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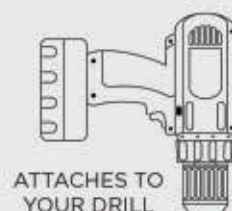
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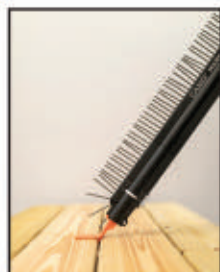


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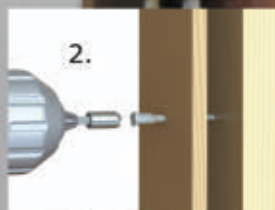
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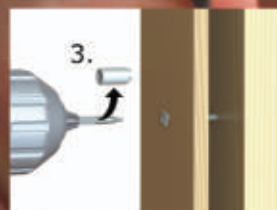
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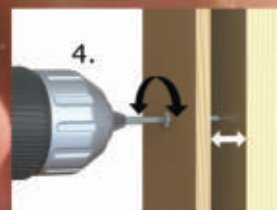
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Ever considered building a home from mushrooms? Fungal mycelium is the vegetative tissue of fungus, the flower of which most people recognize as a mushroom. It can be found in abundance on the planet, and in the world of construction, mycelium technology has a lot to offer with the production of bricks that are essentially made from mushrooms. Fungal mycelium is 100-percent biodegradable. As an insulating material, the mycelium tissue can trap more heat than fiberglass insulation, it is fireproof, nontoxic, partly mold- and water-resistant, and stronger pound for pound than concrete. When dried, it can become very lightweight (easy to transport), and the tissue grows rapidly, allowing fast, easy, low-cost material production. Furthermore, when placing two alive, individual mycelium bricks together, the mycelium will rapidly spread between them and bond the material. The technology does have its drawbacks, but the ongoing research looks promising.

In the quest for sustainable building materials, testing is also being conducted on wool and cardboard insulation as alternative natural solutions that could replace conventional materials, while being equally efficient and cost competitive.

Robots are making their mark on home construction as well. In late 2018, a brick-laying robot from Australian firm Fastbrick Robotics proved capable of building the brick shell of a house in a matter of days. The nearly 2,000-sq-ft., three bedroom, two bathroom structure was completed in under three days by the Hadrian X robot. After completion, Fastbrick reported the structure met verified building standards set by a civil and structural engineering consultancy group. The world now has a fully automated, end-to-end bricklaying solution that the robotics group describes as “a quantum leap for the construction industry.”

There’s more... Recently I was forwarded an article titled, “The Case for Making Cities out of Wood.” According to the story, a University of Maryland mechanical engineer has created wood that’s as “strong as steel, but six times lighter.” Manufacturing is a two-step process in which natural wood is boiled in a mixture of sodium hydroxide and sodium sulfite, to remove some of the lignin and hemicellulose, then the wood is put in a hot press to collapse the cell walls and complete the densification with “highly aligned cellulose nanofibres.” The engineers claim the result is a “low-cost, high-performance, lightweight alternative” to most structural metals and alloys.

It’s impossible to know what the future holds for construction, but with all these burgeoning technologies, it’s safe to say the buildings of tomorrow might not be built the way they are today.



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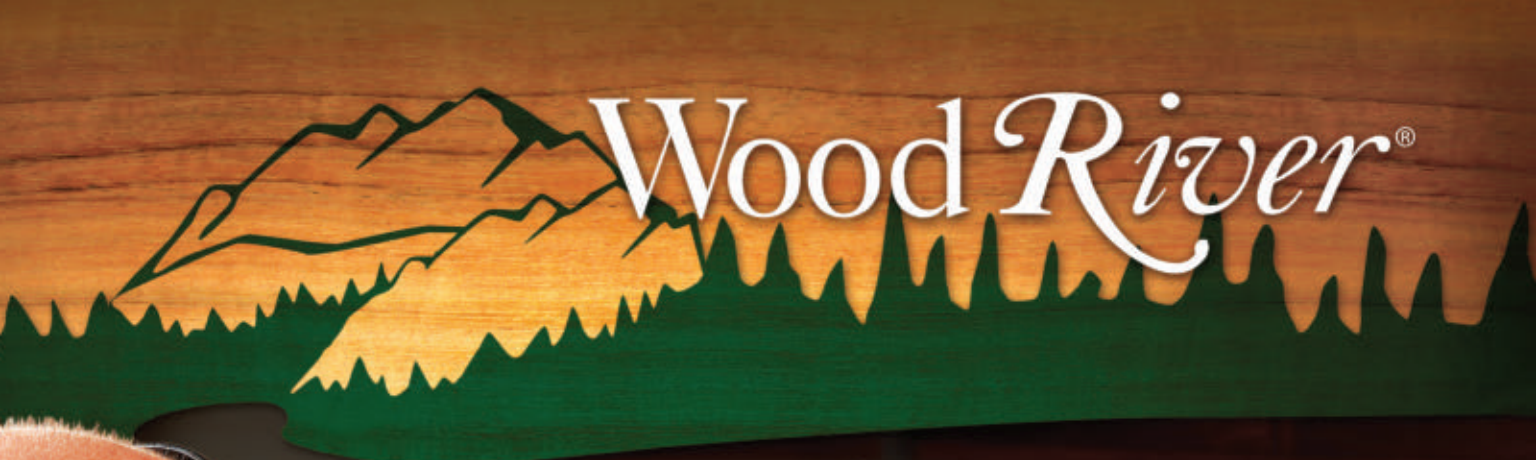
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Q. How can I unclog the main drain line that runs through our yard without the expense of hiring a plumber?
A. Roots seems to have grown into the sewer line, and smelly brown water is backing up to the house.

A. You might be able to clear the obstruction using an electrical plumbing snake. Available at rental outlets and the Home Depot, these machines are also called a Drain Pipe Auger or a Power Drain Cleaner. The

machine has a coil of steel rope with a cutter-head on the end to drill out the blockage. The basic idea is to feed the rope manually into the drain through the clean-out plug until it hits resistance, and then activate the machine with a foot pedal to spin the auger. It might take multiple attempts to grind through the blockage, and you can retrieve the auger to measure its length and gauge your progress. Repeat the process until the water drains. In order to grind through the roots, use a larger 5/8-in. auger size rather than a 1/2-in. or smaller, which will be more likely to break against the roots.

Using a plumbing snake can get messy, so wear some rubber gloves that stretch up to your elbows, and beware of the high tension on the cable. When the auger tip hits resistance that prevents it from rotating, but the machine is still spinning, it can place a great amount of tension on the auger rope, causing it to pull out the machine and coil up violently. If you're fingers are on the metal rope when it coils, it can crush them. Wash off the machine after you've finished the job, or else the rental outlet is likely to slap you with a "cleanup fee."

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Q: What is the best tool to cut sheet metal?

A: Sharp tin snips or "aviation snips" with compound leverage can usually cut sheet metal up to 18 gauge. For detailed cuts, you can use a Dremel or similar rotary tool. A metal nibbler can often cut materials up to 1/8-in. thick, depending on materials, and these tools are now sold as attachments that fit onto the head of an electric drill. For straight cuts, you can use a metal-cutting circular saw blade with a high teeth-per-inch count. And if you plan on doing a lot of sheet-metal cutting in the future, you might consider purchasing some electric metal shears.

Q: Is there any way to reduce odor from a roof's sewer vent?

A: A house's plumbing vent is directly tied to the sewer/septic system, but normally gasses that rise from vents are carried away by the wind. Occasionally, the wind can push those gasses down toward your yard. To stop this from happening, consider installing a sewer/septic vent pipe filter, which is designed to eliminate the foul "rotten egg" smell originating from rooftop plumbing vent pipes. The filters usually fit onto vent pipes without tools or glue and are charged with Activated Carbon which captures the Hydrogen Sulfide (smelly gas) molecule. Note that pipe filters will only eliminate odors that originate at plumbing vent pipes; indoor odors are caused by dry drain traps and toilet wax rings that have failed. **EHT**

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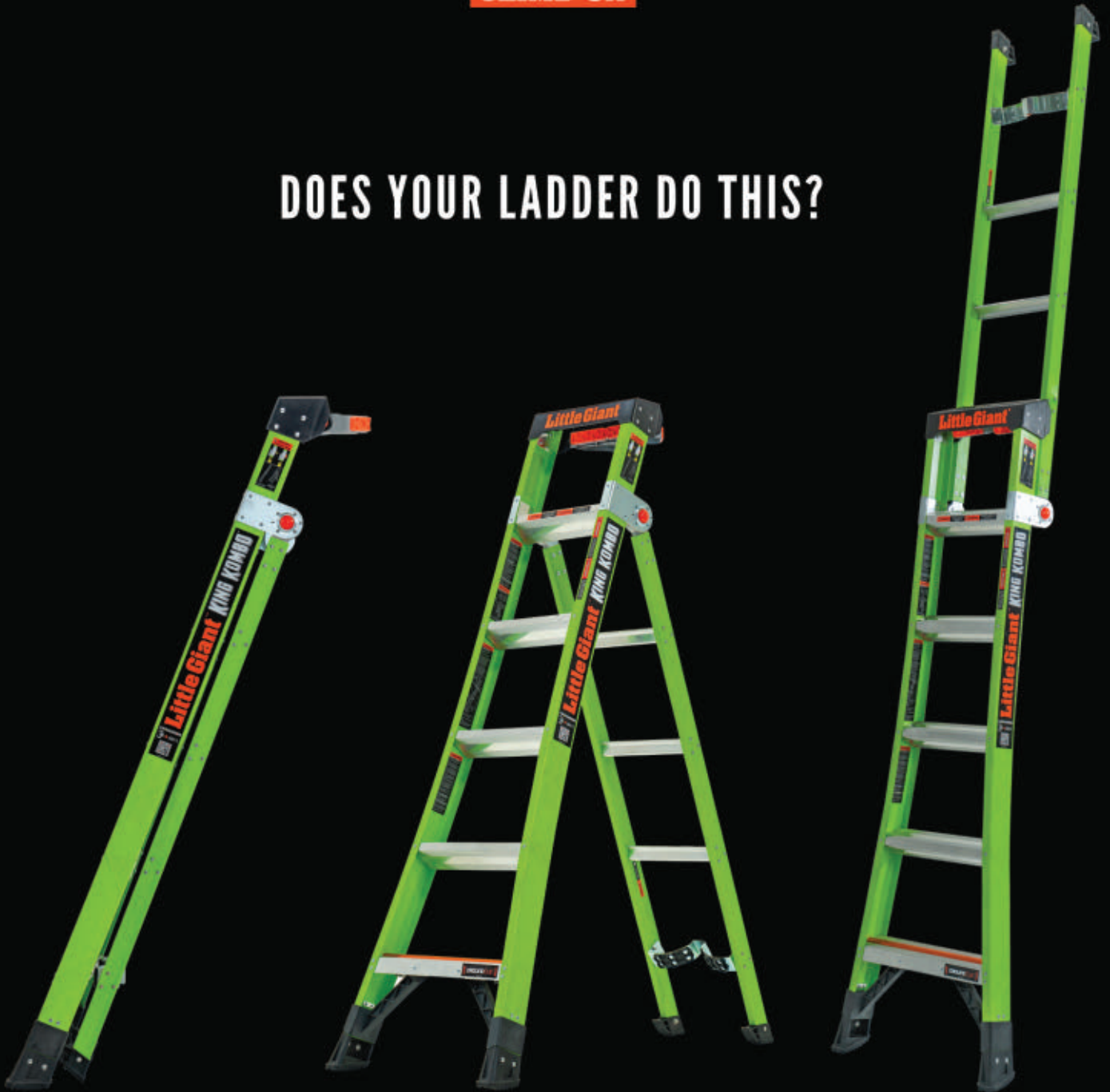
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Wood jigs help you work smarter instead of harder. A jig is a purpose-built tool accessory that makes it easier to perform a certain woodworking application, from cutting dowels to mitering crown molding, and everything in between. Here's a look at some handy tool jigs to facilitate your next woodworking project.

KREG TOOL ADAPTIVE CUTTING SYSTEM

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can also enhance your system with available accessories, such as another Guide Track and Track Connectors to double your cutting capacity. Visit www.kregtool.com.



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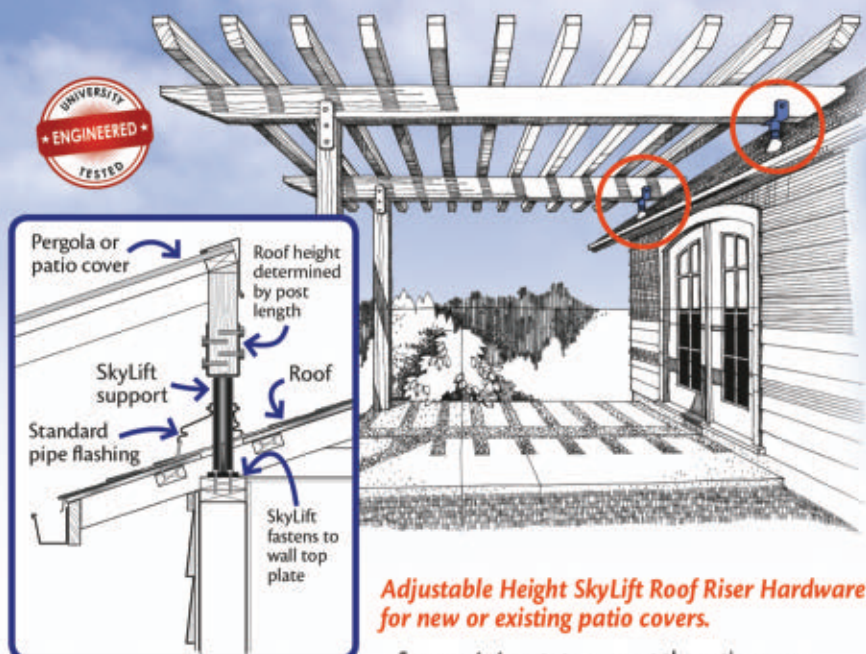
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ROCKLER CORNER KEY DOWELING JIG

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add visual interest with contrasting wooden dowels, non-ferrous metal rods, tubes or even leather cord. The jig includes interchangeable 1/8-, 1/4- and 3/8-in. diameter drilling guides, and because the dowels or rods are oriented across the joint, they increase its strength, much like splines. The jig is adjustable to work with different thicknesses of stock and to allow fine-tuning of the hole position. Once set, the jig can be moved and simply re-clamped to drill a



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Installing an Exterior Foundation Drain

Late one night during a flash flood, the rear basement wall of our house sprung a leak. A steady stream had spouted straight out the face of a cinderblock where it pooled onto the concrete floor, and that pool was growing fast. A crash of thunder woke me up, so I managed to catch the leak before disaster struck, but it took all night to bail out the water.

The below-grade basement wall backed against the downhill slope of the yard, at the bottom of which was a small paver patio with poor drainage that collected the runoff. Compounding the problem were clogged gutters that caused roof water to cascade off the edge, adding gallons to the pond forming at the back of house. The accumulated water that seeped into the ground caused so much

hydrostatic pressure it forced a leak through a weak spot in the foundation wall. So, at three in the morning during a thunderstorm, I'm the madman in the backyard ripping pavers out of the patio and shoveling out a makeshift trench to drain water to the side of the house. Next, I'm on a ladder in the rain tearing handfuls of leaves out of the gutter to redirect the waterfall. Meanwhile, my wife Shanna is downstairs battling the water using towels, buckets, mops, push-brooms and a wet/dry vac.

The next morning, I patched the hole with hydraulic cement but knew a permanent drainage solution had to be installed from the outside the house.



The problem area was covered by concrete pavers and pea gravel.



Have a plan to move and store all the displaced materials.

In the weeks of rainy weather after the flood, I kept the entire problem area covered with a huge tarp directing water into the trench I'd carved leading to the driveway. Once the weather finally cleared, it was time to install a foundation drain.

DEVISE A PLAN

The goal of a drain is always to move water from one place to another, and a traditional French drain incorporates an underground perforated pipe to provide an easy escape for landscape runoff. My plan was to apply the principles of a French drain beneath the backyard patio at my house, while incorporating some redundant features to ensure as little rainwater as possible could get past the drain system and contact the foundation walls.

Having observed that the tarp covering the backyard had prevented further leaks during some particularly nasty downpours, I reasoned that if I were to "water-proof" the same area using a permanent drain system, then I'd have addressed the issue. This problem area began at the end of a concrete stair landing and

extended past the end of the house to a driveway covered with crushed rock. My idea was to seal the end of the buried pipe at the concrete landing and divert water by sloping the open end toward the driveway, where the pipe will "daylight" a few feet past the corner of the house and bleed the runoff downhill toward the street.

When researching French drain installation, I was surprised to find so much conflicting advice. For example, some installers suggest you cover the pipe with a drain sock to prevent silt from clogging the pipe's holes. Other installers say it's crazy to cover the pipe with a sock, because silt will clog the sock fabric and prevent water from passing into the pipe.

After considering all the information, I came up with the system you see in this article which borrows what I considered the best ideas from several sources. For you "French drain purists" out there, note that I'm not dubbing

this project a traditional French drain, so you can keep your Twitters holstered. This is an "exterior foundation drain" installed to prevent any water whatsoever from getting to my basement.

During the planning phase, you should call 811, the national "Call Before You Dig" number. It's designated by the FCC to protect homeowners from the injuries, expenses and penalties caused by digging into underground utilities. This is a free service but it might take couple of days for the service-person to get to your house, so get your name on the list.

TOOL LIST

- Wheelbarrow**
- Garden hoe**
- Shovel (square- and round-point)**
- Mattock**
- Hand Tamper**
- Drill with spade bit**
- Utility Knife**



The work site contained two banks of pea gravel to decorate the patio. I used tarps to isolate the pea gravel from the dirt and drainage rock and keep the materials organized.



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LOGISTICS

If you're working as a one-man crew, this project will take a few days and a lot of manual labor. Be sure to eat your Wheaties. Keep an eye on the weather and block out a few clear days—this is no job to do in the rain.

Realize that digging the drain trench involves displacing a lot of dirt, and since you'll be replacing all that mass with gravel and pipe, you'll have to figure where to put all the dirt. Plan this in advance. I filled several low spots on my property and "bermed up" a few tree trunks. You'll need a wheelbarrow to transport the dirt around the site.

You might even need a pickup truck. I did. Depending on the scope of the job, a drain project could require a great amount of gravel. I used about 2-1/2 cubic yards of drainage rock on this one (although a lot of that gravel was used to support the patio pavers on top of the drain). If you don't have a pickup truck, you'll need to arrange for delivery of materials. It's always smart to have the rock delivered directly to the worksite



Shape the trench with shovels.

when you're ready to fill the trench, so arrange easy access for the supplier.

EXCAVATION

On this project, I intended to reinstall the patio pavers on top of the drain. When calculating the depth of the trench, you will need to account for the depth of gravel beneath the pipe (3 to 4 inches), the 4-in. pipe, the gravel bed that covers the pipe (at least 6 inches), plus the thickness of



Testing the length of the pipe. This photo shows the scope of the project.



I drilled three 3/4" holes every six inches into the bottom of the pipe.



Join pipe lengths with PVC primer and cement.



Apply the pipe sock.



Use a mattock to break ground. Allow the weight and sharpness of the tool to do the work—there's no need to take big swings.

any pavers or other materials that will cover the gravel. Generally speaking, the trench should be at least 18 inches deep.

I recommend breaking ground with a mattock, then digging out the loose dirt with a round-nose shovel. Save the flat-nose spade for scraping the bottom of the trench and shoveling gravel. Renting a powered trencher might speed up this project, but I was working near utility lines and decided to proceed carefully and dig it by hand.

Note that this project required a lot of extra digging because of the patio on top, which may not be the case in other situations.

Line the trench with super-duty plastic.

SHEETING

I lined the bottom of the trench with super-duty 6-mils plastic sheeting. Furthermore, I lined the two dirt banks shoring up the trench with the heavy plastic, with one of the sheets lapping

up a few inches along the foundation wall. The two flanking sheets were layered over the bottom sheet, forming a three-ply underlayment along the center of the drain. The sheeting is easy to cut to size with a sharp utility knife.



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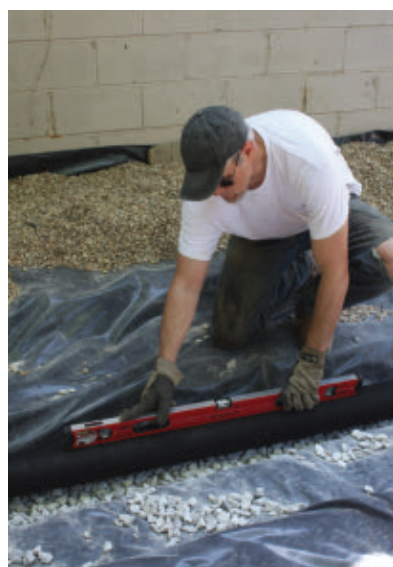
I lapped the plastic sheeting up the foundation wall and anchored it in place with a bed of pea gravel. The plastic sheds water along the foundation into the trench.

PIPE

Although perforated black plastic pipe is available at home centers, I chose a 4-in. white PVC pipe for its additional strength. Black pipe also has small holes, whereas I drilled three 3/4-in. holes every six inches along the PVC drainpipe, which I reasoned would be less likely to clog with silt. Note: a high-torque drill

comes in handy to power the spade bit.

I joined two lengths of PVC pipe to form an 18-ft. drain that extended from the stair landing all the way past the edge of the foundation wall. The pipe can be joined using PVC primer and PVC cement. After applying an end cap to the “starter” end of the drainpipe, I covered the pipe with a fabric pipe sock.



Place the drainpipe on top of a 3” bed of gravel and slope it away from the house.



Bury the pipe in drainage rock.

GRAVEL

I used a garden hose to rinse the fine particles off the drainage rock (gravel roughly an inch in size), so it wouldn’t gum up the pipe sock.

I shoveled a 4-in. bed of gravel into the bottom of the trench, then compacted it down to 3 inches with a hand tamper. The gravel bed can be used to create a slight pitch toward the daylight end of the drain (1 inch per 10 feet of grade).

The pipe should be placed over the gravel with its holes oriented downward, so water accumulating in the trench can rise into the pipe and flow away easily. I buried the pipe in another 4 inches of more gravel. The gravel trench should be at least 24 inches wide. (My drain trench was recessed below a wider 40-in. bed I dug in preparation for the 36-in. paver walkway.)

Compaction is critical to the success of any hardscape work, so be sure to tamp the gravel every time you add 3 or 4 inches to the bed.

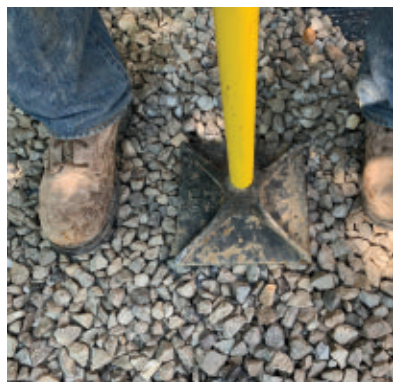
With the pipe buried, I covered the gravel trench with a layer of



I covered the trench with silt screen, then covered the screen with more drainage rock.

silt screen to prevent fine particulate matter from gunking up the pipe sock. I then covered the silt screen with more drainage rock.

I left the open “daylight” end of the drainpipe uncovered temporarily so I could observe its



Compact the drainage gravel every 4" of added depth.

performance during the next rainstorm. I did, however, block it off with some heavy fist-sized rocks, to keep critters out of the pipe and to ensure easy passage of water without worry of particulate matter clogging the exit.

Once the trench was completely filled, I tamped the surface level and topped it with the old concrete pavers to retain a permeable surface. Some drains use an inlet grate at the point where the water pools the most. My idea was to omit the usual crushed rock and sand bed from beneath the pavers and essentially let the entire walkway serve as an inlet grate. Doing this makes it difficult to install the pavers completely level, but I was more concerned with the functionality of the drain.



The drain trench was recessed into a broader trench I dug for the paver walkway, which I filled with gravel, compacted and leveled.

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A photograph of a wooden deck with a stone fireplace and a window looking out onto a lake. The deck is made of light-colored wood and has a dark brown railing. The fireplace is made of rough-hewn stone and has a wooden door. The window is framed in dark wood and looks out onto a lake with trees in the background. The text "Last-Deck" is overlaid on the image in a large, white, italicized font.

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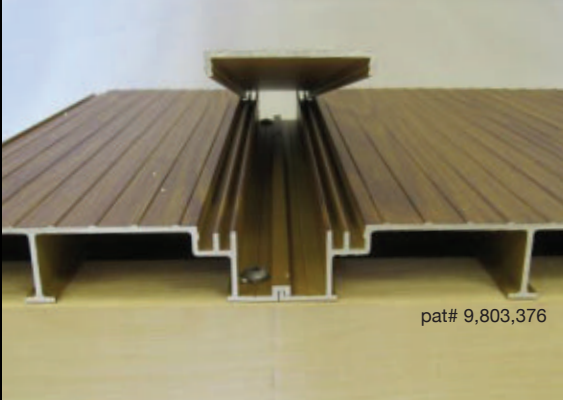
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I topped the gravel bed with the old mortarless pavers to keep the walkway permeable.

I'm proud to report the drain works perfectly! The house has seen heavy downpours since I completed this project, and the underground pipe now moves water away from the foundation and allows it to seep out of the gravel driveway, where gravity draws it toward a roadside city drain. And the basement? Nice and dry. **EHT**



This photo shows the daylight end of the drain shedding water after rain. Final step is to reapply more crushed rock to repair the driveway, then level and compact the surface.



Here is the paver walkway complete with concrete edging. Rainwater easily passes through the pavers with no ponding and escapes through the drain system, which extends past the foundation wall.

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INNOVATIONS IN TILE INSTALLATION

Man has used stone and ceramic to cover walls and floors since ancient times. Tile is a waterproof, durable and stylish option for any space. With all the new looks and sizes to choose from, it's easy to see why people want it for their homes. Methods for installation evolve over time, however, and this article highlights some innovative new methods for various tile applications.

COVER OLD TILE WITH NEW

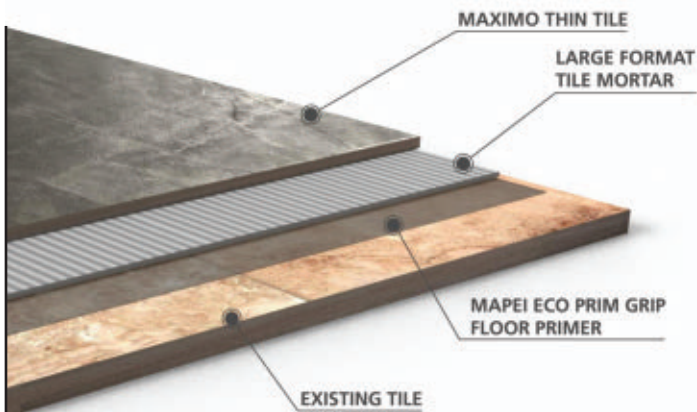
Remodeling a previously tiled living space usually involves a lot of messy demolition to remove the old tile, grout and mortar bed. Tile demolition can require the use of hammers, scrapers, chisels, even electric rotary hammers, and the work leaves a huge pile of debris to clean up. What if you could skip the demolition and go right to installation of new tile over the old stuff?





State of Grace
porcelain tile
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INNOVATIONS IN TILE INSTALLATION

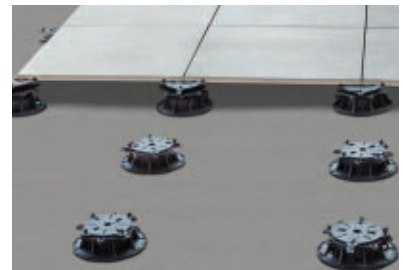


Exclusive to Floor & Decor, Maximo Durable Thin Tile is an ideal flooring solution if you're looking to save time and mess. Using floor primer and large-format tile mortar, Maximo thin tile can be installed over existing

subfloors, which eliminates the need for demolition. Like traditional tile, Maximo is durable, waterproof, and scratch- and stain-resistant. Plus, it can be installed in any room in your home. Learn more at www.flooranddecor.com.

EASIER EXTERIOR INSTALLATIONS

Exterior tile installations have always held many challenges for installers. Managing proper drainage and preventing damaged tiles are particularly difficult in harsh climates or areas with wide temperature swings or a lot of moisture. The proliferation of 2-cm thick porcelain tiles has created an opportunity for exterior installations to be done much



more easily and with greater success. Schluter Systems now offers the Schluter-Troba-Level paver support system designed specifically for use with thick porcelain tiles rated for exterior use.

The Troba-Level paver support system, or pedestals, supports the tiles above the substrate with no bonding system required. This

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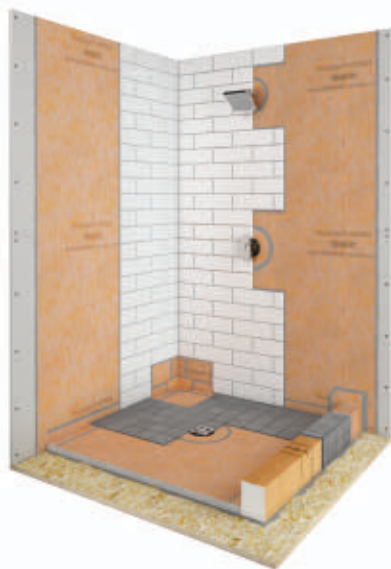


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elevated system has a number of advantages over traditional bonded tile methods, including simple installation, natural drainage and ventilation.

The system is available with several accessories designed to manage sloped substrates and different thicknesses of tile so that a level terrace or patio can be installed over an uneven substrate. By using different supports, shims and spacers, the installer can create a level patio with precise transitions and flush seams and corners.

Because tiles are not bonded in place, the system allows for quick and easy access to water-proofing, drainage systems, or utilities beneath the finished patio floor. (The installed paver support system needs to be

properly contained and restrained around the full perimeter for a long-lasting durable installation.) Learn more at www.schluter.com.

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The Delta Tile Leveling System from RUBI is a system of wedges and strips recommended for 12x12-in. formats or larger with varying thicknesses of up to 1/2, 9/16 or 3/4 in., depending on the model of strip used. The basic principle of the Delta Leveling System is to press down on the highest piece, until it is evenly positioned with the adjacent tiles, achieving a substantial improvement to the surface planimetry. The Delta System also prevents the tiles from moving while the adhesive





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sets and, during installation, reduces the number of corrections to the position of the tile itself

The Delta System nippers are designed to be used in both horizontal (floor) and vertical (wall) tile installation work. The main function of the nippers is to apply the necessary pressure to the wedge to allow the leveling of the tile to obtain a homogeneous flatness throughout the floor. Learn more at www.rubi.com.

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grout, eliminating mess and saving time and labor. Backed by the company's "EverStik" 10-year limited warranty, the Inoxia tiles enable DIY installers to

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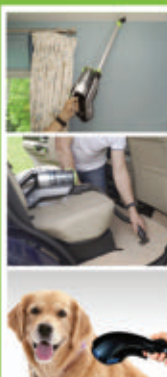
- ✓ Hose extends to 18ft
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- ✓ Re-usable bag included
- ✓ Powerful suction—5 times most hand-held vacuums
- ✓ Space Saving



STICKVAC

powerful cordless stick vacuum

- ✓ Flexible pipe for easy car cleaning
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- ✓ One touch on/off switch
- ✓ One touch power up and power down
- ✓ Super easy to empty
- ✓ Freestanding docking station



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INNOVATIONS IN TILE INSTALLATION

backing with a mixture of regular dish soap and water (this delays the bond so that you can place and then slide the tile into its precise location). Place the tile, and you're done.

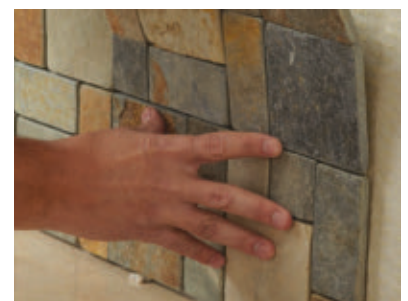
The manufacturing process eliminates the need for grout. Tile sizing and positioning is precise within the mosaic, and as a result no grout is needed vs. typical mosaic tile that requires grout to



hide their associated manufacturing and installation imperfections. For both DIY and professional tile jobs, Inoxia self-adhesive mosaics can speed up installation time 400 percent faster than traditional methods. Learn more at inoxia.us.

ADHESIVE TILE SETTING MAT

Custom Building Products' SimpleMat Contractor Roll is one of the quickest, easiest and cleanest ways to install tile on countertops, backsplashes and shower walls. SimpleMat replaces traditional thinset mortar or mastic adhesive. The adhesive retains its bonding strength for extended periods of time, which means users have the flexibility to tile



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onto the mat an hour at a time or over several days. SimpleMat bonds instantly so you can start grouting immediately after tile installation. Because it requires no mortar or mixing, there is minimal mess.

Note that SimpleMat is suitable for interior projects, but is not suitable for use on floors, on ceilings, shower floors or in areas constantly exposed to water. Learn more at www.custombuildingproducts.com.



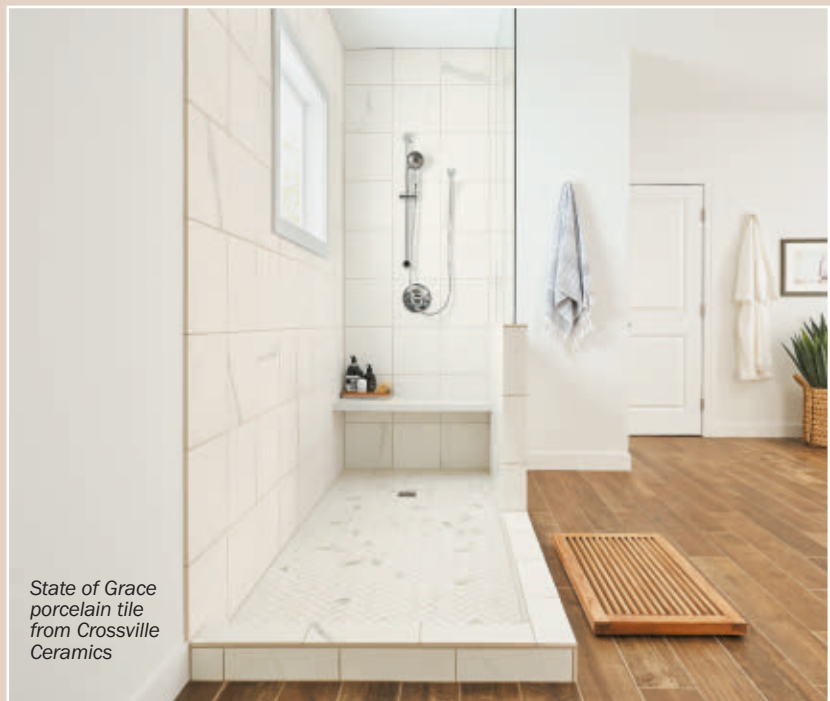
SPRAY-LOCK WALL TILE ADHESIVE

Spray-Lock Wall Tile Adhesive is an innovative application that cuts installation time by more than 50 percent. Tile can be installed over porous or non-porous substrates without sagging. Spray-Lock WTA will work on tiles up to 6-by-6 in. and all mosaic tiles on a backing, and it is

CERTIFIED PORCELAIN TILE

Not all ceramic tile is porcelain tile. Porcelain tile offers specific wear characteristics. Many ceramic tile installations don't require porcelain, but in some cases, porcelain tile's dense, impervious body is necessary to meet the environmental and wear demands of the installation. According to the Tile Council of North America, porcelain tile is defined as an impervious tile with a water absorption of 0.5% or less. Because of its low water-absorption characteristics, porcelain tile is considered "frost-proof" and can be used in outdoor applications in cold environments. Unfortunately, a lot of tile is mislabeled "porcelain" when, in fact, it doesn't meet the definition. If a tile described as "porcelain" but not meeting the qualifications of porcelain is used in a cold exterior application, it may absorb water, freeze and then crack, placing the entire installation at risk.

Under the Porcelain Tile Certification Agency (PTCA) program, manufacturers can prove their tile is porcelain – meeting the 0.5% water absorption criteria – and denote this with a PTCA certification mark on their product packaging as confirmation of compliance. So, if you're looking for genuine porcelain tile for your next home-improvement project, keep an eye out for the PTCA seal of approval.



State of Grace
porcelain tile
from Crossville
Ceramics

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Use Durham's Rock Hard Water Putty to fill cracks and holes, rebuild missing material, and mold new objects. It permanently adheres in wood, plaster, and tile without shrinking. You can then saw, chisel, sand, polish, and color it.

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



approved for use in shower applications by the Tile Council of North America. When installed with the product, tile can be grouted in one hour. There is no need for a ledger board, and the adhesive installs over many surfaces. Complete the full installation in a single day. Visit www.spraylock.com.

WATERPROOF TILE WALLS FOR SHOWERS AND BATHS

Whether a tub surround or a standalone shower, the walls must be waterproof before the tiles are installed. Schluter Systems' Schluter-Kerdi-Board Kit includes everything needed to build waterproof walls for a standard tub surround or an acrylic shower base, all in a package that can easily fit into most vehicles. The kit eliminates the possibility of damaging leaks and mold growth due to moisture penetration. It includes eight pieces of 1/2-in. thick Kerdi-Board waterproof building panels that can be screwed directly onto wall studs to build a tub surround or shower area. The panels are 48×38 inches and can easily be cut with a utility knife to fit any wall space up to 101 sq. ft.

The Kerdi-Board panels are lightweight, don't generate dust when cut, and completely eliminate



the need for gypsum or cement board on the shower walls. The panels are installed with screws and washers that are included in the kit. Once the panels are up, only the seams between panels and the screw penetrations need to be waterproofed to complete the walls. The kit includes a 5-in. wide strip of Kerdi-Band waterproof membrane that can be cut and then installed using thin-set mortar to seal these areas. Tiles are then set directly onto the Kerdi-Board with thin-set mortar. This system is not only waterproof but vapor-tight, so it won't leak or promote mold growth.

The kit also includes two tubes of Kerdi-Fix sealing and bonding compound to create a waterproof seal around the flange of the tub or shower base. Other components include a 4-1/2-in. mixing valve seal, a 3/4-in. pipe seal, and a 1/2-in. pipe seal to ensure no moisture can enter the wall cavity where the plumbing fixtures protrude into the shower area. Learn more at www.schluter.com.

SLOPE SYSTEMS FOR SHOWER FLOORS

The Goof Proof Pre-Pitch Shower Kit from Mark E. Industries is a stay-in-place spreading tool used beneath shower pan liners. It creates the code-required subfloor slope needed beneath the pan liner to manipulate the water towards the weep holes that are integral to shower floor drains. By



having a pitch under the pan liner, water that passes through the mud bed of a tiled shower floor is directed to the weep holes instead of being trapped between the mud bed and the liner. This ponding or collection of water is where many mold- and mildew-related issues originate. Made of economical, lightweight plastic, Pre-Pitch can be cut to fit with a hacksaw.



GOLDBLATT FLOOR LINE LASER

Designed for accuracy and versatility, this easy-to-use laser level features a leveling plate and silicone pads that allow for precise leveling in a 33-ft. range across a floor. Ideal for tile layout, the laser features simple one-button operation and projects two beams with accuracy of ±3/8-in. over 30 feet. Visit goldblattusa.com.



After the liner is in place, Goof Proof Quick-Pitch Float Stick System permits easy construction of shower floors with the proper minimum water drainage slope of 1/4-in. per 12-in. run. With this

time-saving system, there is little chance for error in measurement (or the need for a level), to achieve a properly sloped shower floor. The Quick Pitch system uses a Center Ring and tapered Float Sticks to ensure the correct slope in standard or custom shower areas with walls up to 6 feet in any direction from the floor drain. Visit goofproofshowers.com.

CUSTOM SHOWER PANS

The Redi Your Way custom shower fabrication system from Tile Redi was named a "Best of IBS" award finalist at the 2019 International Builders' Show.

When standard sizes and configurations don't quite fit your shower project, Redi Your Way provides true custom shower pans that can be built to any

customer-provided specifications. Beyond dimensions, customers can select drain styles and location, cutouts, and the height, number and placement of curbs and entrances. No waterproofing is needed on the one-piece, leak-proof shower pans. Their light weight enables easier handling by installers. They can typically be installed by one person in less than 30 minutes. Tile can be directly set onto the surface, simplifying installation and saving valuable time. Plus, installations only require an inspection of the



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Minor Black



Shell White



No White



Rusted Bronze



drain connection to the waste-water plumbing.

Tile Redi also offers the Redi Shower Kit, which takes the guesswork and stress out of the design process. Everything needed for an installation is included—the shower base, wall panels and glass door enclosure. Numerous colors are offered that can be mixed and matched to create the ideal combination for each shower. The Redi Shower Kit is available in four series designed to meet a variety of design aesthetics. Learn more at www.tileredi.com.

VINYL TILE ALTERNATIVE

Luxury Vinyl Tile, often called LVT, is a flooring product that usually installs with tongue-and-groove joints and looks like stone or ceramic tile, complete with natural colors and surface texture that feels like the real thing. Similarly, LVP is luxury vinyl flooring that looks like wood planks that often include textures of scraping or embossing that heighten the realism.

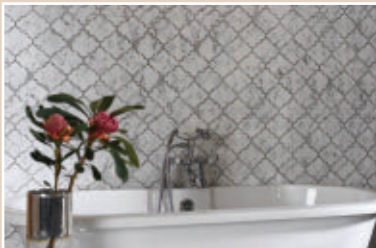
Waterproof and easy-to-install, vinyl tiles or planks eliminate the messiness of mortar or adhesives often used with tile. Many of these

TILE WITH STYLE

A quick look at some cool collections in the wide world of tile.

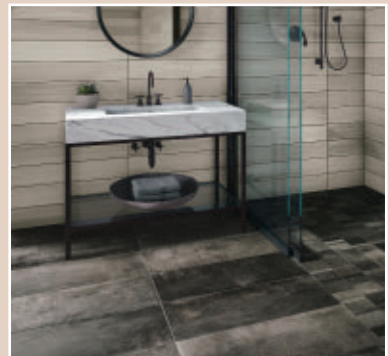
REFORMATION PORCELAIN TILE

Crossville Inc. recently launched its Reformation porcelain tile collection. This unique, concrete-look product offers visual depth with movement, pitting, aggregate and sheen variations interpreted in stylish, large format plank tiles, as well as mosaic options and trims. The collection's four hues answer the demand of current color trends while providing lasting appeal. The quartet of colors includes New Day, a light, cool gray; Rally Cry, a strong, nuanced gray; Ideology, a light neutral; and March On, a darker hue reminiscent of industrial steel. Reformation comes in three rectified plank tile sizes—24"x36", 12"x36", and 6"x36"—that are ideal for mixing and matching in a variety of patterns. Visit crossvilleinc.com.



PALAZZO COLLECTION

Palazzo, Original Style's new large format tile range, features decorative patterns designed and printed in the heart of Devon, England. The six designs are all inspired by the grand palatial buildings of Italy. The patterns in this collection look as if they have been inlaid on classical Carrara marble. Palazzo provides a practical alternative to wallpaper, appealing to those who are looking for stylish, decorative wall designs for a bathroom or kitchen. Designed in pale grey and crisp white, the tile in this collection have a neutral color palette that coordinates with most color schemes. Visit www.originalstyle.com.



FESTIVAL BRIGHT WHITE ICE BEVELED WALL TILE

This Bright White Ice Beveled Ceramic Wall Tile is 3x6 with a polished or high-gloss finish. It is suitable for use as a wall tile but should not be used on floors. Wall tiles will add an attractive touch throughout your home. Whether you're looking for simple, clean designs or large format, these tiles offer long-lasting beauty that is versatile, affordable and easy to maintain. Visit www.flooranddecor.com.



FRAGMENTA TERRAZZO AND MARBLE LUXE

Walker Zanger's two new natural stone collections—Fragmenta Terrazzo and Marble Luxe—are available in large-format tiles classically inspired and skillfully crafted in a versatile selection of modern styles and neutral colors. Visit walkerzanger.com.

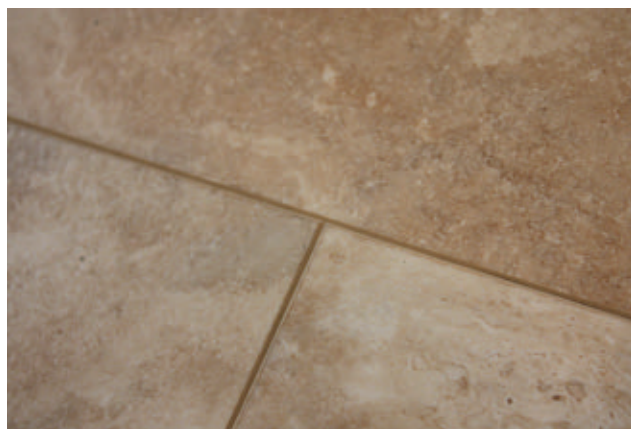
vinyl interlocking planks simply snap into place, and while some products are made to be grouted, others form a faux “grout line” at the joint, eliminating the mess and labor of applying traditional grout. Some vinyl planks are installed directly over bare concrete, with no need for a subfloor. This cuts

down on labor, in addition to making it much easier to replace a plank later if needed.

Vinyl is waterproof so it will resist moisture in basements and kitchens. And messes are easy to clean up. The thick vinyl tiles are durable enough to handle heavy traffic and they come in dozens of designs

and colors, from textured stone to hardwood, all in multiple shades—plenty to suit any décor choice.

Note that although minimal floor prep is needed, the subsurface must be flat and even for successful installation of vinyl tiles because the the tongue-and-groove edges must align to join properly. **EHT**



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NEW APPLIANCES FOR YOUR KITCHEN UPGRADE

We cover a lot of remodeling projects in the pages *EHT*, but when it comes to kitchen renovations, the project usually revolves around placement of the new appliances. Here's a roundup of innovative new appliances to consider when planning your next upgrade.

PFISTER POTFILLER FAUCETS

Potfiller faucets are standard features of your favorite restaurant kitchens. Why not bring that same convenience to your home kitchen and make it easy to fill pots where they're used? Among the Pfister line of potfiller faucets is the Lita Wall-Mounted Potfiller. Featuring

a sleek design and two swivel points, the Lita potfiller provides extended reach and flexible positioning across the counter and stovetop, allowing you to fill pots right where you need them. An extra lever at the nozzle lets you can control water flow at the tip of your fingers. The Lita Collection offers potfiller faucets in Polished Chrome, Stainless Steel, and Tuscan Bronze to create a coordinated look in your kitchen. The simple cold-



water only supply means the faucet installs with a single hole in the wall. And Pfister's advanced Pforever Seal technology prevents leaking over time. Visit www.pfisterfaucets.com.

DELTA TRASK TOUCH20 SPOTSHIELD KITCHEN FAUCET

Exclusive at Lowe's, the Delta Trask Touch20 Spotshield faucet features Touch20 Technology, which means a simple touch anywhere on the spout or handle will start and stop the flow of water. This helps keep your faucet cleaner, because washing the mess off your hands shouldn't involve making a mess of your faucet. The Delta TempSense LED light changes color to alert you to the water's temperature and eliminate any possible surprises. Delta MagnaTite Docking uses a powerful integrated magnet to pull your faucet spray wand precisely into place and hold it there, so it stays docked when not in use. SpotShield Technology helps to keep your faucet cleaner, longer by resisting water spots and fingerprints. Plus, Delta faucets with Diamond Seal Technology perform like new for life with a patented design which reduces leak points, is



less hassle to install, and lasts twice as long as the industry standard. Visit www.lowes.com.

THOR BLACK STAINLESS STEEL KITCHEN SUITE

Thor Kitchen debuts the first pro-style Black Stainless Steel Kitchen Suite for under \$6,000. This includes a top-performing 30-inch gas range, 30-inch under-cabinet ventilation hood, 4-door French door refrigerator with recessed handles, and 24-inch dishwasher. This is the same great metal stainless steel, just a different finished look. Black stainless steel is durable, resistant to rust, corrosion and fingerprints, and it blends well with stainless steel. It combines the dark appearance homeowners love, with a modern touch. Visit thorkitchen.com.



FORZA PRO-STYLE GAS RANGES

Forza's radically designed gas ranges are offered in 30-inch or 36-inch models and six color options. High power dual-flame burners provide precise heat control. Forza's 18,000 BTU double broiler outperforms traditional infrared broilers with its powerful



BLUE flame-spanning the widest oven cavity on the market and evenly distributing heat for superior, consistent results. The range boasts the largest continuous usable cooking surface with edge-to-edge cast iron grates and integrated bullnose. The oven has up to 6 cubic feet of usable space with the capability to fit commercial size cooking trays. Visit www.forzacucina.com.

THERMADOR MICRODRAWER MICROWAVE

Thermador MicroDrawer microwaves are a convenient, beautiful addition to the home. The 24-Inch Built-in MicroDrawer Microwave MD24WS has a spacious 1.2 cu. ft. interior that fits a 20 oz. cup or 13x9-in. pan. Achieve a perfectly flush installation in any standard-depth cabinetry. The MicroDrawer includes a special sensor mode that controls humidity and automatically adjusts cooking level and time. It offers ten cooking modes that include melt, warm and soften. Simply touch the MicroDrawer to open and close it, eliminating the need for a handle. Visit www.thermador.com.



REV-A-SHELF SINK BASE 2-IN-1 CLEANING PULLOUT

The Rev-a-Shelf Sink Base 2-in-1 Polyethylene Cleaning Pullout allows you to store all your cleaning supplies in one easy-to-access location. Designed for 24-in. and





larger sink base cabinets, this under-sink cleaning pullout features a removable polyethylene caddy in three color choices, two 1-L spray bottles, and glides on full-extension, under-mount, 7-lb. rated, concealed slides with soft-close. Visit www.rev-a-shelf.com.

JENN-AIR OBSIDIAN INTERIOR REFRIGERATOR

Following recent refrigerator and ovens designs that allow remote control, Jenn-Air has added obsidian interior built-in refrigerators to



its line of luxury home appliances. Lauded in appliance reviews as the hottest trend in fridges, they feature an interior black finish with stainless steel trim and LED lighting. While changing up interior colors in fridges is nothing new — KitchenAid did the same thing with its line of platinum interior fridges in 2013— Jenn-Air has taken it a step further, making it easier to see what is in the fridge with its dark background versus the white interior of most other fridges. All food labels stand out and the color of your fruits and vegetables is enhanced. Visit www.jennair.com.

BOSCH STAINLESS STEEL 24" DISHWASHER

Bosch is promoted as the “Quietest Dishwasher Brand” with washers generating only 50dB. The Bosch 24" Stainless steel dishwasher offers the 24/7 Overflow Protection System to help prevent water leaks. The utility rack provides a place for those hard-to-place items, and the stainless exterior offers the ultimate protection against fingerprints, dirt and smudges. The

washer’s sanitize option eliminates bacteria and enhances drying results. With Bosch PrecisionWash, intelligent sensors continually scan and check the progress of dishes throughout the cycle, and powerful, precision spray arms go to work targeting every item of every load. Every Bosch dishwasher undergoes 485 quality checks to deliver



dependable quality. The company offers several lines of dishwashers, including the 500 Series with AutoAir, which automatically releases the door at the end of the cycle to let moisture escape and fresh air in. And the Bosch 800 Series features the patented new CrystalDry technology that delivers 60-percent better drying results. Visit www.bosch-home.com.

KOHLER SEMI-PRO FAUCET COLLECTIONS

Designed with professional kitchens in mind, Kohler’s line of Semi-Professional Kitchen options on the Purist and Bellera Faucet Collections are the perfect edition for the at-home chef. The unique DockNetik magnetic docking arm holds the spray-head firmly in place while the three spray options



provide superior cleaning and filling. The temperature memory feature allows the faucets to be turned on and off at the temperature set during the previous use for easy operation. Visit www.us.kohler.com.

INSPIRA RANGE HOODS

The new Inspira range hood series from Best offers creative freedom for homeowners who want to add a personal touch with interchangeable glass panels in 8 on-trend color choices. Let your imagination take over

with chimney, island and under cabinet models. The dishwasher-safe hybrid filters trap up to 28 percent more grease than the previous generation. You can enjoy visiting with your guests while cooking, thanks to the whisper-quiet blower. The Energy Star-certified PURLED light system offers even, glare-free lighting across your entire cooking surface — just like in full daylight.



An exclusive new LED system boosts light output by 25 percent, distributes light six times better, improves energy efficiency by 88 percent, and extends the life of your light bulbs by up to 25 times. You can choose from four light settings, including night light. Visit www.bestrangehoods.com.

RADIANT WIRELESS CHARGER

For your charging needs in the kitchen, the Radiant by Legrand Wireless Charger offers a charging solution that complements both elevated style preferences and evolving consumer needs at home. The outlet holds and charges a wireless charging-enabled personal device in a sleek cradle backed by a Qi-certified charging pad, keeping it off the counter. It easily replaces an existing outlet without requiring installation of new electrical wiring. The Wireless Charger offers simultaneous charging via multiple access points including two AC receptacles, one wireless charging pad and one USB port. It is compatible with every Qi-enabled device, including those



from market leaders like Apple, Samsung, Sony, LG, Motorola, and Nokia devices. The radiant Wireless Charger is available for purchase on Amazon.com.

GAGGENAU 200 SERIES COMBI-STEAM OVENS

The 24-in. flush-fitting 200 series ovens from Gaggenau can be coupled with a fully automatic coffee machine, warming drawer or vacuuming drawer. Positioned vertically or horizontally, this elegant series comes in three finishes and installs flush to your wall surface, fitting discreetly into any interior. And for those



NEW APPLIANCES FOR YOUR KITCHEN UPGRADE



requiring a more traditional formation, the oven can be positioned under the work surface. Certain appliances offer Home Connect with the option of remote control using a digital device and integration into home management systems. Steam without pressure with its included water tank. Using a TFT touch display, convection 30 °C to 230 °C can be combined with chosen humidity level of 0, 30, 60, 80 or 100 percent. Visit www.gaggenau.com.

BOCCHI FARMHOUSE SINKS

Bocchi Farmhouse Sinks bring back the ultimate kitchen material. Fireclay, a 100-percent natural organic and recyclable material used by craftsman for centuries to create timeless appliances, has now returned. With firing in the

kilns up to 2000°F temperatures, Bocchi claims Fireclay is the most durable material used in today's kitchens, so dealing with extreme heat coming from pots and pans is no problem. Due to their special glaze coating fused with the fire-clay body, the sinks have a non-porous, uniform, scratch- and stain-resistant surface. With its protective bottom grid and distinctive looks, Bocchi Farmhouse Sinks are crafted to match your design and functional needs. Visit www.bocchiusa.com.



KOHLER CUSTOMIZABLE APRON FRONT SINK.

Impress your guests with Kohler's customizable Tailor Apron Front Sink. The interchangeable front panel can support any custom creation; match the panel to your tiled backsplash or countertop material for continuity, or pop in your favorite color to add some flair. Kohler also offers pre-designed curated apron fronts in design-forward patterns. Perfect for the indecisive, choose one insert, then swap it out for another whenever the mood strikes. Change up the apron panel for a quick home refresh. Visit www.us.kohler.com.

REV-A-SHELF WALL PULLOUT SHELVING SYSTEM

Make the most of your wall cabinet space with Rev-A-Shelf's Wood Shelving System. Designed for 9- and 12-in. wall cabinets, the 448-WC Series





is available for full access cabinets and a new face-frame version is designed for 36-in. wall cabinets. This pullout features natural maple construction, full-extension, ball-bearing, 100-lb. rated slides

with soft-close and either four or five shelves with chrome wire accents. Precise door is easy with the patented mount brackets with micro-adjustment. Visit www.rev-a-shelf.com.

THERMADOR CUSTOM-PANEL REFRIGERATORS AND FREEZERS

Discover stainless steel and custom-panel refrigerators and freezers that reflect what you love. The newly redesigned Freedom Refrigeration Collection



SIMPLE DIY REPAIRS FOR KITCHEN APPLIANCES

These simple repairs to three common household appliances can save homeowners money that would otherwise be spent on service calls and labor.



REFRIGERATORS: The gaskets on the refrigerator doors—an important feature to both lower energy consumption and preserve food—often become ripped or cracked, and it's a repair almost anyone can do. Most gaskets today need to simply be pushed into place; older fridge gaskets may have screws that need to be loosened to install a new one.

OVENS: Bake and broil elements like a light bulb in an electric oven can fail, but they are usually simple repairs. Make sure to shut off power to the oven or unplug it; then unscrew and remove the old element and replace it with a new one.

On a gas stove, the glow bar igniter frequently fails, and while it's a fragile part, it's also easy to DIY. It's a bit more involved than the bake/broil elements on the electric stove, because access panels have to be removed, but it's not too overwhelming, and requires just a screwdriver or multi-tool.

DISHWASHERS: Dishwashers also have a door gasket that can tear—and a functional door gasket is the difference between a leaking dishwasher and a sealed one. Gaskets can be ordered and repaired quite easily; like a refrigerator, some only need to be pushed into place, while others are slightly more challenging, but none is very difficult to repair.

The detergent dispenser is another relatively straightforward fix. Depending on the model and age of the dishwasher, fixing this might be as simple as replacing a spring, or may require replacing the enter dispenser module.

To find more appliance repair advice and to shop for parts and supplies, visit www.repairclinic.com.

offers a wealth of personalization options. The 23.5-in. integrated column-style refrigerator pairs with an 18- or 24-in. freezer column to fill a pre-existing 42- or 48-in. space to create a side-by-side built-in refrigerator and freezer. The new Thermador Auto Door Opening technology allows you to either push or pull to open the refrigerator door, adding a personalized touch. Protect your fresh-from-the-garden fruits and vegetables with removable and luxuriously soft-close Delicate Produce Bins. A touch-screen TFT display panel controls settings throughout the refrigeration unit, including individual temperature control, lighting and Open Door Assist. Controlled independently, the ThermaFresh System provides humidity control and precise temperature management where you need it most. Visit thermador.com. **EHT**

Show Moss Who's Boss



by Rob Robillard

From the roofs to decks, exposure to outdoor elements can wreak havoc on homes over time, giving rise to moss, mold and mildew that can discolor and damage the building materials. Here's how to fight back.

KEEPING MOSS OFF YOUR ROOF

I love moss in the woods, but not on a roof. Roof moss tends to grow on north-facing roofs that receive less direct sunlight and stay damp longer than south-facing roofs. Moss needs a moist environment to survive, and south-facing roofs have the benefit of more sunlight and tend to be drier.

There are three contributing culprits that promote the growth of moss: (1) moisture, (2) lack of sunlight, and (3) roof debris.

Overhanging tree branches provide shade, as well as drop debris onto roofs. The debris retains moisture and acts as a food source for Moss.

Moss can also damage your shingles and reduce their overall longevity and performance. As the Moss grows, it attaches to the shingles and raises their leading edges. As the shingles lift or curl upward, they're at an increased risk of tearing off due to high winds.



Moss on the roof can damage your shingles and reduce their overall longevity and performance.

ROOF SAFETY

Before you venture onto your roof, realize that falls from a roof account for many serious injuries and deaths in construction. Make sure you take appropriate steps to minimize your risk of slipping and falling. Never work on a wet roof. Keep your work area as clean of dirt, tools and debris as possible. Wear safe footwear; soft-soled boots provide the best roof traction. When working on a steeply pitched roof, protect yourself with safety equipment such as a safety harness. Set up and climb your ladder properly.



When preparing for the job, protect all surrounding vegetation from exposure to chlorine bleach.

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REMOVING ROOF MOSS

There are a bunch of cleaning products you can buy to spray and forget (in fact, I think that is a brand name). The most effective method I've seen for cleaning algae and moss from a roof is with a 50:50 mix of laundry-strength liquid chlorine bleach and water.



You can mix a 50:50 blend of laundry-strength liquid chlorine bleach and water.



Apply the bleach spray liberally to the moss with a sprayer. Allow the solution to soak in for 15-20 minutes.

If you're the type of person who likes to do things yourself, then try this cleaning method. It takes some time to work.

HOW TO DO IT

1. Apply the bleach mixture to the roof moss with a sprayer and allow the solution to soak in for 15 to 20 minutes.

2. Rinse thoroughly with low-pressure water.

3. You may need to reapply and leave on longer but avoid letting the solution dry completely

4. Remember to protect landscaping below the roof runoff and to wear personal protective equipment when working with chlorine bleach.

5. Never use a pressure washer to clean an asphalt shingle roof as this will cause granule loss and very likely premature failure of the roof system.

In severe cases, it may take more than one bleach treatment to kill all the moss.

The roof moss will loosen over time and may be removed with a leaf blower. Remember to direct the blower's airflow down the slope to avoid driving debris under the edges of the shingles.

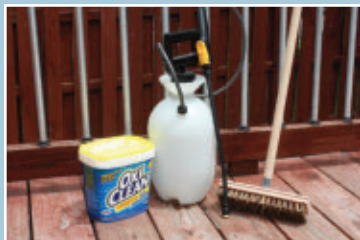
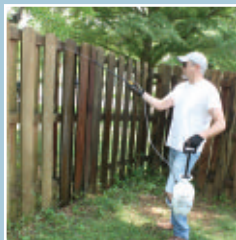
KILLING MOLD & MILDEW OUTDOORS

The same stuff that fights moss on your roof—a chlorine bleach solution—can kill mold and mildew and clean stains around the home. Shady areas of the home are most prone to infestation and should be regularly inspected. After protecting the surrounding vegetation from the bleach, the solution can be applied with a sprayer, allowed to work for about 15 minutes, then thoroughly rinsed off. One aggravation that comes with using the chlorine-water solution is that the liquid runs off when applied to vertical surfaces, when the bleach would have more effect if it maintained contact with the work surface for a few minutes.



Moldex Instant House Wash addresses the runoff problem by offering an advanced bleach gel formulated with Active Cling Technology. It allows the cleaning agents to hold onto a vertical surface longer to achieve the highest effective contact time. It removes tough stains from mildew, mold, algae, fungus and moss without scrubbing, and restores the original look to vinyl, brick, stone and wood siding. When connected to a standard garden hose that mixes the solution right inside the spray bottle, the nozzle stream will reach the second story of a house and cover up to 4,000 square feet per container.

Whereas chlorine bleach does an excellent job of killing bacteria and viruses, and removes superficial mold, it has not been proven effective in killing mold on porous surfaces such as wood. Chlorine bleach will clean the surface of outdoor wood, but the porous nature of the woodgrain will often allow the mold to return. This is because the mold's enzyme roots grow inside the pores, and chlorine bleach cannot penetrate the porous material due to its ionic structure. Chlorine bleach also damages the lignin in the wood, which is how the wood is bonded together, and this will make it more prone to aging and splintering along the surface. Chlorine bleach can also cause some deck stain/sealers to fail, removing the color tone and even some of the wood's natural color.



A better alternative for deep cleaning outdoor wood is to use oxygen bleach. As found in laundry detergent, oxygen bleach cleans fabrics without disrupting the color or damaging the fibers. Oxygen bleach can usually be combined with water, applied to the wood and allowed to sit for 15-20 minutes, then it can be easily rinsed from the surface with a garden hose. Oxygen bleach can also clean the wood without harming the surrounding vegetation, which eliminates the need to use plastic or drop cloths for protection.



Rinise thoroughly with water, spraying in the direction of the roof's downward slope. Reapplication of the bleach may be required for roofs with heavy mold problems.

PREVENTING ROOF MOSS

If you want to be more proactive, there are some additional things you can do to discourage future growth of moss and algae.

1. Trim tree branches back to allow more sunlight to reach the roof

2. Reduce debris accumulation on your roof, which is often a problem with low-pitch roofs, because leaves and branches tend not to blow off. Use a leaf blower to clean the roof, directing the airflow down the slope.

3. Keep gutters clean to promote water drainage.

4. Do not allow gutters from an upper roof to drain directly on a

lower roof. Extend the downspout from the upper roof into the lower gutter.

Add zinc or copper strips to prevent both algae and moss on shingle roofs, or apply asphalt shingles that incorporate algae-resistant copper granules. **EHT**

Editor's Note: Robb Robillard is a professional remodeling contractor. Visit his blog at www.aconcordcarpenter.com.



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Wolmanized Outdoor Wood from Lonza Wood Protection combines the natural beauty of real wood with long-lasting protection against termites and

fungal decay. It is ideal for decking, railing and structural deck components, walkways, gazebos, fences, and other backyard projects. It can be painted or



stained, it's more economical than alternatives, and it's made from a renewable resource.

REAL WOOD

Wood is nature's sustainable building block. It is a renewable and rapidly replenished resource grown on managed timberlands using only sunlight, water and time. It requires less energy to produce than alternative building materials and offers greater insulation value. Growing trees absorb carbon dioxide, and wood products sequester carbon, both reducing greenhouse gases. Because of its lighter weight, wood can often be installed with lighter equipment having less environmental impact.

AVAILABLE

Wolmanized Outdoor Wood is easily sourced at local lumberyards and home-improvement stores. It is always in stock in the event of project changes or additions.

WORKABLE

Wood offers excellent workability with common construction skills and tools, plus it provides design flexibility and for many applications, wood is aesthetically preferable.

AFFORDABLE

The cost of Wolmanized Outdoor Wood is significantly less than composite material. Plus, the upkeep cost is minimal, which could include cleaning and brightening, water repellent and maybe stain.

WARRANTY

Wolmanized Outdoor Wood is backed by a limited warranty in qualifying applications. See www.LonzaWoodProtection.com for details.

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Sharp Matters



By Rob Foster

A woodsman was asked, “What would you do if you had five minutes to chop down a tree?”

His response, “I’d spend the first three minutes sharpening my axe.” The time invested in sharpening the tool means less time and effort to achieve the goal.

Having equipment that is properly maintained to do the job is only half the battle. More importantly, dull blades are more dangerous than a sharp blade because a dull blade requires more effort and pressure to

use, which increases the chance of slippage. That’s why #SharpMatters.

SHARP OR DULL?

There are a few quick ways to safely determine if a blade is dull or sharp. First, perform an initial visual inspection by looking at the edge of the blade under a bright light. If you see any reflection, then the edge is dull and needs honing or sharpening. If you see just a black line, then the edge is sharp.

A tried and true method is to cut paper. Take a sheet of copy

paper and hold the knife edge perpendicular to its edge. If it cuts with limited effort, the edge is sharp. If it leaves a ragged or uneven cut, the blade needs to be sharpened or honed.

For kitchen knives, an onion is a great test because the skin is slippery and comes off very easily. A sharp knife will easily cut through the skin, gaining purchase on the first pass without the need to use a sawing motion.

When testing wood-cutting tools, the edge should cut wood fibers cleanly without crushing the fibers.

Fillet or skinning knives should quickly and cleanly penetrate with little to no resistance.

SHARPENING BASICS

Grinding the steel along the entire length on each side of the blade (excluding serrated portion) creates a burr that is critical to creating a sharp edge. It is very important to use the same number of strokes on each side of the blade to ensure a true burr is formed.

Once a burr is created, with each stroke, alternate sides to refine the primary edge. A knife becomes sharp when the two sides are brought together as precisely as possible at the apex of the knife, the sharp part. This requires graduating from coarse to fine grits, and on to honing. It is crucial to decrease the pressure placed on the knife or tool so you finish using only the weight of the blade.

HAND VS. MECHANICAL SHARPENING

Each system has its pros and cons, and much of it is contingent on the individual’s experience, skill set and patience.



with a cutting edge. This system is able to sharpen not just straight bladed knives, but also curved knives, tanto blades, fillet knives, serrated knives, gut hooks and virtually any other shape of knife blade.

MAINTAINING A SHARP EDGE

There is some confusion between honing and sharpening. Honing is the process of straightening out any minor waves or bends in the blade while only taking off minimal

The primary benefit of the Work Sharp Pocket Knife Sharpener (WSGPS-W) and the Guided Field Sharpener (WSGF221) is these hand-held units require no electricity, which can be scarce when out in the field, woods or on the water.

Other advantages include learning a skill that can be honed over time and brings a deep sense of satisfaction. The hand-held sharpeners are portable, and provide a lower cost entry point for basic blade maintenance.

Some disadvantages relative to a mechanical system is hand sharpening takes patience, especially for beginners, as it takes time to build muscle memory to achieve highly repeatable motions for different angles.

This is where the Guided Field Sharpener really shines because it incorporates 5 stages of sharpening and honing, each with built-in angle guides for a consistent bevel across the entire blade.

The sharpening guides are purpose-built specifically for hunting knives, pocket knives and fillet knives, making easy work of sharpening flat, curved and serrated blades—as well as camp tools



such as axes, hatchets and machetes.

Want a perfect edge every time? Have multiple knives? The Combo Knife Sharpener (WSCMB) creates a precise 25° angle for outdoor knives, pocket knives, kitchen knives and serrations by utilizing power driven premium-grade abrasive belts and tapered ceramic rods.

Need to tackle multiple projects? The Original Knife & Tool Sharpener (WSKTS) is a jack-of-all-trades that can sharpen common tools including scissors, axes, hatchets, mower blades, garden shears, shovels, and most any tool

material. Sharpening actually grinds the edge to make it sharper.

Honing and maintaining the knife will increase user safety and increase the usable life of the blade. Ceramic rods are a fast and effective solution, many of which are designed into Work Sharp Sharpeners. Another great option is the fine abrasive belt that is included with the powered sharpening solutions by Work Sharp.

Sharp knives and tools may not rise to the top of the list for your next run to the hardware store but starting each job with sharp tools will help you be safe and successful. #SharpMatters **EHT**

HOT PRODUCTS

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SUREFORCE HYDRAULIC CLAMP

The SureForce Hydraulic Clamps from Mayhew Tools provide controlled force for precision clamping without effort (130 lb. force per squeeze). Steadily increase pressure with your fingertips up to 1,800 lbs. The quick-release lever is comfortable to use even when tightening. Additional features include a 360-degree rotating lever for easy access, a hardened steel break, and a profiled cold drawn steel bar. This clamp is ideal for many industrial, production and tooling applications. The SureForce Hydraulic Clamps come in two sizes, both featuring a 5-in. throat: Part No. 46140 features a 12-in. opening while Part No. 46142 features a 20-in. opening. Visit mayhew.com.



APEX U-GUARD

Non-marring, free-spinning u-GUARD tools offer protection and control on the jobsite. These patented tools allow the user to grab directly onto the drive tool while it spins freely inside the covers, increasing fastening control and significantly reducing contact from the rotating tool. The new line of u-GUARD non-marring covered tools includes bits, bit holders and nutsetters, and is now available for purchase individually or packaged in the rugged new APEX alphaCASE bit storage case. The u-GUARD non-marring cover protects from scratching or damages and the thin wall maximizes access for tight spaces. The patented technology behind u-GUARD has been proven for over 10 years in assembly manufacturing, but this is the first time that this protection is available to the construction and automotive repair industries. Furthermore, the core of the u-GUARD product line is the black oxide APEX Industrial screwdriving bit, featuring full-body design for greater durability and optimized tip geometry for best fit. Visit apexbits.com.



DIABLO CARBIDE RECIPROCATING SAW BLADES

Trailblazers in the cutting tool industry, Diablo unveils a full-range line of carbide reciprocating saw blades that delivers up to 50x longer cutting life, according to the manufacturer. The full breadth of range consists of six specific carbide-reciprocating blades individually designed and engineered for specific cutting applications, ranging from clean or nail-embedded wood, general purpose wood and metal, to all thicknesses of metals such as rebar, stainless steel and cast iron. By providing greater durability and cutting performance than standard bi-metal reciprocating blades, the new Diablo blades make the pro more productive on the jobsite. The blades feature enhanced carbide tip-to-blade connection for extreme impact resistance in some of the toughest cutting situations. The one-inch oversized blade body creates straighter cuts with less vibration to protect the carbide teeth while Diablo's proprietary Perma-SHIELD non-stick coating for less gumming and friction allows the blades to cut extreme materials with ease. Diablo offers the blades in a variety of sizes, 6, 9 and 12 inches. Visit www.diablotools.com/ recip.



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