing. Testing the pump and fittings is important to work out any problems or issues. When I tested my fountain assembly, the flow of water from the pump was strong. I was glad I installed the ball valve to control the flow. When the standpipe was held vertical, the pump pushed out a 5- to 6-in. plume of water.

Installing the basin required digging a hole 3x3' square and about 14" deep. Tamp the bottom of the hole, place the basin and check for level. Shim the hole as necessary and back-fill around the basin.

FINAL ASSEMBLY

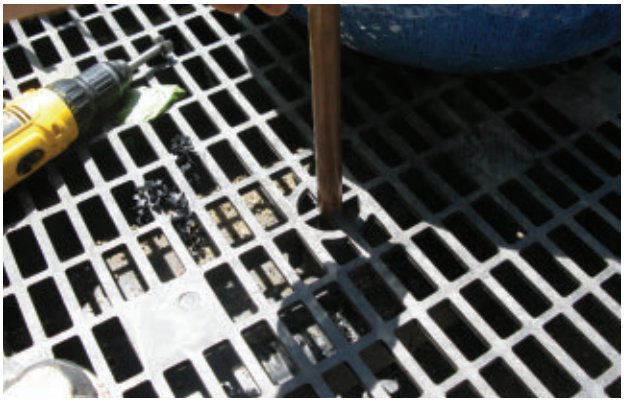
The glazed pot was heavy when empty, and adding water to it at approximately 8 lbs. per gallon increases this weight dramatically, so I added cinder blocks directly under the grate where the pot sits. The blocks will take the weight and stress off the PVC grate and transfer it to the ground.

I then routed my copper fountain standoff pipe through the grate and attached it to my pump and hose assembly. I lowered the basin pot over the standoff pipe and used my level to hold it plumb. I then used marine epoxy to secure the pipe to the pot so it

I used a masonry bit to drill the hole in the pot for the fountain standpipe. I had to ream the hole for a tight fit.

Check the pot for level and looks.

Next, I drilled a hole in the grate for the stand-pipe. Test-fit the standpipe.



I used marine epoxy to seal the other drain holes (already in the pot). I later used the same epoxy to seal the standpipe into the bottom of the pot. I used a recip saw to cut an access panel into the grating to allow access to the pump and shutoff valve.

INSTALL A "DISAPPEARING" WATER FOUNTAIN

After testing for fit, I soldered together all the copper joints. Once all the joints were connected, I tested the performance of the fountain. I added cinder blocks directly under the grate where the pot sits. The blocks will take the weight and stress off the PVC grate and transfer it to the ground. Place the pot in its final position over the standpipe, shimming as necessary. Seal the joint between the pipe and pot with marine epoxy.

I finished the top of the PVC grate with 1 to 2″ Mexican pebble rock. The rocks will hide the PVC grate.

This electrical supply line for the pump was installed in PVC pipe in an 18" deep trench. from the house. The electrical line plugged into an outdoor GFI rated outlet, which I hid behind a rock.

The fountain is activated with an outdoor timer that plugs into the GFI outlet. The electrical line comes out of the ground and goes into the rear of the reservoir basin, along with an irrigation pipe I added to refill the fountain.

could hold water. The copper standpipe protrudes 2-in. above the basin rim.

Once the epoxy dried I checked again for level, shimmed as necessary, and then filled the basin with water. Test again.

I covered the top of the basin with 1- to 2-in. Mexican pebble rock to hide the PVC basin grate.

When activated, the pump pushed a 6-in. plume and the basin held water. As the pot overflows, the water follows the contour of the basin and drains back into the hidden reservoir where it "disappears" and is recycled by the pump. Finally, I added more rocks to hide the square edge of the reservoir and to overlap to the mulch. **EHT**

Editor's Note: *Editor's Note: Robert Robillard is editor of the blog, A Concord Carpenter (www.AConcordCarpenter.com), and principal of a carpentry and renovation business located in Concord, Massachusetts (www.RobertRobillardCarpentry.com). Rob also hosts the "Concord Carpenter" Cable TV Show, offering the DIY audience in Boston's Metro West region expert advice on home repairs and maintenance.*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MAKING THE MOST OF A BACKYARD

How to Grow Vegetables in the French Intensive Gardening Style

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

America's doctrine of westward expansion, known as Manifest Destiny, is still ingrained in our subconscious mind today. Our country has a large and ever-growing population, but we are still not as densely populated as Europe. America is an enormous country with some parts that are still uninhabited, albeit in harsh climatic zones. This lower density in population has allowed us to spread out and take up more space.

One area in which we do this is in farming and, to a smaller extent, home gardening. The traditional American garden usually consists of cultivated land in someone's back yard with the crops laid out in long rows mimicking the design of commercial farms. Europeans, on the other hand, have much less land mass to work with and have had to adopt gardening techniques that are different from ours.

Many Europeans garden using a system commonly referred to as the French Intensive Gardening method, which originated in 1890 on a small plot of land on the outskirts of Paris, France. This technique made its way to America around 1966, thanks to Alan Chadwick who demonstrated this technique on an inhospitable hillside at the University of California's Santa Cruz campus. John Jeavons, of Ecology Action of the Mid-Peninsula at Stanford, California, built upon Chadwick's early work, and later published a book on the subject, *How to Grow More Vegetables Than You Ever Thought Possible on Less Land Than You Can Imagine*.

GARDEN

The French Intensive Method involves growing densely spaced plants in loose, well-drained soil that has been double-dug. Crop rotation and companion planting are also vital components of this gardening technique. The dense plant spacing helps to reduce the encroachment of weeds, and also helps to keep the ground shaded from the effects of the sun so it won't dry out as fast, in addition to providing a high yield of vegetables. The loose soil permits water to easily drain through it and eliminates much of the resistance that would otherwise be encountered by the plant's small feeder roots as they spread through the ground.

This method of planting reduces the amount of water that is used and favors light watering everyday with only one good soaking each week. Crop rotation, inter-cropping and companion planting all help to eliminate the need for environmentally dangerous pesticides.

Organic garden beds are usually laid out so they are no more than five feet from front to back. The side-to-side width can be any length depending upon how much room the gardener has to work with. The purpose behind the 5-ft. maximum depth is so a person can reach the center of the garden bed from either side of the bed. This eliminates someone having to step in the soil or walk on it. Every time that someone puts a foot on the soil they are compacting the dirt, thereby reversing the benefits of the double-digging process. Most raised beds range in size from 4-by-8 to 5-by-20 feet. If a large piece of ground is to be cultivated in this method, imagine two raised beds that are separated by a narrow walkway laid down the middle of the space for access to the inside edge of each bed.

French Intensive Gardening involves growing plants closer together than is traditionally done.

If a walkway is one of the features to be incorporated into a raised bed garden, consider covering the foot path with pea gravel or a similar substitute. The addition of gravel will delineate the border between the walkway and the growing areas, and also provide a neat and tidy appearance. Two of the aesthetic hallmarks of gardening with raised beds are the sense of order that they create and clean architectural lines.

Use old newspapers as a ground cover to keep weeds from growing up through the gravel. Commercial covers, similar to plastic window screens, are available on the market, however, these have two drawbacks. The first is that they cost money and the second is they are not environmentally friendly because

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Companion planting involves planting crops close together. Notice the carrots planted under the broccoli plants. Short plants can be grown under taller plants in many instances.

they are made of plastic. Compare these problems with old newspapers, which can be collected for free from family, friends or the office break room, and they are also ecologically sound. Newspapers are biodegradable, will block out sunlight to keep weeds from growing, and will allow rain water to soak through them. The trick to using newspapers in this manner is to put them down in a thick layer. Excluding the monster Sunday and Wednesday editions, I like to use the entire newspaper from a normal day, with the exception of the sales flyers. I simply open it at the bi-fold on the front page and then lay it down, making sure it overlaps with any other pieces that it touches along the edges.

Once the garden bed location has been laid out in a place that will receive at least six to eight hours of direct sunlight a day, the first step to growing healthy organically grown plants is to begin with soil preparation: double-digging the ground. Gardeners who employ this method use the raised beds that are naturally created during the double-digging process. Begin by sectioning off your planned garden bed into 12-in. wide strips that run along the shortest sides of the bed. In other words, on a 4-by-8-ft. bed these strips will be 4 feet long and not 8 feet long. Dig the first 12-in. wide strip out of the ground to a depth of one foot and set this soil aside. Then dig down another 12 inches to loosen the soil.

Proceed to the next 12-in. wide strip and dig it out, but instead of setting it aside, place it in the trench made by the first digging. When you put it in the first trench it should be placed upside-down so the topsoil is on the bottom. After the top 12 inches of soil has

Organic gardens are often cultivated in raised beds. The soil of the garden shown is retained by a mortared block wall.

The garden beds are usually laid out so they are no more than 5' from front to back, so a person can reach the center of the garden from either side of the bed.

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The cool season crops shown on the left and were planted in February, while the right side of the garden bed was reserved for the spring planting that was done in mid-April.

Double dig the ground to loosen the soil. Plants do not grow as well in hard or compacted dirt. Loose, well-drained soil is a plant's friend.

been removed from the second trench, dig down another foot without removing the soil. This will loosen the second 12 inches of soil that will remain in the ground.

Follow this procedure with the third and subsequent trench, repeating the same procedure each time. Once you have reached the end of the garden bed, use the soil that you removed from the first trench to fill in the very last trench, remembering to put it back into the ground upside-down.

Double digging loosens the soil, causing it to mound up as it is replaced. This produces the raised-bed effect. Most gardeners employing this method maintain their raised beds in the shape of a slight mound. A gentle slope on all sides is preferred to having a perfectly flat planting bed.

Raised beds are usually surrounded with a wooden or cement frame to help hold the soil in place. According to the Alabama Cooperative Extension System, in publication ANR-1345 - Raised Bed Gardening, research has shown that the use of pressure-treated lumber is safe to use when constructing raised garden beds.

Depending upon the makeup of the soil, it may be necessary to add some type of natural fertilizer to the raised bed at this point. Homemade compost is one of the best choices, along with humus, cow manure and seaweed. Sometimes lime might have to be added to raise the pH level of the soil if it is too low resulting in acidic soil. This is especially true in humid climates. Rainfall will gradually leach out the basic minerals that are normally found in your dirt. This leaching process is exasperated by the use of fertilizers and organic matter from manure and compost material. Most local extension offices will provide soil testing to gardeners upon request and many stores sell soil-testing kits.

ROTATING VEGETABLE FAMILIES

Crop rotation is important for a healthy soil composition. Growing the same family of plant in the same location two years in a row can cause disease, infection and in some cases even death of the plant. It is essential to plant each family in a different place each year. The following chart categorizes common vegetables by family.

ONION FAMILY
Onion, garlic, leek, shallot, chive

CARROT FAMILY
Carrot, parsnip, parsley, celery

SUNFLOWER FAMILY
Lettuce, endive, salsify, Jerusalem Artichoke

MUSTARD FAMILY
Broccoli, cauliflower, kale, collards, mustard green, radish

GOOSEFOOT FAMILY
Beet, Swiss chard, spinach

BINDWEED FAMILY
Sweet potato

GOURD FAMILY
Cucumber, squash, pumpkin, gourd, watermelon

PEA FAMILY
English pea, snap bean, lima bean, field pea, soybean

MALLOW FAMILY
Okra

GRASS FAMILY
Sweet Corn

NIGHTSHADE FAMILY
Tomato, pepper, eggplant, Irish potato, husk tomato

Just as life should be a balance, so should your garden soil be in balance also. Too low of a pH level is bad for the soil, but so is too high of a phosphorus level which is often caused by a prolonged use of large amounts of manures. Annual soil testing is recommended.

Once the garden bed is prepared it is time to consider what to plant and how to lay out the garden. The French Intensive Method allows for the planting of crops so that the leaves of the mature plants will just touch one another. Having the knowledge of a mature plant's diameter is very helpful at this point. Seed packs and the labels included on seedlings provide a lot of good information about plant spacing, however, remember that this spacing information is for traditional farming techniques. So, as a good rule of thumb, for every two plants normally occupying a particular space, you can usually plant three and sometimes four plants without overcrowding them.

Companion planting involves the planting of crops that are beneficial to one another. For example, carrots should be intercropped with onions which create a natural insect repellent. Planting a few Marigolds, catnip or Golden Rod plants as a border can also help to deter many varieties of unwanted insects. Allow me to add here, that some insects are beneficial to a garden and should be encouraged. For example, lady bugs will eat the pesky aphid by the thousands.

However, companion planting is not just limited to biological benefits. Some vegetables are long-season crops and some are known as short-season. The long-season plants require most of the growing season to mature before

To create a garden walkway, lay down old newspapers in a thick layer to prevent the growth of weeds. Old newspapers are free and are environmentally friendly.

Hand-shovel pea gravel into the paver-lined walkway to keep from spilling it into the growing areas of the garden.

The finished walkway provides access to plants while preventing compaction of the soil in the growing areas. Simple brick pavers are used to retain the pea gravel.

Homemade compost is one of the best choices of fertilizer. Shown here is our current year's compost pile. Used food scraps are an integral part of a healthy compost pile.

they can be harvested. Short-season plants will usually come to fruition about halfway through the growing season, often allowing a second planting of that same variety. One technique is to plant short-season plans with long-season ones, working on the premise that the short-season plant will be harvested before the long-season plant has reached adulthood and its full size. Also, lettuce can be planted under the stalks of corn or broccoli plants. Lettuce is a cool-season crop that needs to be shaded in warmer weather. The tall corn stalks will provide this shade and help to extend the growing time of the lettuce plants.

Crop rotation is important to maintaining a healthy soil composition. The same variety, or even same family, of plant when it is grown in the same location as the previous year can cause disease, infection and in some cases even death of the plant. Plants of the same family should not be planted in the same place or in the same soil two years in a row. It is essential to plant each family of vegetable in a different place each year.

The concept of organic gardening arises from the belief that it is better to work with nature than it is to fight against it. The French Intensive Method is man's attempt to work in harmony with nature rather than make nature conform to our will. The end results of organic gardening are healthy and vibrant plants that are free from the dangers of chemical pesticides while producing higher than normal yields in much less space.

So, take the plunge this year and make a single raised-bed garden in your backyard. It's a wonderful project for the entire family to participate, and it is also very educational. Children are always amazed when the plants start to produce their first harvest. **EHT**

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Clean Rust Off Concrete

By Rob Robillard

This article will help you save time, labor and money by showing you the best way to clean rust off concrete or bluestone. Many homes have concrete and bluestone walkways, steps and patios. The problem is that rust stains can occur from patio furniture, umbrella stands, fire pits or toys. These stains can be very difficult to remove.

Following are the necessary functions needed to easily remove a rust stain from your concrete using muriatic acid.

SAFETY INFORMATION

As a safety precaution, do-it-yourselfer's should avoid muriatic acid where possible. Only use muriatic acid after exhausting other cleaning methods like TSP (tri-sodium phosphate), or less caustic concrete stain removers. In other words, muriatic acid is not the first choice for masonry cleaning but the last resort.

Muriatic acid is a highly reactive liquid acid, and one of the most dangerous chemicals you can buy for home use. It is an industrial-strength solution of hydrogen chloride gas dissolved in water, also known as hydrochloric acid. With the exception of some plastics, muriatic acid can damage most anything it touches, including clothing, metal and skin. It emits a suffocating odor that can quickly burn the lining of the nose, throat and even the lungs.

Typical home applications include heavy-duty masonry cleaning, preparation of masonry for painting or sealing, removal of efflorescence or mineral deposits and pH reduction in swimming pools. If you consider using muriatic acid, please heed all safety recommendations both here and on the product's label.

Contact with the eyes, for example, can cause irreversible damage and permanent blindness. Contact with the skin can cause severe burns. Dress appropriately; wear safety glasses, acid-resistant gloves, long sleeves and pants, and use a NIOSH-approved respirator equipped with the appropriate acid-grade filter.

The metal stand of a patio umbrella created unsightly stains on the patio surface.

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Muriatic acid should be a measure of last resort. Use it only after you have already tried less caustic cleaning agents.

Keep baking soda or lime on hand to neutralize the acid.

Additionally, have a neutralizing agent and a reliable, steady source of water available. Baking soda or garden lime can quickly neutralize the acid if spilled. Water should be freely available in case you accidentally get acid on your skin.

Since muriatic acid can damage or kill foliage, cover or wet all nearby foliage with water before application of the acid.

Work in an area with adequate ventilation. Use a fan to bring fresh air to the work area if necessary. Muriatic acid is nonflammable, but the vapors are highly corrosive and irritating. Using muriatic acid indoors is not recommended. The corrosive vapors can begin chemical reactions in metals, leading to long-term permanent damage.

CLEANUP & DISPOSAL

In some cases you may need to clean up an accidental spill. Spreading a generous quantity of baking soda or lime (the powdered or crushed type used for lawn or gardens) and adding water will cause a distinctive "fizz" as the chemicals react with the acid, releasing carbon dioxide and producing harmless salt and water. Garden lime is less expensive than baking soda and is sold in larger bags.

Muriatic acid should never be poured down a sink or storm drain, or flushed down a toilet. Doing so can cause extreme damage to pipes, dissolve solder and damage the biological balance of your septic system. Throwing away even a closed container of muriatic acid with the trash can be dangerous for trash handlers, their trucks and possibly cause unexpected chemical reactions in landfills. Neutralize your container prior to discarding. (Call your local recycling center for more information.)

HOW TO USE MURIATIC ACID

Muriatic acid should be diluted to at least 1 part acid to 10 parts water. For small areas, a quart container of acid is usually sufficient. Mix the acid and water in a plastic container. Always pour acid into water, never water into acid. Mixing the two causes a reaction that gives off heat. This reaction is much more sudden and violent when water is poured into the acid.

The diluted acid can be applied with a long-handled masonry

Always pour acid into water—never water into acid.

Apply the acid with a sprayer or long-handled masonry brush, scrubbing the rust stain.

Let the acid sit for no more than a few minutes, less if you can see the rust lifting.

Neutralize the acid with baking soda or lime and rinse.

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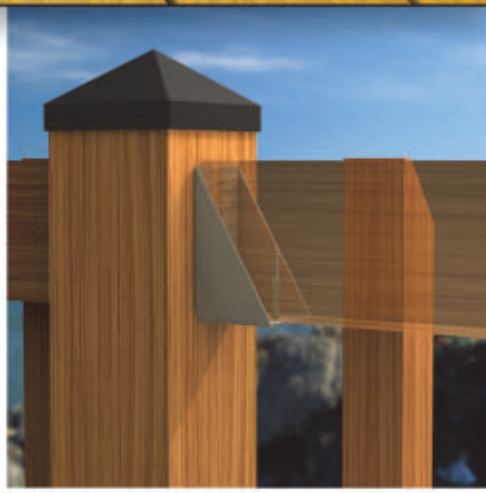
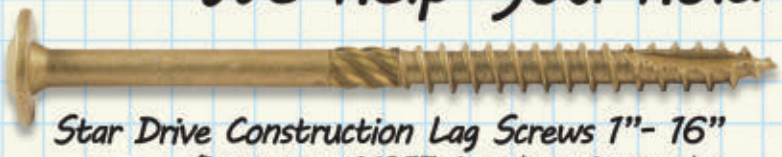


We help you hold it all together!



Star Drive Construction Lag Screws 1"- 16"

ICC ES

Proprietary AC257 Compliant Coating has shown over 1,200 hours of corrosion resistance in treated lumber and salt spray tests! Can be used with tannic woods like Cedar and Redwood. ICC ESR-3654

1-3/4" C-Deck Star Drive Fascia Screws

AC257 Compliant screws for fascia, fencing and railing in 5 colors: red, tan, gray, brown and white. Extra sharp, quick starting point. Deep, wide, sharp threads for maximum holding power!

2-3/4" C-Deck Star Drive Deck Screws

Available in AC257 Compliant Coated and 305 Stainless Steel. For use with wood, composite, PVC and other plastic materials. Available in 23 colors that will match most common deck colors on the market and has shown over 1000 hours of corrosion resistance in salt spray tests! Our C-deck is specially designed to eliminate mushrooming and blemishes that can occur in composite materials.

Dealers Welcome!

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For stubborn stains, reapply the acid to the stain and repeat the cleaning process.

scrub brush or sprayer, depending on the circumstances. If you're going to spray, it's best to buy a cheap sprayer and throw it away when finished. If using a sprayer to apply the acid, take precautions to cover nearby objects and vegetation with plastic. Do not use a sprayer on a windy day.

STEPS TO CLEANING MASONRY

Begin by wetting the concrete stain and all of the surrounding area.

Mix the acid with water. Although, one part acid to 10 parts water (by volume) is typical, dilutions as light as one part acid to 16 parts water also work well. (Note: A 1/16 ratio is 1 cup acid to 1 gallon of water.) Read the label on your product and follow the recommendations.

Brush or spray the acid onto the affected area. Do not use a metal sprayer. A plastic sprayer will work for a while, but will eventually be destroyed by the acid. For large jobs, have a few extras nearby and dispose of the used ones when finished.

Let the acid sit for no more than a few minutes, and even less if you can see the rust lifting.

Scrub off any remaining residue with a stiff brush while rinsing thoroughly with water. Long-handled brushes are ideal for this job.

Neutralize the acid with lime or baking soda and rinse thoroughly. Use a garden hose with a high-pressure nozzle.

For stubborn stains, Rinse the area again, wetting the stain thoroughly. Apply a small amount of muriatic acid directly to the stain and repeat the cleaning process.

You need to be aware that this process may leave your concrete or blue stone looking cleaner than the surrounding area. To minimize this difference in appearance, work only on the stain and rinse quickly, trying to keep the acid mixture on the surface of the stain. The longer it is left on the concrete, the more it will clean, and possibly etch the surface creating a noticeable contrast.

You can also use lime to neutralize your leftover muriatic acid. Get a large bucket. I prefer the 5-gallon size since the chance of dangerous spattering is minimized in a large bucket. Put three or four cups of lime in the bottom of a gallon of water. Give it a stir. Slowly add the acid to the bucket, keeping your face away while pouring (and wearing your respirator). Stir, adding more acid and more lime until all the chemical "fizzing" has stopped.

The fully neutralized acid can then be safely disposed down a sink or storm drain without fear of damage to your septic system or the environment.

Note: Consider recycling your leftover muriatic acid. If you know someone who owns a pool you can give them the leftover acid. It's a great pH reducer. **EHT**

Rinse the area thoroughly with a high-pressure garden hose.

To minimize the difference in concrete appearance after cleaning, work only on the stain and rinse quickly. The longer the acid is left on the concrete, the more it will clean and possibly etch the surface.

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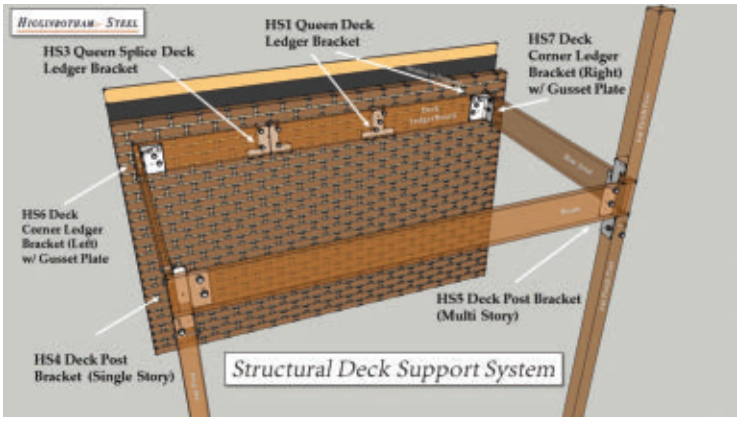
HOT PRODUCTS

HIGGINBOTHAM STEEL'S STRUCTURAL DECK BRACKET SUPPORT SYSTEM

The HS Deck Ledger Brackets (Products #HS1-HS3) are structurally designed to securely attach decks to building frames. Exceeding code requirements, this unique system strengthens and reinforces wood deck and porch framing components. The brackets connect the deck structure to the adjacent building's floor structure. It reinforces 4x4 handrail post connections, and is offered for multistory applications as well. Higginbotham Steel's HS brackets can also be applied for Energy Foam/Siding ledger-board attachment applications. Depending on the size and design of the deck, 2x4 knee bracing may be eliminated. American Made (designed, engineered and fabricated in USA), the Steel Bracket Components are laser cut from 12 Gauge (approx. 0.1084-in.) steel plate and are available in multiple coatings. Additionally, the HS Deck Post Brackets (single or multi story, product #HS4-HS5) connect the 6x6 deck posts to deck beams (2x10 or 2x12) and outside rim joists. Plus, the HS Inside Corner Brackets (4-hole and 5-hole, product #HS6-HS7) support the outside rim joist and connect it to the deck ledger-board as well as provide reinforcement for the 4x4 handrail post bolts. Visit www.higginbothamsteel.com



INTRIGUE TABLE TOP OUTDOOR LANTERN

The Outdoor GreatRoom Company introduces the Intrigue Table Top Outdoor Lantern, designed to fit on virtually any outdoor dining or pub table with an umbrella hole between 1.75 and 4 inches. The unit is easy and quick to install and runs on any one-pound LP tank. Make your neighbors jealous this summer with the Intrigue Table Top Outdoor Lantern. Visit www.outdoor-rooms.com.

DECKWISE HIDDEN DECK FASTENERS

The DeckWise Hidden Deck Fastener System features a patented, injection-molded clip with a stainless steel insert that is edge-mounted into the side of pre-grooved decking. The Ipe Clip EXTREME series is available in three gap sizes—Extreme 3/32", Extreme4 5/32" and Extreme KD 1/4"—and can be used with exotic hardwood, thermally modified softwood or composite decking timber. Visit deckwise.com.

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HOT PRODUCTS

WISERAIL STAINLESS STEEL DECK CABLE RAILING SYSTEM

Looking for a deck railing system that is elegant, won't obstruct your view, and easy to install? The WiseRail Stainless Steel Deck Cable Railing System from DeckWise is the perfect finishing touch for your deck. WiseRail systems are sold in pre-packaged ready-to-install kits ranging from 5 ft. in length to 50 ft. Each of four series of kits will install multiple cable runs according to your deck's needs; from straight runs to stairs and pitches. Visit deckwise.com.

DECKWISE HARDWOOD WRENCH

The DeckWise Hardwood Wrench Board Straightening Tool will bend even the most warped deck board imaginable. Our wrench applies 1,100 lbs. of pushing force with just one hand and a swing of the handle. Designed to be used from either the left-hand or right-hand direction, it has 10 different configurations for multiple work spaces. Contractors and DIY homeowners can straighten out the most difficult crooked hardwood, softwood, thermal wood, and composite deck boards from virtually any position. Visit deckwise.com.

DEK TEK TILE

DekTek Tile is a new concrete decking material that provides a perfect way to add class to outdoor living areas: porches, patios, concrete-slabs, balconies, outdoor kitchens, three-season porches, fire pits, concrete steps and ground pavers. No expensive substrates or heavy-duty framing are needed. Standard framing is usually sufficient, with only minor modifications. DekTek Tile is designed to be the same 1-in. thickness as traditional wood/composite decking to make beautiful accent decks, edge trims, or for mixing and matching. It's building-code approved and structurally engineered to hold over 1,000 pounds per tile. Homeowners will also have more time to enjoy their deck rather than maintaining it, which means no more mold, rotting wood, chipping and peeling, or the upkeep of cleaning, scrubbing and staining the deck. And unlike wood and composite decking, DekTek keeps its beautiful look without fading. Visit dektektile.com.

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HOT PRODUCTS

SCREENEX WIND COMMANDER RETRACTABLE SCREEN

Now you can screen in areas other where retractable screens can't with the ScreenEx Wind Commander. Built for locations with strong winds like beachfront homes where winds can blow hard off the water, these retractable screens stay in their tracks and withstand up to 70 mph winds. They are custom made to your dimensions and cover extra-wide openings from 6 feet to 19 feet wide and 16 feet tall. Wind Commander Retractable Screens are perfect for patios, gazebos, porches and garages—with no seams or cross-bars in mesh up to 8-ft. high and 9-ft. wide. Pull-down operation allows wheelchair access with no bottom tracks to trip over. It comes with crank or motorized operation, and can be mounted inside or outside the building. The screen retracts completely into the top cassette when not in use. The ScreenEx Wind Commander is made with extruded and roll-formed aluminum components and stainless steel fasteners to ensure highest quality and durability. The cassette and tracks are available in white, almond and brown. Visit screenex.com.

SPEED SQUARE HOLDER

Anyone who has ever done carpentry or framing knows how frustrating it is to constantly hang on to your Speed Square due to the triangular shape. It never fits in your belt cleanly. Even worse, it will fall out of your belt or you'll drop it when at the top of a tall ladder or on a roof—but not with the Speed Square Holder. It works like a belt-mounted tool holster, and with one hand you can pull it out and re-insert it easily. The Speed Square Holder is so light you'll never know you added anything to your tool belt. With the sturdy clips you can also use it multiple places: tool belt, pants, on a cargo pocket, etc. It works for left- or right-hand use and perfectly holds a Swanson 7-in. Speed Square and even carpenter's pencils, too. Visit speedsquareholder.com

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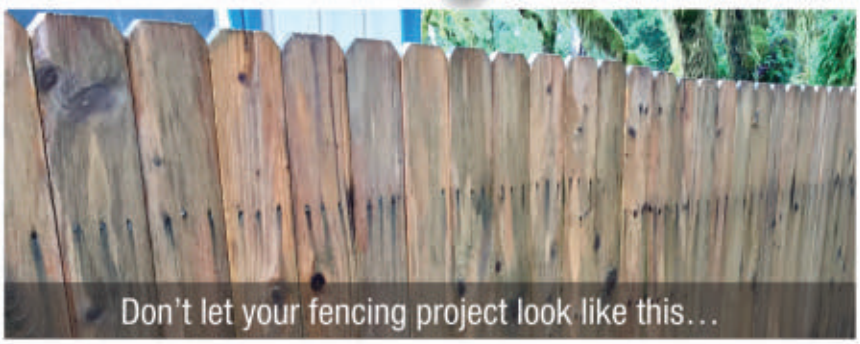

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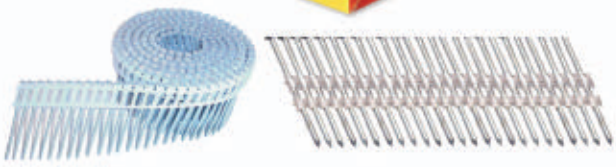

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