

Routers in Review | New Cladding Options

# Extreme How-To

The Enthusiast's Guide to Home Improvement

## STONES & PAVERS FOR OUTDOOR PROJECTS

**PLUS:**

NATIONAL HARDWARE  
SHOW 2018 PREVIEW

SOLID SURFACE FOR  
CREATIVE DIY'ERS

CREATIVE METALWORK TO  
DECORATE YOUR YARD

WHY IS MY  
ENGINE TICKING?

May 2018 | ExtremeHowTo.com

\$5.99

05>



0 74470 03600 5







**TG**  
**KIK**  
**PRO SERIES**

[www.MyTGTools.com](http://www.MyTGTools.com)

**YOUR ONE SOURCE SOLUTION**

**FASTER  
EASIER  
CLEANER**

**KIK® Forstner Bit**

**KIK® HS Brad Point**

**KIK® Spade Bit**

**135° Split Point start from Contact  
3-flat shank, less chuck slippage**

**Concrete**

**High Speed**

**Titanium  
Coated  
High Speed**

**Heavy Duty**

**Solid Cobalt**

**S&D**

**Stronger, Faster  
Less Walking**

**General Purpose**

**Longer Lasting**

**Heavy Duty  
Steel Usage**

**Heavy Duty  
Steel Usage**

**Special Use Heavy  
Duty Steel Usage**

**[www.MyTGTools.com/kik1.php](http://www.MyTGTools.com/kik1.php) 1-800-687-4122**

**TG® Tools • 1010 Cedar Ave. • St. Charles, IL 60174 • ph 800-687-4122 • fax 630-584-4722**





 **BlueDevil**  
PRODUCTS  
STOP LEAKS PERMANENTLY. MAXIMIZE PERFORMANCE.

*When the hard part repair  
isn't an option...*

**[www.gobdp.com](http://www.gobdp.com)**



2018 bluedevil products | all rights reserved





**BlueDevil<sup>®</sup>**

DO IT YOURSELF | EASY TO USE  
**POUR-N-GO!**

# **OIL STOP LEAK**

**PERMANENT REPAIR • GUARANTEED**

**REPAIRS OIL LEAKS IN  
GAS OR DIESEL ENGINES**

**★<sup>1</sup> In The  
Country!**

Reparador para Fugas de Aceite  
Sella Permanentemente - Garantizado

8oz. • (237ml) • MADE IN U.S.A. • PART #49499





# REDEFINES WHAT **GREASE** CAN DO.

From the maker's of the Original PB B'laster, the #1-selling penetrant since 1957, comes a new approach to grease.

B'laster specialized, premium-grade greases meet the standards of marine, automotive, farming and construction professionals. Whether you need corrosion protection, high-temp lubrication or water resistance, each B'laster grease formulation is carefully engineered to work harder, last longer and protect better.



[www.BlasterCorp.com](http://www.BlasterCorp.com)

Check availability at





WORK IT LIKE A PRO  
**BLASTER**  
SINCE 1957

WORK IT LIKE A PRO  
**BLASTER**  
WATERPROOF  
**MARINE GREASE**

- Unique Waterproof Formula
- Long-Lasting Lubrication for Severe Marine Applications
- Protects Equipment from Rust & Corrosion

NLGI #2

WORK IT LIKE A PRO  
**BLASTER**  
PRO-GRADE  
MULTI-PURPOSE  
**GREASE**

- Superior General Purpose Lubrication
- Protects Against Rust & Corrosion
- Excellent Water Resistance

NLGI #2

WORK IT LIKE A PRO  
**BLASTER**  
ORIGINAL PB  
PENETRATING  
**GREASE**

PB BLASTER PENETRANT  
INFUSED GREASE

- High-Quality Synthetic Grease
- Time-Release Penetrating Action
- Superior Grease Fitting Lubrication & Protection

NLGI #2

WORK IT LIKE A PRO  
**BLASTER**  
EXTRA TACKY  
**RED GREASE**

- Maximum Anti-Wear & Extreme Pressure Protection
- Resists Thinning in High Temps (550°F dropping point)
- Protects Against Rust & Corrosion

NLGI #2

WORK IT LIKE A PRO  
**BLASTER**  
MAXIMUM  
HEAVY-DUTY  
**GREASE**

- Excellent High-Temp Lubrication
- Superior Corrosion Protection
- Does Not Drip in Severe Conditions

NLGI #2



# CONTENTS



**32**



**50**

## FEATURES

- 32** **Stones & Pavers for Outdoor Projects**  
A Natural Look for your Backyard Retreat

- 50** **Solid Surface for Creative DIY'ers**  
Oh, the Things You Can Do!

- 42** **National Hardware Show 2018 Preview**

## EVERY ISSUE

- 6** **From the Editor**  
**71** **Advertisers Index**

## COLUMNS

- 8** **Q & A**  
**12** **Tool School**  
Routers in Review  
**26** **Skill Savvy**  
Art Designed for Outdoor Living

## DEPARTMENTS

- 60** **Material Market**  
New Options in Cladding  
**66** **Everything Auto**  
Why is My Engine Ticking?  
**68** **Hot Products**



Cover photo © Mark Herreid via 123rf.com





THE NEW DRIVING FORCE IN THE FASTENER INDUSTRY



**Get to know our  
quality products**

**Construction Screw  
Universal Screw  
Fine Screw  
Re-Fine Screw**



***For all your fencing needs!***

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



tf: 855-895-7096 | fax: 807-623-6224 | [www.u2fasteners.com](http://www.u2fasteners.com) | [sales@u2fasteners.com](mailto:sales@u2fasteners.com)



Since we are well into the new year, I thought I'd use this editor's letter to review which energy-efficient home improvements will qualify for a U.S. Federal tax credit in 2018. Remember those? Prior to 2017, Federal tax credits were marketed as a big incentive for people to upgrade their home with energy-saving systems and appliances.

Well, they say all good things must come to an end, and most of the Federal energy credits for homeowners expired at the end of 2016, with no apparent signs of renewal for 2018.

I did find a couple surviving Federal credits, but they're for big-ticket items. For example, there's an Investment Tax Credit for Solar. This credit applies both to solar panel systems and solar hot water systems, and it's worth 30 percent of the cost of buying and installing the system. You have until the end of 2019 to claim the 30 percent benefit, after which the value gradually reduces until 2022, when it goes away entirely for homeowners.

Homeowners who purchased and installed a geothermal heat pump on or after January 1, 2017, are eligible for a Federal tax rebate equal to 26 percent of the purchase and installation cost of the system. Also known as ground-source heat pumps, these are high-efficiency heating, ventilating, and air conditioning systems that can greatly reduce energy consumption compared to traditional air-source heat pumps or air conditioners. The current 26-percent incentive will last until 2020, when it will drop to 22 percent, until it expires in 2022.

There's also a Plug-in Electric Drive Vehicle Credit (IRC 30D) if you're buying a new car. Most electric cars are eligible for this credit, which reduces your Federal tax burden by \$7,500. However, this credit has a "phase out" built into the program that is dependent on the manufacturer of the car. Once a manufacturer has sold 200,000 eligible electric cars, those cars won't be eligible for the tax credit. And Tesla, one of the leading electric car companies, aims to produce 500,000 vehicles by the end of 2018. So, if you want to drive a Tesla that qualifies, you might want to act fast.

Although the Federal tax credits for many energy-efficient home improvements have dried up, it's still a good idea to check for similar incentives from state governments and local utilities. Across the country, there are plenty of state and local tax credits for electric cars, and this includes credits for buying cars as well as for installing electric car chargers at your home. Other common financial incentives come from local utilities. Many utilities provide rebates for purchasing energy-efficient home appliances, building products, electronics, water heaters, and heating

and cooling equipment. So, if you're considering an energy-efficient home upgrade this year, don't forget to research all available options—Federal, state and local—for recouping your hard-earned investment.



#### EDITOR-IN-CHIEF

Matt Weber  
mweber@latitude3.com

#### ADVISORY BOARD

Rob Robillard  
Larry Walton  
Kathy Ziprik  
Mark Clement

#### CREATIVE DIRECTOR

Wesley Glassco

#### CIRCULATION

Jennifer Pentecost

#### PUBLISHER

Jeremy Hollingsworth  
jhollingsworth@latitude3.com

#### ADVERTISING SALES MANAGER

Taylor Martin  
tmartin@latitude3.com

#### ADVERTISING SALES

Sam Bullard  
sbullard@latitude3.com

William Parks  
wparks@latitude3.com

#### ONLINE MEDIA ASSISTANT

Sonia Buchanan

#### BUSINESS MANAGER

Dusty Statham

#### SUBSCRIPTIONS

Customer Service  
888-587-8911

#### PRESIDENT

Trent R. Boozer

#### EXECUTIVE VICE-PRESIDENT

Chad Gillikin

Extreme How-To is published by

**LATITUDE3 MEDIA GROUP, LLC**

2300 Resource Drive, Suite B

Birmingham, AL 35242

Phone 205.949.1600 • Fax 205.949.1601

www.extremehowto.com

Extreme How-To (ISSN 1540-5346) is published and distributed monthly to DIY home improvement enthusiasts by Latitude3 Media Group, LLC, 2300 Resource Drive, Suite B, Birmingham, AL 35242 (executive and editorial offices). All rights reserved. Neither this publication nor any part of it may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without permission of Latitude3 Media Group, LLC. Subscriptions: U.S. and possessions: 1 year (9 issues) - \$18.97; foreign, 1 year (9 issues) - \$32.50. U.S. funds only. POSTMASTER: Send address changes to: Extreme How-To P.O. Box 4320, Oregon, IL 61061. SUBSCRIBER SERVICE: To order a subscription or change your address, write to Extreme How-To P.O. Box 4320, Oregon, IL 61061, or call 888-587-8911; or E-mail to ehtw@pubdmg.com; or visit www.extremehowto.com. To order back issues, call (205) 949.1603.

The information in **Extreme How-To's** editorial content is intended to explain and simplify home-improvement tasks. Tools, products, materials, techniques, building codes and local regulations change; therefore, **Latitude3** assumes no liability for omissions, errors or the outcome of any project. The reader must always exercise reasonable caution, follow current codes and regulations that may apply, and is urged to consult with a licensed professional in doubt about any procedures. **Printed in the USA**



**CABINET  
ASSEMBLY  
SCREWS**



**CABINET  
INSTALL  
SCREWS**



**HARDWARE  
SCREWS**



**EXTERIOR  
SCREWS**



**POCKET  
HOLE  
SCREWS**



**DRAWER  
FRONT  
ADJUSTING  
SCREWS**



**SCREW  
KITS**



**& MORE**



**YOUR ONE STOP  
WOODWORKING SHOP**

(800) 743-6916 • [www.quickscrews.com](http://www.quickscrews.com)



**Q:** What costs less, a concrete patio or a paver patio?

**A:** Generally speaking, a concrete patio will cost less per square foot than a paver patio. A decorative concrete slab (stamped and tinted) will cost more than a plain concrete slab but will still probably cost less than the installed cost of a paver patio.

However, there are a few other things to consider than only the per-foot cost. For example, a large concrete patio usually requires delivery by a concrete truck, meaning it requires professional installation which you'll have to factor into the price. A paver patio can be installed by a do-it-yourselfer, which can save considerable labor costs if you don't pay someone else to do the work. The downside, however, is that installing a paver patio is more labor-intensive because of all the site prep involved.

Another factor is maintenance. Poured concrete patios require little maintenance (resealing every 2-3 years to extend the life of the slab), but they're expensive to repair once major cracks appear (virtually inevitable over time). In the long run, the cost of repairing the concrete might offset the upfront savings of using the material. Paver patios require more maintenance (such as weeding) but are also easier to repair, and they make it easier to expand the patio.

## Your Healthful Home...Our Priority!






### Mold Detection and Protection



**AVAILABLE  
AT YOUR  
LOCAL**



#### 5-MINUTE MOLD TEST

- No need for costly inspectors
- Like no other DIY test on the market!
- Detects over 32 unhealthy mold species...including *Stachybotrys chartarum*
- Professional Consultation Included

**Results  
in as little  
as 5  
minutes**

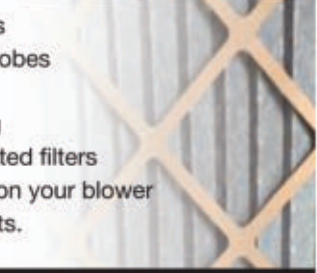
#### AEROSOL FOGGER

- Hard-to-reach places
- Ideal for use in attics and crawl spaces
- Safe on all surfaces
- Restores indoor air quality
- Anti-allergen




#### SPRAY CLEANER

- EPA Registered
- Innovative enzymatic formula
- Independently tested & proven
- Kills in minutes
- Months of lasting protection
- Safe for your family and pets



#### MOLD MAGNET

- Enhances standard HVAC filters
- Captures nearly 1000x the microbes compared to untreated filters
- NOT a tacifier – Patent Pending
- Use less-costly, lower MERV-rated filters
- Helps decrease back pressure on your blower
- Non-toxic, All-natural ingredients.



[www.HealthfulHome.com](http://www.HealthfulHome.com)





# GOOD LOOKS DON'T FALL FAR FROM THE TREE.

Dream Home ULTRA X<sup>2</sup>O floors  
look and feel so much like real hardwood  
it's hard to believe they're laminate.

Dream Home  
ULTRA X<sup>2</sup>O

- **2X more water-resistant**  
than standard laminate flooring\*
- GREENGUARD Gold or FloorScore  
certified for indoor air quality
- Stands up to pets, kids and heavy  
foot traffic
- Easy to install and easy to clean

\*Based on EN13329 test for thickness swell requirement for laminate flooring.

Call or go online for a FREE 2018 FLOORING CATALOG • 1-800-HARDWOOD • [lumberliquidators.com](http://lumberliquidators.com)

**LUMBER  
LIQUIDATORS**™



**Q:** Is it okay to dispose of scrap pressure-treated lumber by burning it?

**A:** Burning treated wood is not recommended. According to the wood treatment experts at Wolmanized Wood, "Dispose of treated wood by ordinary trash collection. Treated wood should not be burned in open fires or in stoves, fireplaces or residential boilers because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations."

**Q:** Is it necessary to remove baseboards when installing hardwood flooring?

**A:** It is not absolutely necessary to remove baseboards to install new hardwoods, but remember that wood floors require an expansion gap of 1/2 inch along the surrounding walls to accommodate expansion and contraction with changes in moisture and humidity. You will need to conceal the gap after installing the flooring, so if you leave the baseboards in place, you'll need to cover the gap along the baseboards with additional floor molding. Since the extra molding will conceal part of the baseboards' face, this method works best with tall baseboards. If you remove the baseboards during floor installation, you can replace the baseboards over the expansion gap without additional floor molding. **EHT**

# ULTRA QUIET

Air Compressors



UP TO  
**30% QUIETER**  
THAN OUR  
COMPETITORS!



**POWERFUL**  
**OIL-FREE**

**LONG LIFE**  
**LIGHTWEIGHT**

[www.CaliforniaAirTools.com](http://www.CaliforniaAirTools.com)





# 40V LITHIUM

## THE CORDLESS REVOLUTION IS HERE.



### SURRENDER NOTHING BUT GAS.

RYOBI 40 Volt Self-Propelled mower. Raw lithium force delivers unrelenting torque and GAS-LIKE POWER™. Featuring a brushless motor, 5.0 amp hour battery and rear-wheel drive, this mower is optimized for peak performance. RYOBI, expanding the horizons of mowing, to outlast your yard. Part of the 40V system.



@RYOBIOutdoors



RYOBITools.com



# Routers in Review

Add Detail to Your Woodwork



as any application where the tool cuts from outside toward the board. Fixed-base models have less moveable parts than plunge routers, which can make them easier to use with accessory guide bushings. The latest compact trim routers (also called palm routers) take advantage of the fixed-base design to cut down on tool weight, which makes them easy to maneuver.

Plunge routers can do everything a fixed-base can do, and more, but they're generally larger and heavier, and not as easy to use. The motor and cutter head slide up and down guide bars attached to the base. A plunge router's primary advantage is its ability to begin the cut in the center of a piece of wood, where the router bit is lowered or "plunged" into the work piece. The plunging action makes the tools suitable for routing mortises and cut-outs in the center of stock. Plus, a plunge router can be used as a fixed-base router by simply locking the motor in the desired position along the plunge bars.



*With an assortment of router bits at your disposal, an electric router can be used to give intricate detail to virtually any woodworking project.*

**R**outers are the most popular power tools among woodworkers and DIY'ers for creating a decorative profile along the edge of a wood piece. With a router you can create custom house trim, add detail to furniture projects, or fashion shop-made picture frames.

"Self-piloted" router bits designed for edge finishing have a ball-bearing wheel that guides the cutter along the edge of the workpiece. Using a router equipped with a round-over bit, you can ease the sharp edge of a table-top. With an ogee bit, you can give the edge of a wood strip the decorative swoop seen on baseboard and window trim.

Routers can do more, however,

than give shape to the edge of a workpiece. Bits that don't have a guide wheel can be used to make cuts of various shapes within the field of a workpiece. You can use a straight-cutting bit to rout a dado in a furniture panel for mounting a shelf. Or, use a dovetail bit to cut the pins and tails of drawer components to assemble classic dovetail joinery.

## ROUTER TYPES

You'll find both pros and cons to the two main types of handheld routers: fixed-base and plunge style. A fixed-base router has the tool's base plate attached in a fixed position to the motor, which is a great setup for cutting a profile in the edge of a board, as well





## KING ARCHITECTURAL METALS

LOS ANGELES  
DALLAS  
ATLANTA  
BALTIMORE

800.542.2379  
KINGMETALS.COM  
FACEBOOK  
PINTEREST  
YOUTUBE

# Details.



  
KÖNIG  
EISEN





For the startup DIY'er, *EHT* recommends beginning with a quality fixed-base router, which should tackle practically any trim application, as well provide the ability to cut rabbets and dados for furniture assembly. Over the course of many years tackling home-improvement projects, we've rarely found the need to plunge a router on a project.

A larger router might be necessary, however, for craftsmen who advance to more challenging woodworking projects. Whereas most trim routers are rated around 1-horsepower, larger routers are

*With plunge-style routers like this DeWalt DWP611PK, the bit can be lowered into a workpiece.*



## STOP FLOOR SQUEAKS

In Carpeted, Hardwood and Linoleum floors  
with **Squeeeeeek No More®**



Available at  
participating  
Big Box and  
Hardware stores



The **Squeeeeeek No More®** kit stops floor squeaks through carpeted floors using a special screw that passes safely through the carpet. When used on hardwood floors, the screw breaks 1/5 of an inch below the surface of the floor. A small hole is left that can be easily concealed with wood filler.



SCAN TO WATCH VIDEO

O'Berry Enterprises, Inc.  
800-459-8428  
patrick8742@yahoo.com  
5306 Business Parkway  
Ringwood, IL 60072  
www.floorsqueaks.com

# Zerust®

Stop Rust Before It Starts

Keep your tools in top shape with Zerust rust prevention products.

For the ultimate protection from rust and corrosion, use our:

- Drawer Liners
- Table Saw Covers
- Vapor Capsules



zerustproducts.com

Zerust Consumer Products LLC,  
Twinsburg, Ohio 44087

# Zerust®

Look for us on Facebook:  
Zerust Consumer Products





# Beautiful Wood Made Easy!



**Easy to use for DIY'ers !**

**Top rated by wood restoration professionals**

**Great for all climates in all states**

**Can be applied in direct sun in the heat of the day**

**Survives harsh snowy winters**

**Can be applied with imminent rain**

**No peeling, cracking, flashing, or sticky shiners**

**Conditions and rejuvenates wood**

**NO formula changes anticipated ever!**



**Now available  
through  
ACENET Direct**

Ask your local Ace if  
Armstrong-Clark is  
available through  
their store



**OIL BASED WOOD STAINS**

*Long Lasting, Easy to Apply, and a Breeze to Maintain*

[www.armclark.com](http://www.armclark.com)  
800-916-8211



rated for about 2-1/4 horsepower. Whether in fixed-base or plunge-style configuration, these more powerful routers will be necessary to turn bigger bits (which have

larger 1/2-in. shafts rather than standard 1/4-in., requiring bigger collets). These larger, more powerful routers are necessary for serious woodworking applications that



*An easy-to-remove router base is a welcome feature when it's time to change the bit.*

use large shaper bits for jobs like cutting rail-and-stile cabinet door components.

## KEY FEATURES

EHT recommends perusing the router aisle at the hardware show with an eye on bit visibility. This is an important feature when cutting to make sure the tool is routing as it should be. A guard window (which prevents wood chips from flying around) should afford unimpeded sight of the router bit.

Some router models have two handles and a wide base, which allows for a large window. The advantage of the two-handled base's wide footprint is its flat, broad bottom that helps prevent the router from tilting when cutting.

Many newer trim routers have a smaller base without handles. This design makes the router somewhat more susceptible to tilting, but a steady-handed operator can use these routers with only one hand, and visibility is a little more accessible as a result.

Another nice feature is an integrated work-light that many routers use to illuminate the cutting action, which invariably



Be Secure. Choose the Right Footing for the Job.

**S**afety and liability issues face construction professionals and do-it-yourselfers daily. Recent deck failures and improper installation of footings have prompted building code changes across North America.

These upgraded codes are rigorously enforced. Check your local requirements and use the right size footings for the job. Reduce risk of liability. Increase safety now and in the future.

**Bigfoot Systems offers sizes that will fit all 6" to 18" construction tubes.**

*Please visit our website to view all Footing Form sizes.*

- Combined volume of concrete for the BF28, BFT10/10" Cardboard Construction Tube: **5.43 cu. ft**
- Combined volume of concrete for the BF24 and BFT10: 10" Cardboard Construction Tube: **4.68 cu. ft**





800-934-0393
bigfootsystems.com



# Safe digging is no accident



**One easy click or call to 811 gets utility lines in your yard marked and helps protect you from injury and expense.**

**Know what's below.  
Call 811 before you dig.**

Colorado 811, Sunshine 811, Georgia 811,  
North Carolina 811, Ohio Utilities Protection Service,  
Pennsylvania 811, Tennessee 811

**[www.call811.com](http://www.call811.com)**



# PERMA-CHINK<sup>®</sup> SYSTEMS, INC.

## Beautify and Protect Your Dream



### RESTORE

Powerful restoration products to remove old finishes and make dirty or weathered wood look like new.



### PRESERVE

Special purpose preservatives to protect against termites, insects, wood rot, mold and mildew.



### STAIN

Finishes to protect and bring the beauty of your decks, interior and exterior walls, millwork and cabinets.



### SEAL

Flexible sealants for every weather-proofing job around your chinked or chinkless style log home.



### CONTRACTOR REFERRALS

Ask for a referral to the experienced applicator near you.

**1-800-548-3554**

FREE WORKSHOP -  
CATALOG - PRODUCT  
SAMPLES

Sign up for Monthly Specials  
on

**www.permachink.com**

## TOOL SCHOOL

occurs in the shadows beneath the motor.

Variable speed control is a common feature among plunge routers, and on certain fixed-base models. This feature allows you to adapt cutting speed to the wood and router bit, and it keeps the speed consistent even when cutting fast into the grain. However, most trim bits spin at a high rate of speed, and variable speed is primarily handy for slowing the cutting speed when using large bits.

Make sure the router has a fine-adjustment device that allows you to alter the cutting depth by just a hair if necessary.

A guide fence for a router is another handy item that works just like a rip gauge for a circular saw. The fence helps to hold the router on a straight path while making grooves or rabbets parallel to the edge of the wood.

### HOLD TIGHT

The shank of a router bit is held to the router inside a hollow collet,



*Look for a router with features such as easy depth setting, like this Bosch Colt router that uses a simple thumb wheel to make micro-adjustments to the bit.*

which is tightened around the shank by the collet nut. Insert the bit as far as it will go, then back it out so the cutters are 1/8 to 1/4 inch away from the collet nut. Use a wrench to tighten the nut so it doesn't slip during operation,

## ROCKLER PRO LIFT

*Designed for use with Rockler and Bench Dog router tables, the Rockler Pro Lift makes height adjustments and bit changing faster and easier than ever. Raise your router fast with the Quick-Gear, then downshift to the precision gear for fine adjustments. With a push-*



*button release, the Snap-Lock insert ring allows for easy bit changes. The Pro Lift comes with one insert ring, but woodworkers will be able to buy an assortment of 5 additional insert rings. Coming soon, is a "Large Plate" version of the Pro Lift that fits 9-1/4x11-3/4-in. table openings (including Kreg, Jessum, Woodpecker and more). Visit [www.rockler.com](http://www.rockler.com).*





www.MyTGTools.com

# FASTER EASIER CLEANER

## The Three Most Important Drill Bit Sets Your Customers Should Own!

### Do Them a Favor... Order Today!

### See Us at NHS Booth 7552



**KIK® Spade Bit**

**KIK® HS Brad Point**

**KIK® Forstner Bit**

**www.MyTGTools.com 1-800-687-4122**

TG® Tools • 1010 Cedar Ave. • St. Charles, IL 60174 • ph 800-687-4122 • fax 630-584-4722





An LED work light is another helpful feature to aid cutting visibility.

which will change the shape of the cut and can be dangerous to the user. However, if the collet nut is installed too tightly, you'll find it difficult to remove the bit after use.

Some older routers require using two wrenches—one to hold the shaft and the other to tighten the collet—and carpenters would typically give both wrenches a “one-handed squeeze” to turn the collet an extra 1/8 rotation after snugging the bit with the wrenches.

Newer routers require only one wrench, supplanting the second with a push-button spindle lock. Hold down the lock button while snugging the collet nut with a wrench, then give the nut an additional 1/8 rotation to secure it.

Tip: Router bits can be stubborn and get stuck, particularly if the

## Got Flats?

**Problem Solved Easily !**

Go to [www.stopngo.com](http://www.stopngo.com) and do it the more effective way.



The Stop & Go Tire Plugger installs mushroom shaped rubber plugs into tubeless tires while staying on the wheel. The mushroom head seals on the inner wall allowing no air to escape. You can plug all of your tubeless tires faster, easier, and more effectively with **The Tire Plugger**.



Dealer Inquiries Welcome

Call 1 (800) 747-0238

OR

Email [info@stopngo.com](mailto:info@stopngo.com)



3610 Thunderbird Ln., Crystal Lake, IL 60012

**Stop plugging your tires the hard way!**



## Fix Driveways, Sidewalks, Patios



- Beautify your driveway
- Stop trips and falls
- Protect your slab
- Blocks weeds, water

**DIY easy install!**



A product of the R&D Workshop  
League City, TX, USA

Available at:



Made in USA, US Patent 8132380



**TRIM-A-SLAB.COM**

**832-618-3726**



router has an older collet that isn't self-releasing. The problem with using pliers to remove them is you risk damage to the bit—and they're not cheap. If you have a bench vise, like a Black and Decker Workmate, then unplug the router, loosen the collet nut and clamp the bit between the wooden jaws of the vise. Pull the router straight up while twisting it to slide it off the bit.

*This brushless 18V router from Ridgid came with a guide fence that works like a rip gauge to hold the router on a straight path while making grooves or rabbets parallel to the edge of a workpiece.*



**SHELVES THAT SLIDE**

- Custom Made for Your Cabinets
- Kitchens • Pantry • Bathrooms
- Limited Lifetime Warranty
- Baltic Birch Construction
- 100 Pound Capacity

**1-800-598-7390**  
[www.shelvesthat-slide.com](http://www.shelvesthat-slide.com)  
**Order On-Line**

**Custom pull out shelves  
and Kitchen cabinet accessories**

**Call or email for a free catalog**

**MULTI-SURFACE**  
**FROGTAPE**  
 Keeps Paint Out. Keeps Lines Sharp.

**DELICATE SURFACE**  
**FROGTAPE**  
 Keeps Paint Out. Keeps Lines Sharp.

**Keeps Paint Out.  
Keeps Lines Sharp.®**

To learn what makes FrogTape® different, visit [frogtape.com](http://frogtape.com)





*This photo shows the importance of routing test strips before making production cuts. The router bit shown was used to shape all three of the molding strips—but notice how the thickness of the upper and lower lips change from strip to strip. The different shapes result from slight changes to the depth setting of the router bit.*

NEED FOR SPEED

In general, it's best to refer to the manufacturer's suggestions for the recommended cutting speed of various router bits. The performance of the routing action is affected not only by cutter speeds, but also depth of cut, feed rate, and the hardness of the stock. In general, large router bits

need to cut at a slower speed for safer operation. Smaller bits should spin faster. Refer to the manufacturer's guidelines but treat the speed recommendation as a rough estimation—a good place to start—and then adjust the speed to optimize your results as you practice with the bit.

Shown here is a typical recommendation for router bits of various size:

| Router Bit Diameter | Maximum Speed          |
|---------------------|------------------------|
| Up to 1"            | 22,000<br>- 24,000 rpm |
| 1" to 2"            | 18,000<br>- 22,000 rpm |
| 2" to 2-1/2"        | 12,000<br>- 16,000 rpm |
| 2-1/2" to 3-1/2"    | 8,000<br>- 12,000 rpm  |

PASS THE TEST

So, you're ready to start routing... The EHT staff highly recommends routing a few test pieces on scrap material before starting every project. Not only will this extra step get you familiar with how to handle the tool, but to get the exact shape of cut you want is not as simple as it sounds. Any slight deviation in the depth adjustment of the bit will translate to a different shape on your workpiece. For example, an ogee bit can rout a swoop in the edge of



*DIY tip: Beginning and finishing a pass with a router can result in messy cuts where the bit enters and exits the workpiece. To solve this, the EHT staff typically routes a workpiece prior to cutting it to its final length, so we can trim off the messy ends as waste.*

A large advertisement for T-REX tape. At the top is a green T-Rex head with its mouth open, showing sharp teeth. Below it, the words "T-REX" are written in large, orange, distressed block letters. Underneath that, "FEROCIOUSLY STRONG TAPE" is written in white. To the left, the text "ALL WEATHER", "WORKS LONGER", and "HOLDS STRONGER" is stacked in orange. At the bottom right is a roll of the tape, which has a black and orange patterned design with the T-REX logo and text. At the very bottom, in small white text, it says "than standard duct tapes" and "©Shutten Brand, LLC 2016/06/24".



Get 18% OFF\*  
your order through  
**diy.sepro.com**  
using discount code  
**DIYWATER18**

# Professional Pond Solutions for the Do-it-Yourselfer



For over 20 years SePRO has assisted pond and lake owners in the stewardship of their water resources with innovative easy-to-use solutions. DIY products to control aquatic weeds, algae and cyanobacteria—and improve water quality. Use discount code **DIYWATER18** and receive 18% off\* your next web order.

Not a Do-it-Yourselfer? Call us and we'll give you the name of a professional applicator in your area. Contact an SePRO Aquatic Advisor, at **866-869-8521**.

Visit **diy.sepro.com**



Always read and follow label directions. \*Discount offer valid through 10/01/2018 only on web orders from [diy.sepro.com](http://diy.sepro.com). Sonar and SeClear G Algaecide and Water Quality Enhancer are registered trademarks of SePRO Corporation. Phoslock is a registered trademark of Phoslock Water Solutions, Ltd. Copyright ©2018 SePRO Corporation





board, leaving a square lip at the upper and lower corner of the work piece. The size of those lips will change depending on the bit's position in the router. Raise the bit, and the lower lip will get thicker. Lower the bit, and the upper lip will get thicker. It's difficult to tell the exact shape of the cut you'll get until you put the router in action on a test piece. You can then make micro-adjustments to the bit's cutting depth until you get the desired look to apply to all your production cuts.

*A router installed upside-down in a router table can provide an unobstructed view of the cutting bit, and also allow the user to rout small, intricate pieces that would otherwise be difficult or impossible to shape with a handheld router.*



## SAVE UP TO 50% OFF BIG BOX STORE PRICING!

**FLEX CABINETS INTRODUCES ALL NEW USER-FRIENDLY WEBSITE, A ONE-STOP-SHOP FOR ALL YOUR CABINET NEEDS**



Whatever your design style, Flex Cabinets offers a wide kitchen cabinet selection in every style of kitchen. Flexcabinets.com also offers many kitchen accessories including drawers, drawer slides, hinges, drawer fronts, knobs, hardware, mouldings, carved mouldings, lazy susans, garbage and recycling pullouts and so much more. There are currently over 10,000 products on the new website.

Flex Cabinets is currently used by single and multi-family builders, designers, kitchen & bath dealers, architects, building developers as well as consumers. Buyers will benefit from the tremendous buying power offered to Builders, Developers and Multi-Family Management Companies.

*Think Flex Cabinets for all your cabinet needs— kitchen, home office, closets, wall units or any custom cabinet project.*

**OUR GUARANTEE... NOBODY BEATS FLEX CABINET PRICING!**

22 EAST LAFAYETTE ST. - HACKENSACK, NJ | (201) 487-8081 | (888) 445-8939 | SALES@FLEXCABINETS.COM



## SET THE TABLE

A popular accessory for routers is a router table, which can convert your router into a miniature molding machine. You can fix the position and height of the cutting bit and pass stock through the cut-

ter against a fence or jig, rather than running the router over the stock. The table gives the user an unobstructed view of the work, and makes it possible to rout small, intricate pieces where a router would otherwise be awk-

ward to push over the stock. A rip fence, a miter gauge, and fingerboards can help you keep the workpiece in place on the router table during operation. **EHT**

## NEW ROUTERS

### THE BOSCH GKF125CEN COLT 1.25-HP PALM ROUTER

The Colt trim routers from Bosch Power Tools have been popular for years, and the latest model is the GKF125CEN Colt 1.25-hp (Max) Palm Router. Driven by a 7.0-amp motor, the new model provides maximum comfort with an ergonomic soft-grip palm handle design. Impressive power allows the Colt to easily



round-over edges and execute pattern cuts. It features advanced electronics with soft-start technology and variable speed (16,000 to 35,000 rpm), and Constant Response Circuitry helps maintain speed under load for consistent performance. The router includes the rugged 360° (non-split) PR101 Bosch aluminum fixed-base housing, which

accepts bits up to 1-5/16-in. in diameter. The depth-adjustment dial (with both standard and metric scales) allows easy and precise adjustment, and LED lighting provides an enhanced view of the bit and work area. The router also includes a ball-joint cord swivel for easy cord positioning. Visit [www.boschtools.com](http://www.boschtools.com).

### RYOBI ONE+ 18V PALM ROUTER

The cordless and compact Ryobi ONE+ 18V Palm Router has micro-adjustment for precise depth control and cuts over 600 linear ft. per charge. With 29,000 RPM performance, it delivers



fast, powerful routing for a wide range of trim applications. The quick-release lever for depth adjustment makes this router easy to use, and LEDs illuminate the work surface for increased cutting visibility, so your cuts are always precise. Visit [www.ryobitools.com](http://www.ryobitools.com).

### RIDGID BRUSHLESS 18V COMPACT ROUTER

Eliminating the cord from the equation, Ridgid introduces the first Brushless 18V Compact Router (R86044B). The brushless motor delivers more run-time and a longer motor life for corded-like performance.



Features include a variable speed dial (from 17,000 RPM to 25,000 RPM), a micro-adjust dial for easily setting depth, soft start technology, LED work light and a quick-release lever for easy removal of the motor housing from the base. Visit [www.ridgid.com](http://www.ridgid.com).

### DEWALT DWP611PK COMPACT ROUTER WITH PLUNGE BASE & BAG

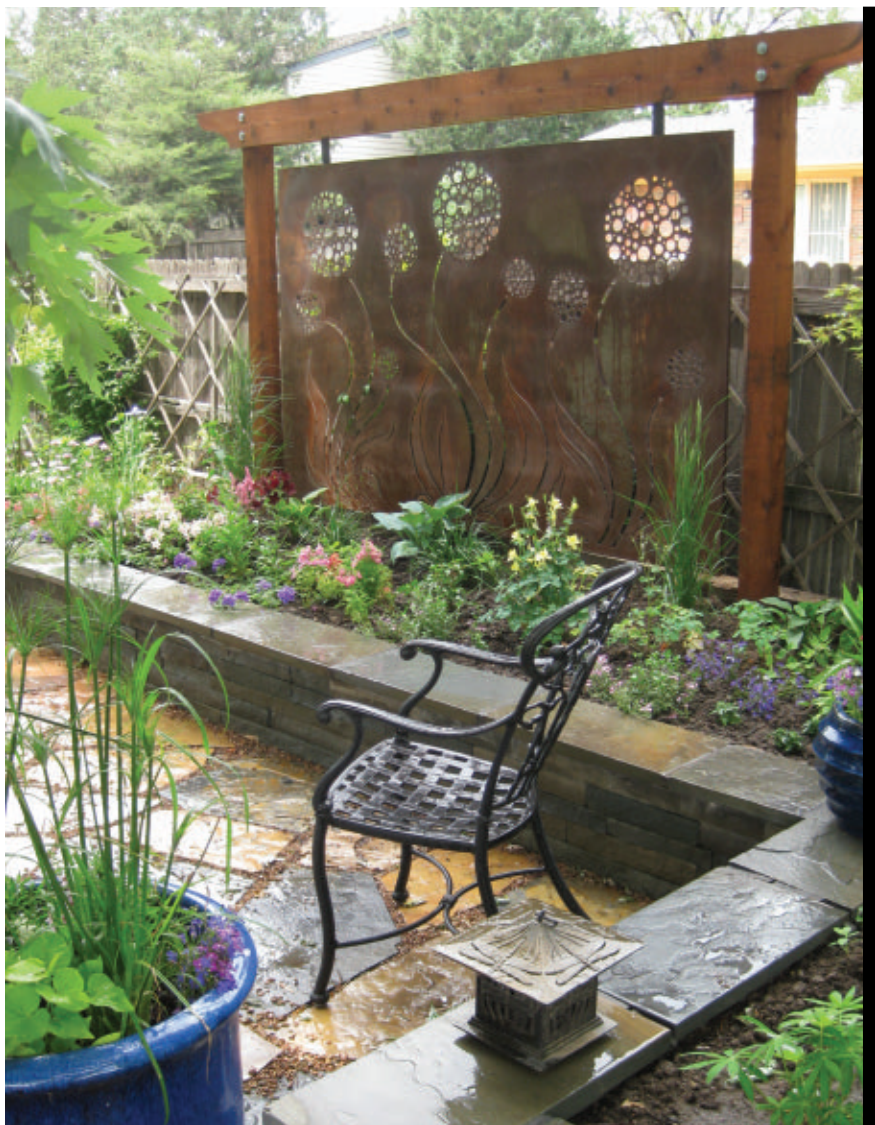
This dual option from DeWalt offers both router styles in a single kit. Combining power and performance with comfort and convenience, the DeWalt 1.25 HP Compact Router with Plunge Base and Bag has a durable 1.25-hp motor to tackle the most demanding applications. Features include variable speed control and a soft-starting motor with full-time electronic feedback to maintain motor speed throughout the cut. Dual LEDs and a clear sub-base ensure maximum visibility in operation. The motor can be switched quickly and easily between fixed and plunge bases. When used with the fixed base, an adjustment ring enables controlled bit depth changes to within 1/64 inch. The plunge base incorporates a fine-tune adjustment rod for precise depth setting. The large, low-pressure spindle-lock button allows for comfortable, single wrench bit changes. Visit [www.dewalt.com](http://www.dewalt.com).





# Art Designed for Outdoor Living

Creative Metalwork to Decorate your Yard



By Blair Weillnau

you can become the next backyard artist. “Welding is a lot easier than you think,” says Will Hyde, do-it-yourselfer, artist and founder of Mile High Landscaping in Denver. Mile High Landscaping is a firm dedicated to creating outdoor spaces for enjoyable living. Hyde credits his mechanical and artistic mind for helping him maneuver his way around a welding machine. He practiced his craft and played with different ideas until he became more comfortable. “It’s important for me to create outdoor spaces that my clients want to show off and want to spend time in. Life can be stressful. There isn’t a more peaceful way to unwind, than to sit outside and relax.”



**B**uilding your own backyard oasis is simple with a plasma cutter and welding machine. With these machines, you can fix your broken metal gate, build a trellis for your garden or create customized backyard art. Intricate furniture and one-of-a-kind sculptures can be easily designed, welded and pieced

together to create unique outdoor living spaces. With a plasma cutter and a welder, you can bring the indoor lifestyle to an outdoor porch or deck. Think of it as adding an extra room to your home, without adding the square footage.

Welding shouldn’t be intimidating. With the right gear, trial and error, and an instructional class,

First and foremost, Hyde is an artist who thinks outside the box when designing landscape projects. He started welding customized pieces after noticing the demand for outdoor art. He creates functional metal structures like gates, arbors, trellises and water features that have an artistic flair. Hyde knows that working



# EASY ~~DOES~~ DID IT.



## Forney EASY WELD™

### GO AHEAD, BUILD IT!

#### MULTI-PROCESS WELDER

Forney Easy Weld 140 MP  
MIG, Stick and TIG

\$369.99



#### PLASMA CUTTER

Forney Easy Weld 20 P  
Simple, efficient and  
cuts up to 1/4"

\$369.99



#### FLUX-CORED INVERTER WELDER

Forney Easy Weld 140 FC-i  
Superior performance  
and efficiency

\$199.99



#### STICK/TIG WELDER

Forney Easy Weld 100 ST  
Under 10 pounds, welds  
up to 1/8" electrodes

\$179.99



#### FLUX-CORED WELDER

Forney Easy Weld 125 FC  
Proven transformer  
technology

\$179.99



Visit [forneyeasyweld.com](http://forneyeasyweld.com) to learn more about our new machines.

**FORNEYEASYWELD.COM**







with metal ensures a strong and sturdy piece that lasts longer than other materials.

"Increasingly, we were getting more clients who were requesting outdoor pieces of art to accentuate their landscaping projects. I found that combining my artist ability with a welding torch and a plasma cutter was much easier and less expensive for the client. I was first intimidated by the thought of welding, but once I opened the box and started practicing, I found that welding is truly an easy hobby that anyone can do."

Hyde is armed with a Forney 190 multi-process (MP) welding machine that is a perfect fit for any do-it-yourselfer or experienced welder.

## ONETIME® LIGHTWEIGHT SPACKLING 4 PIECE KIT!

**NEW!!**



### EACH KIT INCLUDES:

Premium, pre-mixed formula that saves time, **spreads easily**, and is paintable in minutes. It fills holes in drywall, plaster, stucco and wood in one application with **no shrinking, cracking or sagging**. The unique square tub is designed and contoured to work with a putty knife for easy use. The 4 piece kit includes an aluminum wall repair patch, sandpaper and spreader in the lid.



**Red Devil**

**BOOTH #5606**

- Wall Repair Patch
- Sandpaper
- Spreader
- Spackling

4175 Webb Street • Pryor, OK 74361 • Customer Service: 1-800-423-3845 • Fax: (918) 825-5761 • [www.reddevil.com](http://www.reddevil.com)



He enjoys the Forney 190 MP because the 3-in-1 function allows him the ability to work on any scale project or metal thickness. The benefit of having a 3-in-1 is the ease of switching between MIG, Stick and TIG welding processes. The multi-process machine is also spool-gun capable for aluminum welding. Hyde enjoys the adjustability, long power cord and lead he gets with the Forney 190 MP. He says, "It runs very smooth, leaving a cleaner weld line with no burn-through."

With the use of the new Forney 190 MP, Hyde's creations convert a simple backyard into a unique outdoor retreat. From planters, water features, and sculptures to furniture and art, the comforts and aesthetics of being inside can now be relocated outside. "Outdoor art



***Build it Yourself ...  
and SAVE!***

**Large Selection of Do-It-Yourself Kits**  
online store at [www.shedkitstore.com/info](http://www.shedkitstore.com/info)





is the cherry on the top," says Hyde. "It's what makes your landscaping and outdoor room pop." **EHT**

**Editor's Note:** This article appears courtesy of Forney Industries, one of America's most established family-owned welding and metalworking product companies, founded in 1932. Today, the company offers nearly 5,000 products serving the automotive, hardware, farm & ranch and do-it-yourself markets. Visit Forney Industries at [www.forneyind.com](http://www.forneyind.com) and Will Hyde at [www.milehigh-landscaping.com](http://www.milehigh-landscaping.com).

## Space-Saving Workbench/Table

Model FB2632 (26" x 32")

**RATED UP TO 250 LB LOAD**



- Folds up quickly against wall. Takes up no floor space.
- Easy attachment to 16" and 24" O.C. wall studs.
- Heavy gauge, anti-corrosive steel.
- Ideal for garages, utility rooms, laundry rooms, tool sheds, kitchens and utility trailers.
- Mounting hardware included.

Shop [tjernlund.com](http://tjernlund.com) or available on Amazon through Professional Grade Products (search "Model FB2632")



**Tjernlund Products**



## Burning Barrels



- Safely and thoroughly incinerate yard and non-hazardous household waste, as well as outdated financial documents.
- Constructed of heavy-duty gauge stainless steel for long-lasting service under extreme heat conditions.
- Side and top vent promotes fast, thorough incineration and lid effectively confines flying embers.

Shop [tjernlund.com](http://tjernlund.com) or available on Amazon (Search "Professional Grade Products burn barrel")



# DOOR]STUD™

*Let us hold the door for you!*



Made in the U.S.A.  
Patent Pending # 62/528,857

**Visit Us!**  
National  
Hardware Show  
Booth IS445



## **Simple**

- Adjustable
  - Easy to use
  - 1-3/8" & 1-3/4"
- Pre-hung or slab doors



## **Saves Time & Money**

- Quick ROI
- Eliminates damage
- Reduces install labor



## **Rugged**

- Durable handles
- Steel construction
- Single action clamp

***BEST DOOR INSTALLATION TOOL EVER!***





***A Natural  
Look for your  
Backyard  
Retreat***

Photo © Pavestone



# STONES & PAVERS FOR OUTDOOR PROJECTS

The look of stone is just as natural as grass and trees, making stone building materials a favorite choice for outdoor construction projects. Stone is durable, weatherproof and complements the outside environment when converting your backyard to an entertainment area. Companies such as Keystone Hardscapes, Pavestone and Oldcastle offer stones and pavers in a broad array of colors, sizes and styles, enabling creative DIY'ers to custom-build virtually any project they can conceive.

But creativity is not a prerequisite for building with stone. Recognizing that designing with stone can be intimidating for first-timers, manufacturers now offer detailed instructions that walk builders through practically every phase of a project, from site preparation to laying the last stone.

## FAVORITE FEATURES

For homeowners who enjoy the outdoors at night or during a winter, a fire pit is one of the most popular amenities to include in the design. You can always purchase a portable pit at any home center, but a permanent stone pit provides a substantial improvement

*Build an outdoor kitchen of stone and pavers to be the envy of your neighborhood. The trouble is that your neighbors might never want to leave. Photo © Pavestone*







*With a decorative granite top, this simple stone column makes a handsome outdoor table.*

*Photos © Pavestone*



*Fire pits, benches and planter boxes are among the many stone projects available as pre-sorted Rumblestone kits available at the Home Depot.*



*Mix and match paver and stone styles for an eye-catching blend of color and shape.*

to the landscape and gives the exterior design a focal point.

Stone fire pits make an ideal first project for a DIY'er who is new to masonry work. They're relatively simple in design and can be easily customized to varying sizes and with different trim details.

If you don't want to customize your pit, that's okay too. Customizing a stone project can be challenging to a novice, requiring careful planning and usually the need to cut stone with a wet saw, which many homeowners don't own or have never used.

Addressing this concern, some companies provide kits with almost everything you need for the project, including every stone of specific size, cap stones for a finishing touch, and detailed step-by-step instructions that tell the installer exactly where to lay every stone. This makes many of these stone projects as easy to assemble as Legos, requiring no mortar between the stones—only application of construction adhesive between the courses.

Sound easy? It is. And a fire pit is only a taste of the available

projects. More ambitious homeowners might opt for something bigger and badder, like a full-size outdoor fireplace. If you really want to dazzle the neighbors, build an outdoor kitchen complete with a stone-enclosed barbecue grilling station. Other stone-built ideas include benches, columns, planter boxes, water features, small retaining walls (up to 3 ft. high), and even mailbox enclosures. Connect everything with a paver patio and sidewalks, and you'll soon have an outside oasis right out your back door.

## COL-MET STEEL HARDSCAPE EDGING

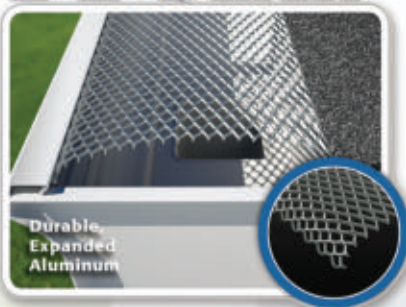
Col-Met Steel Edging helps create clean, crisp lines in various landscape designs. Col-Met's steel edging keeps grass from spreading and also retains mulch, rocks and stones in gardens and walkways. Col-Met Edging is easy to shape and install and stays in place for years.

Col-Met is the largest manufacturer of commercial grade steel landscape edging. The steel landscape edging products are available in green (standard), brown and black powder-coat finish. New for 2018 Col-Met is including a textured black edging finish to its product lineup. Learn more at [www.colmet.com](http://www.colmet.com).





**E-Z-Quick™**



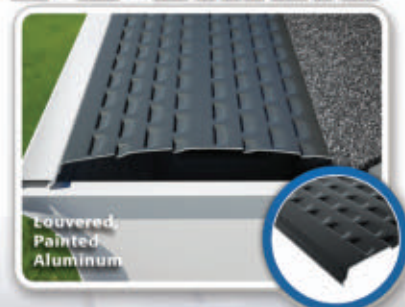
Durable,  
Expanded  
Aluminum

**E-Z-Zip™**



Heavy-Duty,  
Powder-Coated  
Expanded Steel

**E-Z-Shield™**



Covered,  
Painted  
Aluminum

# E-Z to Install. Designed to Stay Put. No Fasteners Needed.

- ★ All three are engineered for a fast install--no fasteners needed.
- ★ Designed to stay put during rough weather, but snap out for maintenance.
- ★ All will fit 5" gutter and come in 4' sections

[www.e-zgutter.com/retail](http://www.e-zgutter.com/retail)

Available At:



**Do it  
Best**

*True Value.*  
**amazon**



WWW.WILDHOGRAILING.COM



100% MADE IN USA



#### WILD HOG RAILING

- ✦ 6 Gauge - 4" x 4" Welded
- ✦ Available in Powder Coated Black & Silver
- ✦ Zinc Epoxy Pre-Coat
- ✦ Available sizes: 3' x 6' & 3' x 8' & 5' x 6'
- ✦ Refined with your view in mind



#### INTRODUCING THE FREEDOM FILL

- ✦ Now compatible with Trex Transcend Rail
- ✦ Aluminum Infill Kit
- ✦ Available in Black and White Powder Coated
- ✦ Available in 6' Kit & 8' Kit
- ✦ Set Your View Free



#### TAHOE HOG RAILING

- ✦ .375 Gauge
- ✦ Woven not Welded
- ✦ Available sizes: 3' x 6' & 3' x 8' & 5' x 6'
- ✦ Raw Steel and Black Powder Coat
- ✦ Great for Commercial Projects



#### HOG TRACKS

- ✦ 6' and 8' Aluminum Channel
- ✦ Customize your Wild Hog Project
- ✦ Sleek look for Railing, Fencing, Arbors, whatever you can dream up
- ✦ Available in Black and White Powder Coat

## STONES & PAVERS FOR OUTDOOR PROJECTS

### EASY CONSTRUCTION

A prime example of these DIY stone-building kits comes from the Rumblestone product line from Pavestone. Available at the Home Depot, the kits come with detailed course-by-course instructions that explain every move you need to make—and they're designed for easy construction. For example, the Rumblestone projects require no concrete base. Although most of these projects would wonderfully complement a paver patio, even that's not a requirement. You can basically just level and compact the site to begin construction (although *EHT* suggests using a compacted granular base beneath any stone project).



Here are 4 of the 12 step-by-step photos from the instructions for building a Rumblestone 50.7x35-in. barbecue enclosure. Every course of stone is represented in the instructions, illustrating which stones you need and exactly where to place them. This particular kit requires 54 Large, 38 Medium and 66 Mini stones, all available from the Home Depot.

With the DIY kits, you can purchase construction adhesive as needed, and virtually everything else is included for the project. You can pick up the kits at the store, and in some cases they're even available for delivery (check your local store for details). Special financing is also available. **EHT**

For more information on the wide range of stone landscape ideas, check out the detailed instructions and tutorial videos available at [www.pavestone.com](http://www.pavestone.com) and [www.keystonehardscapes.com](http://www.keystonehardscapes.com).



## CONSTRUCTING A PAVER PATIO

With many shapes, sizes and textures, pavers offer durable and stylish design options for exterior walkways. Paver patios with a flexible base have long been a popular project for DIY'ers. A patio with a flexible base is built with sub-layers of compacted gravel and sand. This method of construction requires no concrete or mortar, plus homeowners love the classic brick-like look of the walking surface.

Carefully plan the patio's size and shape according to your lifestyle needs and the design of your yard. Outline the patio perimeter with spray paint or stakes and string. Also, keep in mind how many bricks you want to cut. Although a curved patio has a less formal appearance than a square one, the rectangular pavers will need to be cut to follow the curve of the border. (Tip: Add 10 percent to your total paver order to account for cutting.) The choice of brick pattern can also minimize cutting. A basket weave pattern is ideal because full pavers can be used throughout a square or rectangular shaped patio.

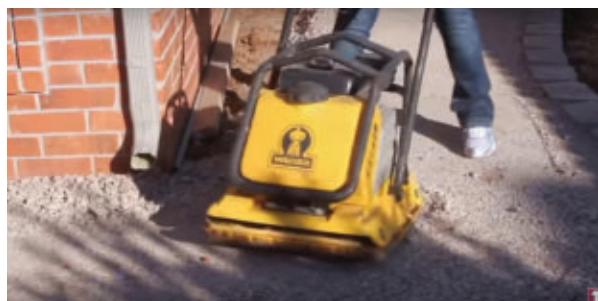
Establish the patio's finished height, which should be about an inch above the ground. The patio surface should be built to slope away from the house or surrounding buildings by about 1/4 inch per foot. EHT recommends digging deep enough for the thickness of the pavers plus a minimum of 4 inches for crushed rock and an inch of sand to use a leveling bed.

Note: Before breaking ground on your patio, call 811, the national "Call Before You Dig" number, designated by the FCC to help prevent American homeowners from damaging underground utilities.

The accompanying photos show installation of patio built with Pavestone pavers, available from the Home Depot.



As a general rule, patio pavers require about 4 inches of compacted crushed stone as a base for pedestrian use (up to 8 inches for climates where ice heaving is a problem).



The subsoil and the gravel bed should be thoroughly compacted prior to installing the pavers. Plate compactors are available at almost any rental outlet.



**MANUFACTURERS OF HIDDEN DECK FASTENERS AND ACCESSORIES**

AMERICAN QUALITY  
**AMERICAN TRADITION**  
AMERICAN PRIDE™



**Ipe Clip®**  
Hidden Deck Fasteners



**EXTREME®**  
Gap Spacing 3/32"



**EXTREME4**  
Gap Spacing 5/32"



**EXTREMEKD**  
Gap Spacing 1/4"

**NEW!**

**WiseCoat™**  
*Premium*  
Hardwood Deck, Siding,  
& Fence Sealer



**Ipe Oil®**  
Hardwood Deck Finish



**IPE CLIPS® • IPE OIL® • CABLE RAILING**  
**IPE SEAL® • WISECOAT™ • DECK SCREWS**  
**DECK FLASHING TAPE • DECK TILES & PEDESTALS**  
**HARDWOOD WRENCH™ • HIDDEN SIDING FASTENERS**  
**BOARD SPACERS • DECKING TOOLS & ACCESSORIES**

(866)427-2547      info@deckwise.com

**www.DeckWise.com**



# STONES & PAVERS FOR OUTDOOR PROJECTS



Add a layer of sand to the patio site and screed it level. This can be accomplished by using 1-inch pipe buried in the sand to serve as a depth gauge. Installers can sweep the screed-board over the top of the pipes to level the surrounding sand.



After the sand is level, remove the pipes and fill the indentations with more sand.



Screed the repaired pipe trenches level with the surrounding sound.



Next step is to begin installation of the paver surface, butting the edges against each other.



Carefully measure and mark pavers that need to be cut.



A wet saw is the easiest and most accurate way to cut pavers. If you don't own one, you can always rent one from your local rental outlet (when you rent your plate compactor).

## DECK2WALL<sup>TM</sup> spacer

**DON'T LET YOUR DECK  
ROT YOUR HOUSE!**

**Prevent Trapped Water and Rot**  
**DECK2WALL<sup>TM</sup> SPACERS**  
Fast & Easy to Use  
Non-corrosive  
IAS Lab Tested  
**Decks, Shade Structures,  
Posts, Stairs....**

DECK2WALL, INC.  
888 577-2237  
www.deck2wall.com  
US Patents  
6945004 & 8087207

Available at

Find at participating  
**Lumber Yards &  
Home Centers**



# Create Clean Lines In Your Yard With **STEEL EDGING**

- **DURABLE POWDER COAT**
- **STAYS IN PLACE FOR YEARS**
- **EASY TO SHAPE AND INSTALL!**
- **LONG LASTING SOLUTION TO RETAIN MULCH, ROCK AND STONE**

COLORS: Green, Brown & Black  
Galvanized or Unpainted Available



Also  
Available!

**New Textured Black Finish**

14 ga. – 1/4 " Thickness  
4"– 6" Heights

Largest Manufacturer of Commercial Grade Steel Landscape Edging

# COL-MET®

[www.colmet.com](http://www.colmet.com)

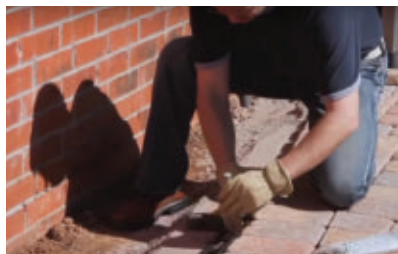
©2018 COLLIER METAL SPECIALTIES LTD.



1957 **COL-MET.** 2017



# STONES & PAVERS FOR OUTDOOR PROJECTS



Install some sort of edging or border along the edges of the patio to prevent the pavers from shifting around.



Apply joint sand to the paver surface and sweep it into the all the joints. Concrete sand that has coarse and angular



particles is recommended over masonry sand, which has rounder, finer particles. Completely fill the joints with sand to help them interlock.

After installing the pavers, tamp the finished surface. Comprehensive compaction during all phases of construction will help ensure a strong, sturdy foundation for your walking surface. **EHT**

## CORDLESS EQUIPMENT FOR LANDSCAPE MAINTENANCE

When it comes to landscaping and garden equipment, advancements in battery technology now provide more freedom than ever. Every year, more homeowners are making the switch from traditional gas equipment to cordless options. Aside from reducing carbon emissions, the cordless switch comes with plenty of other advantages.

### QUIET OPERATION

Compared to their gasoline counterparts, cordless outdoor tools are quiet enough to use any time of day. Lawn maintenance in the early morning or evening hours is no problem for your family or neighbors.

### INSTANT STARTING

The eternal struggle of man vs. rope ends with cordless technology. Most kinds of cordless outdoor equipment start with the push of a button.

### LOW MAINTENANCE

Gas-powered equipment usually requires specific steps to be taken between uses, and even more steps for long-term storage. In the world of cordless power, maintenance requires little more than keeping the tool tidy, and keeping the battery charged.

### GAS-LIKE PERFORMANCE

True, there was a time when cordless tools simply didn't have the power to compete with gas-powered tools. Even now,

## Find Studs in a Snap

**NEW!**



**STUDMARK™**

Magnetic Stud Finder with  
Removable Markers Model 7310

**NO  
BATTERIES  
REQUIRED**



**STUDMARK+™**

Magnetic Stud Finder with Level &  
Removable Markers Model 7350



**StudMark™ locates studs  
easily and accurately**

These rugged stud finders use powerful rare-earth magnets to locate the screws holding sheetrock to studs without the frustration of false findings.

Two removable magnetic markers identify stud locations.



Call 1-800-854-8075 or visit [www.calculated.com](http://www.calculated.com)



some homeowners are hesitant to make the switch because the battery technology of yesteryear almost always meant sacrificing power. Recent advancements, however, end the struggle between cordless convenience and efficient performance. Larger voltage battery-powered options, such as the RYOBI 40V line, provide

options that give gas counterparts a run for their money.

#### WHAT TO LOOK FOR

When you're ready to ditch the gas can, look for tools that will make the transition seamless. Many cordless options offer features similar to gas tools. For example...



RYOBI's 40V Self-Propelled Brushless Mower is designed with a 20-inch cutting deck, adjustable height lever, mulching and bagging options, and a user-friendly self-propelled feature that makes the job a breeze. It's got everything you'd expect from a gas mower, with the cordless benefits listed above.



RYOBI's 40V X String Trimmer accepts universal-fit gas attachments, a capability that was unheard of 5 years ago. The 40V battery delivers runtime that rivals a gas engine, and the ReelEasy bump-feed trimmer head can handle the same heavy-duty trimming tasks.

Visit [Ryobitools.com](http://Ryobitools.com) to see all 25 tools in the RYOBI 40V Outdoor Power family. Each of these cordless options is designed with features to make the cordless switch one of the easiest decisions you'll make this season.

**INSIDE OR OUTSIDE**

**DRYLOK**  
CONCRETE FLOOR PAINT

**DRYLOK**  
**E1**  
1-PART EPOXY FLOOR PAINT

**LATEX OR EPOXY**

**OUR VERSATILE FLOOR PAINTS  
HAVE YOU COVERED**

Our **DRYLOK® Latex Concrete Floor Paint** is scientifically formulated to protect, beautify and decorate interior and exterior masonry and wood surfaces in homes as well as commercial and industrial spaces.

Our **DRYLOK® E1 1-Part Epoxy Floor Paint** utilizes an Advanced Epoxy Ester Resin fortified formulation to deliver greater protection and durability. Use it to create a gorgeous, showroom-quality finish.

Visit [UGL.com](http://UGL.com) for inspirational photos, how-to videos and brochures

Quality Products Since 1932 • DRYLOK • ZAR® • UGL®



# NATIONAL HARDWARE SHOW 2018 PREVIEW

Industry insights, product trends and new technologies—you'll find it all May 8-10, 2018 at the National Hardware Show held in the Las Vegas Convention Center. The NHS is an enormous trade show where tool and equipment companies unveil the new products that will soon stock the aisles of your local hardware store. The *EHT* staff attends every year to check out more than 250,000 hardware, tool and lawn/garden products collected in one place. Here's a preview of what will be exhibited at the convention.

## PORTACUBE STR MITER SAW WORK STATION

The PM-8000 Portacube STR Miter Saw Work Station from Bora Tool features a rotating table top, allowing you to store your miter saw when not in use. Designed to work with most miter saws, it can be configured in a stored position, or you can raise the retractable wings to create up to 7 feet of working surface. Its compact size of 31x29 inches makes a fit in almost any work shop, and by utilizing the adjustable tool mounts, it fits any miter saw up to 26-1/2-in. wide. Adjustable tool tables raise to the height of your miter saw, useful for cutting longer boards, and 10-in. wheels easily roll the Portacube STR around your workshop. Visit Boratool or booth 8260.





Summit... *responsible solutions*®.

# Professional mosquito control for the homeowner!

***Kills mosquitoes before they're old enough to bite!*®**



## Mosquito Dunks®

- Provides long lasting control—contains BTI. Works for 30 days or more.
- Use in rain barrels, animal watering troughs, stock tanks, elevator shafts, rain gutters, bird baths, old neglected swimming pools, ponds, etc.
- Stake or tie in place in flood prone areas—starts working immediately when submerged by rising water. Goes dormant once the Dunk dries out—and remains ready for the next flood.

## Mosquito Bits®

- Provides instant control (Quick Kill) for present mosquito larvae—contains BTI.
- Easy to use granular product—treats swampy areas, turf tracks, old tires, tarps on woodpiles, puddles under decks, etc.
- Treat tropical plants that hold water such as bromeliads and pitcher plants.
- Reapply every 7 to 10 days—not as long lasting as Mosquito Dunks.

**Use both for maximum control!**



**SummitResponsibleSolutions.com**

**800.227.8664**

Summit... *responsible solutions*®, Mosquito Dunks®, Mosquito Bits®, and Kills Mosquitoes Before They're Old Enough To Bite!® are a registered trademarks of Summit Chemical Co.



## KNEE BLADES

The high-quality KneeBlades from Milescraft allow for more balance, flexibility and mobility. The three-wheeled mobile base allows for full 360° turning capability, without lifting from the floor. The close-to-the-ground design minimizes back stress, and with the



push of a button, you can go from KneeBlade to kneepad. There's no more getting up and down, when you can glide. Visit [Milescraft.com](http://Milescraft.com) or booth 7261.

## AQUA PATCH

Aqua Patch is a cold-mix, water-activated product that is a durable and permanent solution to repair potholes in all types of weather. It is easy to use, versatile, environmentally friendly and saves money.



Aqua Patch works in three easy steps: (1) Add the solution to the pothole. (2) Add water. (3) Tamp the solution down, and that's it! Aqua Patch is an environmentally friendly, durable and permanent solution. Visit [Aquapatchasphalt.com](http://Aquapatchasphalt.com) or booth 3948.

## ULTRA QUIET, OIL-FREE 4.0 HP AIR COMPRESSOR FROM CALIFORNIA AIR TOOLS

The largest manufacture of ultra quiet, oil-free air compressors, California Air Tools' powerful new 60040CAD 4.0-hp 60-Gallon Air Compressor is designed for shops, garages or warehouses where noise is a major issue. It produces less noise (75 decibels), requires less maintenance, has a fast recovery and offers more air capacity. The compressor operates with two 2.0-hp, dual piston oil-free pump/motors that deliver 12.80 CFM @ 40 PSI and 10.60 CFM @



90 PSI for use with high-demand air tools. The system has no oil in the air and allows for use in cold temperatures. The Automatic Drain Valve Feature drains the air and removes moisture from the air line, so there's no need to manually drain the tank. This model runs on 220 volts 60 hertz and includes a power cord and 5-micron air filter regulator. Visit [Californiaairtools.com](http://Californiaairtools.com) or booth 7639.

## FROGTAPE BRAND PAINTER'S TAPE

FrogTape is the only painter's tape treated with patented PaintBlock Technology. PaintBlock is a super-absorbent polymer which reacts with the water in latex paint and instantly gels to form a micro-barrier that seals the edges of the tape, preventing paint bleed



and producing the sharpest paint lines possible. No matter your painting project needs, FrogTape provides an easy taping solution. Visit [FrogTape.com](http://FrogTape.com) or booth 5615.

## MAX CASES

Max Cases from Plastica Panaro are IP67 certified tough, durable and reliable. They may be used in a variety of applications including photography, scuba diving, hunting, fishing, tactical and manufacturing.



These cases offer superior protection from elements, water, dust and impacts. Choose from a wide range of sizes and configurations. See the full lineup of cases at [www.plasticapanaro.com](http://www.plasticapanaro.com) or visit booth 8158.





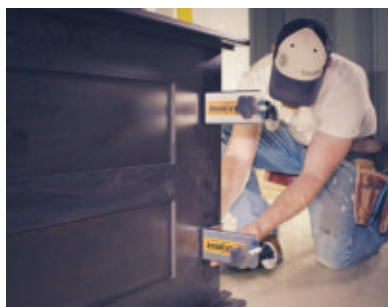
## FORNEY EASY WELD MACHINES

Forney Industries adds new machines to their Forney Easy Weld lineup. The new Forney Easy Weld 140 MP is capable of MIG, Stick and TIG welding processes. The company also has a new Forney Easy Weld 140 FC-I that is a flux core inverter machine, and they've redesigned the Forney Easy Weld 100 ST. Lastly, the new Forney Easy Weld 20 P plasma cutter can cut up to 1/4 inch and is compatible with a pancake air compressor. All these machines can easily run off your standard garage outlet of 120 volts. For the novice welder who has always wanted to give welding a try but may have been intimidated, these machines are designed for you. You can easily turn inspiration and ideas into masterpieces. Visit [www.forneyind.com](http://www.forneyind.com) or booth 7425.

## DOOR-STUD

Hanging doors was a time-consuming, tedious and a potentially costly process until the Door-Stud. Home Innovation Holdings' newest innovation, the Door-Stud, cuts typical installation labor time in half. The Door-Stud touts a steel constructed design with a single action clamp and soft-grip handles. This durable tool simplifies the install of 1-3/8-in. and 1-3/4-in. pre-hung or slab doors. With the Door-Stud, the installer handles a

door once. The Door-Stud is vertically adjustable; holding the door upright and leveling the door in three directions for preparation of installation. The Door-Stud enables the installer to conduct a single



person, hands-free installation by mobilizing the door and preventing it from resting against the interior walls of the home; thus preventing damage to the wall or door itself. Once the door installation is complete, the Door-Stud is removed from the bottom edge of the door, ready to be used on the next job. Visit [www.homeinnovationsholdings.com](http://www.homeinnovationsholdings.com) or booth IS445.

## ONETIME LIGHTWEIGHT SPACKLING KIT

Founded as Smith & Hemenway Company Inc. in 1872, Red Devil has been serving the DIY, paint and contractor community with 146 years of quality and innovation in caulks, sealants, adhesives and painter's tools. Red Devil has long-time recognized brands such as Lifetime Caulk and Onetime Lightweight Spackling. For repairing holes or cracks in walls, lightweight products like Onetime Spackling include ingredients that allow it to be paintable in minutes, have no shrinking or cracking and a smoother finish. Mesh or aluminum wall patches, like the Onetime fiber mesh crack patch or aluminum wall repair patch, are available to give you the same finished look with much less work. And now Red Devil offers the Onetime Lightweight Spackling Kit, which contains everything you need in one package. The unique square tub contains premium spackling formulated to receive paint and dry to a perfect match while the lid contains the tools you need to apply it. The lid is equipped with an aluminum patch, a putty knife, and sandpaper for those more detailed finishes. Visit [www.reddevil.com](http://www.reddevil.com) or booth 5606.







## WAVE FENCING

The Wave fence is truly an eye-catcher with its unique style of panel, with a domed top and sturdy, planed horizontal slats that are secured into a strong rebated frame. This panel shows off a contrast between the horizontal slats and a rounded section with a diamond trellis which forms a wave pattern. European Garden Living LLC offers this wooden architecture collection for gardens and outdoor living areas. Visit [europeangardenliving.com](http://europeangardenliving.com) or booth 12821.

## MOSQUITO DUNKS AND MOSQUITO BITS

The key to preventing mosquito-borne diseases such as West Nile virus, Zika virus and Chikungunya is controlling mosquito breeding grounds. Mosquito Dunk is the top selling biological mosquito control because they kill mosquitoes before they're old enough to



bite. The active ingredient is BTI, a natural bacterium that kills mosquito larvae but is harmless to people, pets, fish, plants and wildlife. When a donut-shaped Mosquito Dunk is placed in standing water, the BTI will kill mosquito larvae for up to 30 days. Just float biodegradable Mosquito Dunk in ponds, birdbaths, rain barrels, fountains, and any standing water. In places where small amounts of water collect, such as potted plant saucers and tree holes, use a granular form of BTI called Mosquito Bits, which can kill mosquito larvae in swampy areas where water cannot be drained. Mosquito Bits are also approved for fungus gnat control in potted plants. Visit booth 11110 or [www.summitresponsible-solutions.com](http://www.summitresponsible-solutions.com).

## T-REX "FEROCIOUSLY STRONG" PRODUCTS

T-Rex brand products are designed for projects and challenges that require intense strength, durability and holding power, no matter the application. Previously, the line included T-Rex Tape, Clear Repair Tape, Packaging Tape, and Mounting Tape. In 2018, the brand adds several new "ferociously strong" products to the line, including T-Rex Extreme Tread Tape, an extreme, industrial-grade, non-slip tread tape that improves surface traction to help prevent slips and accidents. Made with a multi-layer grit embedding process, the tape offers long-lasting grit and is weather resistant (-40°F to +220°F), and it exceeds OSHA and ADA Federal recommendations. Another "ferociously strong" addition, T-Rex Waterproof Tape is the ideal high-performance tape for stopping active leaks, holding to wet surfaces and even



applying underwater. Utilizing innovative R-FLEX Technology, the tape features a rubberized backing that allows it to stretch around tough bends and corners or be pushed into cracks and seams – ultimately creating extreme

adhesion and a superior seal. Visit [T-RexTape.com](http://T-RexTape.com) or booth 5615.

## UGL WATERPROOFING AND REPAIR PRODUCTS

UGL's popular waterproofing products include Drylok, America's number one selling masonry paint that's guaranteed to stop water, whether you are waterproofing a leaky basement or decorating a concrete floor. The company's ZAR Exterior Stains and Deck Care products beautify wood surfaces while protecting them from Mother Nature's harshest elements. The award-winning ZAR Wood Finishing line for interior projects is so easy to use, do-it-yourselfers can enjoy







# Ring in Spring with

**Wolmanized®**  
OUTDOOR® WOOD

Wolmanized® ground contact preserved wood is the ideal material for building raised beds because it will last for years and looks great.

Find out more at  
[LonzaWoodProtection.com](http://LonzaWoodProtection.com).

**Lonza**



professional results the very first time. Busy homeowners also use UGL Cleaning and Maintenance products to caulk tubs and sinks, grout tile, waterproof roofing seams, seal windows, repair driveway cracks, patch walls, fill nail holes, fix crumbling plaster and much more. Visit [www.ugl.com](http://www.ugl.com) or booth 5921.

### AMPTAMP

Why didn't we think of this before? This patented hand-operated tamper design uses a dead-blow effect to reduce rebound fatigue, adjust weight, and amplify tamping energy. Get rid of old cast metal tampers that bounce, break, and cause arm fatigue/injury. Get top-shelf performance and greater durability with AmpTamp. Visit [amptamp.com](http://amptamp.com) or booth IS420.



### CHAMPION HOME STANDBY GENERATOR

Champion Power Equipment home standby generators are the simple solution to a power outage. Enjoy peace of mind while ensuring security and convenience for your family during an emergency. The generator starts automatically when the power goes out and returns to standby when power is restored. The starting system operates in temperatures ranging from -22° F to 104° F with no warming kit necessary. The onboard battery charger maintains the charge at all times, and since the generator is connected to the home's

propane or natural gas system, it never needs refueling. The unit also performs weekly self-diagnostic tests. An all-weather, composite mounting pad is included for easy installation, plus the steel enclosure protects the generator from the elements. The automatic transfer switch is the smart controller that connects the generator to the electrical panel in the home and ensures the generator turns on when needed, and it turns off automatically when grid power is restored. The system can be set up to power emergency essentials during a power outage, or the whole house. The gull-wing design provides easy



For the first time homeowner and the venerable household handyman, there is no better resource. Learn how to prepare for unwelcome surprises as well as how to handle them when they inevitably happen.

ORDER  
YOUR  
COPY  
TODAY

Order online at **Amazon.com,**  
**Walmart.com, Target.com**

or pick up a copy at

**Barnes & Noble,**  
**Books-A-Million,**

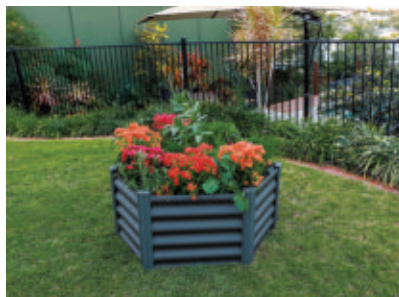
**Lowe's Home Improvement Stores**  
and many other fine  
book retailers.



access to the engine and control panel and allows a full view of the onboard control system. A sound-dampening lining and low-tone muffler reduce noise through a unique baffle system and make these units the quietest in their class. Visit [www.championpowerequipment.com](http://www.championpowerequipment.com).

### RAISED GARDEN BEDS FROM THE ORGANIC GARDEN CO.

The Organic Garden Co. raised garden beds are designed to be a perfect addition to any backyard. The hexagonal shape is ideal for gardens and can be made to fit into most outdoor areas. Features include rolled safety edges, high-quality steel construction, and the SNAPTITE assembly system that requires no tools or screws. The



SNAPTITE assembly system dramatically reduces the time and effort required for assembly. Visit [Organicgardenco.com.au](http://Organicgardenco.com.au) or booth 10368.

### SEWER SKEWER

The Sewer Skewer from Villella Products LLC is a frozen sewer vent defroster that fits in any size vent and uses heat from the sun to keep vents free of ice buildup at below-zero temperatures. The

patented Sewer Skewer vent defroster prevents rooftop sewer vents from freezing during even the coldest temperatures—100 percent guaranteed. No installation is required; simply drop the copper pipe into the top of the sewer vent and say goodbye to ice buildup. It fits any size vent and can be left in year-round. Visit [sewerskewer.com](http://sewerskewer.com) or booth IS311. **EHT**



# NIGHTLOCK® STOPS THE THREAT FROM ENTERING.

- Uses the strength of the floor to prevent door kick-ins
- Easy to install on all floor types: wood, concrete, tile and carpet
- Great for single or double entry doors

Available in 3 Finishes

# \$39<sup>95</sup>



[WWW.NIGHTLOCK.COM](http://WWW.NIGHTLOCK.COM)

**SAVE 15% OFF YOUR ORDER**  
Use code **EXTREME18** at checkout  
\*restrictions may apply



*Oh, the  
Things  
You  
Can Do!*

# SOLID SURFACE FOR CREATIVE DIY'ERS

**F**or all you DIY'ers out there whose springtime juices are flowing, here are some things you probably didn't know you could do with acrylic solid surface material such as Corian®, Avonite, LG Hi-Macs and many other brands. Simple woodworking tools are all you need to get started.

## WHAT IS SOLID SURFACE?

Solid surface is a manufactured material most commonly used for seamless countertop installations. It is frequently referred to as Corian®, a product developed by DuPont™ in 1964. It can be readily cut, routed and sanded like wood and formed into countertops, shower walls, external cladding for buildings, signage, and furniture where non-porosity and infrequent maintenance are highly valued. These are just a few of its many applications.

Solid surface is made of acrylic resin, polyester resin or a combination of the two that is then combined with filler, color pigments and acrylic chips. This composition is most frequently extruded or poured as 1/2-in. thick sheets that are 30x144 inches and are the same color throughout their thickness.

In addition to being workable like hardwood, the material can be heated and thermoformed into curved and molded shapes. It can also be printed on, using dye-sublimation techniques that deposit the ink just below the surface, so the image becomes permanent.

## THERMOFORMING

Thermoforming (the process of heating and shaping synthetic material) is an increasingly popular way to utilize solid







surface to create 3D curves and rounded shapes. This is a realm where other surfacing materials like quartz and granite cannot be used. The ability to thermoform has made solid surface a favorite three-dimensional artistic pallet for designers everywhere.

Start the process of shaping the solid surface material by heating it to the point that it becomes very flexible, much like a wet noodle. Pay attention to the following factors when shaping the material into a radius or cylindrical shape:

**Material Preparation**—Cut the material slightly larger than the final dimension because it shrinks after heating. Prior to heating, the edges of the material must be sanded smooth with no chips, cracks or scratches. Small chips, cracks and scratches become the launching point for cracks to develop later.

**Heating**—It is best to heat the entire piece of material. If you heat a small section where the bend will occur, then there may be a tendency for stress to develop at the interface of the heated and not heated portions. The material should be heated to within a particular range of temperatures depending on the composition of the material (refer to manufacturer's recommendations for your product). Be careful not to heat the material too much or too little. Under-heating the material and then trying to form it can result in cracking, breaking or stretch marks. Overheating the material may cause it to bubble or blister. Heating the material may also cause it to darken in color.

**Material Flexibility**—Acrylic material is the most flexible when it is heated to the appropriate temperature. A blend of acrylic and polyester is the next most flexible, with an all-polyester material being the least flexible.



*Solid Surface material can be used to create 3D curves and rounded shapes through a process called thermoforming.*

**Bending and Shaping**—After the material has reached the intended temperature, remove it from the oven and slowly bend it over or shape it into the desired form. If it

is bent too rapidly, it may crack, break, or get white stretch marks. If bent too slowly, it may cool and stiffen too soon. However, don't worry, as there is generally



# Beautiful. Distinctive. Homeowner-Approved.



## Your Dreams. Your Budget.

Keystone Hardscape outdoor living designs allow you to build projects all at once, or as time and budget allow. Visit the Outdoor Living Designs page on our website to view and download step-by-step designs including fireplaces, kitchens, fire pits, columns, benches and more: [www.keystonewalls.com/outdoor-living-designs](http://www.keystonewalls.com/outdoor-living-designs). Click the WHERE TO BUY link to find Keystone products near you.

With Keystone Hardscapes, the only limit is your imagination.



To view Keystone's complete line of innovative products and project ideas, visit us online at [www.keystonewalls.com](http://www.keystonewalls.com) or call 1-800-747-8971.





sufficient time to get the heated material to the destination mold.

**Forms and Molds**—Create a set of male and female molds from plywood or MDF for the material

to be placed on or between while it cools. Let the material cool to below 180 degrees before removing. Note that forms and molds will transfer all but the smallest

# Goddard Spiral Stairs

- CUSTOM DESIGNED
- HANDCRAFTED IN STEEL & WOOD COMBINATIONS OR ALL WOOD

  
**BUILT  
IN THE  
U.S.A!**

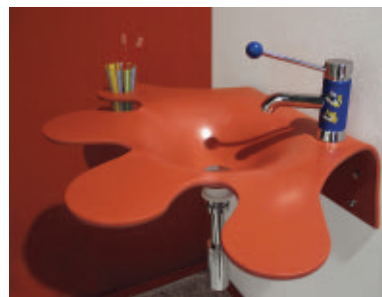


At Goddard Manufacturing Co., we specialize in custom designed, handcrafted spiral staircases - built to your specifications. You can choose from several different styles of spiral staircases and our professional craftsmen can custom design a spiral staircase to fit almost any application.

**Goddard Manufacturing Company**  
PO Box 502, Logan KS 67646

Toll Free: 800-536-4341  
spiralstaircases@ruraltel.net

**www.spiral-staircases.com**



© DuPont Corian®

*Thermoforming works by heating the solid surface material to the point that it becomes very flexible, and then shaping the material using forms and molds.*

imperfections contained in their surface to the material being thermoformed. One way to eliminate these markings is to line the surface of the mold with tempered hardboard (also known as pegboard, but without the holes) stapled in place using small furniture staples.

**Conforming**—If available, a vacuum membrane forming press can be used to help the material conform to the desired shape. At times, it is beneficial to use a “helper stick” or a shaped piece of wood to coax the material into position. Sprinkle on a light layer of talcum powder to make the process even easier.

**Cool Down**—Keep the material fixed in place until it reaches



© DuPont Corian®

*Thanks to the process of dye sublimation, you can now transfer any design, logo, photograph or image onto your solid surface material.*



180°F at the surface and then remove the restraints to allow the material to release stress. (Note: 180° is the temperature DuPont suggests for Corian, but other brands may vary.)

Attend to any seaming or other modifications after thermoforming is complete.

**Ovens**—There are three styles of thermoforming ovens; infrared/radiant, hot air/convection, and platen press. The platen press oven is designed to come in contact with the sides of the material. This process consequently heats the material faster than the other two oven types. No matter what type of oven you decide to use to heat the material, make sure it is large enough to contain the entire piece.

## DYE SUBLIMATION

Want to add more artistry and pizzazz to your business or home office, dining room, kitchen, bathroom, family room or bedroom? Look no further than solid surface.

Thanks to an exciting process called dye sublimation, you can now transfer any design, logo, photograph or image (no matter how simple or complex) onto your solid surface material.

**How It's Done**—Although it may look complicated, dye sublimation is really quite simple, and the results are impressive. As it turns out, solid surface is the perfect medium for the dye sublimation process. This is because successful dye sublimation is dependent upon an acrylic or polyester base for application, because of its ability to bond with the gassed ink dyes that are used.

To start, select your desired image or text—a photograph,



*During the dye sublimation process, a specialist will print your desired image to an ink transfer plate and heat up both the plate and the solid surface material. Once the materials reach the proper temperature, a vacuum process is used to transfer the ink on the transfer plate (now in gaseous form) into the Corian® or other solid surface material.*

**AMERICA'S MOST USEFUL TOOL®**

**DUCK TAPE**  
ORIGINAL STRENGTH  
BRAND DUCT TAPE

**STRONG • STICKY • WATERPROOF\***

Trust Duck® brand duct tape to deliver the quality and strength needed for every project.

[duckbrand.com](http://duckbrand.com)

Made in the USA with American and globally sourced materials.  
\*Waterproof Taping

©ShurTech Brands, LLC 2017/70659





*A printed solid surface piece can be fabricated, shaped and thermoformed in the same manner as any other piece of solid surface material.*

digital or vector image—and provide it to your dye sublimation specialist. It's important to check with them beforehand to make sure that your image meets the minimum digital or printed requirements to enable them to create a viable digital image file for sublimation.

After going through their own quality check process, the specialist will then print your desired image to an ink transfer plate and heat up both the plate and the solid surface material. Once the materials reach the proper temperature, a vacuum process is used to transfer the ink on the transfer plate (now in gaseous form) into the Corian or other solid surface material. (Note: this process may vary slightly between dye sublimation specialists.)

**new**

**Slant/Fin.**

# Revital/Line

Aluminum Baseboard Replacement Cover

**Replacement covers that breathe new life into your aging baseboard!**

Bring brilliance into any room

Available in Decorator Colors

No tools needed for most installations! Slips right over existing back panel!

Laboratory tested for maximum heat output!

Made from Recycled Aluminum!

**Introducing The Easiest Replacement Cover Available!**

Revital/Line Replacement Covers slip right over your existing baseboard back panel! It couldn't be simpler! What's more, our covers have been laboratory tested to produce up to 40% more heat output than competitive replacement brands in the market today. Revital/Line covers nearly all of the standard residential baseboard installed in homes today. (Up to 8 1/2" H x 3" D) Contact your local representative or go to our website to find out more about this exciting new product!

**Slant/Fin.**

Since 1949  
**BOILERS & BASEBOARD**

*We Build Trust and Comfort*

[www.slantfin.com](http://www.slantfin.com)



Presto! Your desired image or text is now permanently embedded into the surface, creating a very artistic and unique piece. This printed solid surface piece can now be fabricated, shaped and thermoformed in the same manner as any other piece of solid surface material.

Think of your solid surface as a blank canvas. Just like Van Gogh, Monet, Picasso or Warhol, envision your solid surface material waiting to spring to life with whatever imagery you desire. Through the dye sublimation process, virtually anything you can imagine can be masterfully transferred into your solid surface. Possibilities range from larger endeavors like business signs, paneled installations, wall décor and artistic flourishes added to countertops to smaller projects like promotional goods, coasters, hot plates, trivets or customized trophies or gifts.

Dye sublimation is unique, in that the process permanently embeds and preserves your selected image or text in the

actual solid surface substrate. As a result, you also have the creative flexibility to choose between a matte or high gloss finish for the final touch.

Quite literally, dye sublimation allows your imagination to be the limit on what you create.

## VERTICAL APPLICATION

The installation process for solid surface vertical applications, such as shower walls, tub surrounds, wainscoting and wall cladding, are procedurally very similar, therefore we'll address them as a group.

**Dry and Wet Locations**—To begin with, make sure the wall surface that the solid surface material will be adhered to is sound and made of the correct materials for the intended use. For dry locations, the supporting wall material can be a sound tile or plaster surface, MDF particle board, drywall/Sheetrock, moisture-resistant plywood, or cement backer board.

For wet locations that are above grade (in a portion of a building

that is above ground), amend the materials list above as follows: do not use MDF; use marine-grade plywood and use moisture resistant drywall/Sheetrock. If the wall you are installing on is below grade (in a portion of the building that is below ground, like in a basement), it is not recommended to use solid surface due to moisture seepage into the wall.

Before fastening the solid surface sheets in place, fit, scribe and cut, or sand the edges if need be, to ensure the sheets fit correctly. If two or more sheets need to be seamlessly joined, mirror-cut and seam them together with a solid surface backing strip glued in place. The wall surface will need to be notched to accommodate the thickness of the backing strip since it is on the back facing surface of the seamed sheets. Prepare the edges before seaming by using a tongue-and-groove router bit set or a wavy bit set. This will help ensure the sheets are level with each other and minimize the amount of sanding required to hide the seam location.

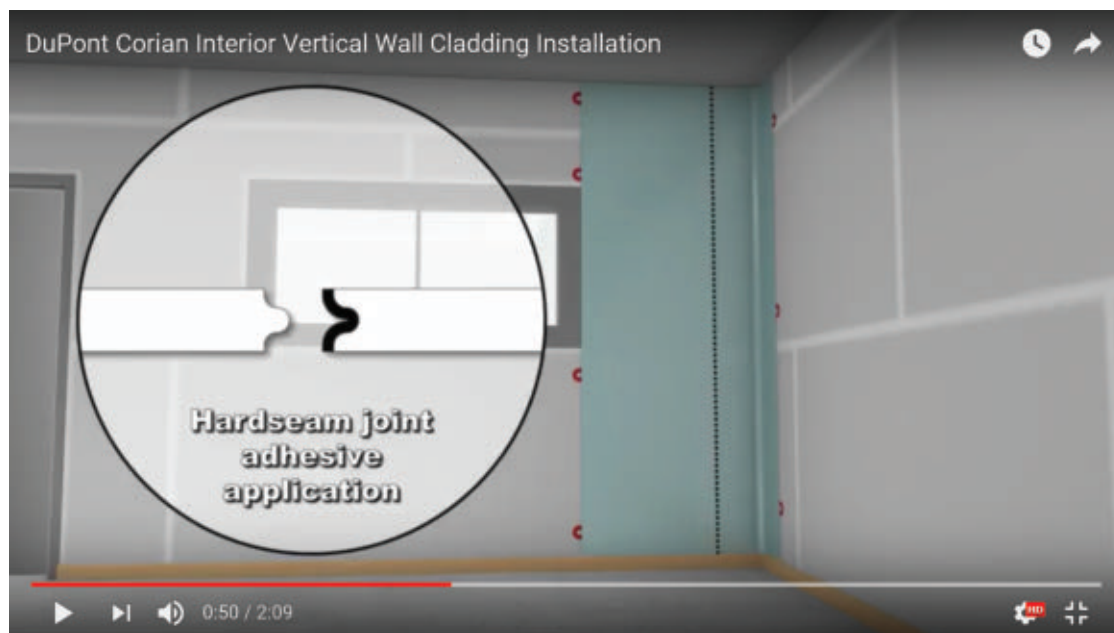
Fasten the solid surface sheets to the wall by placing 100-percent silicone sealant around the entire perimeter of the sheet. For the interior of the sheet, use thumb-size daubs of silicone every 8-12 inches in a grid pattern. Alternatively, you can also run vertical beads of silicone every 8 inches. However, if the wall surface is uneven, the tall daubs of silicone are generally a better choice since they will span the gap from the wall to the back of the solid surface sheet.

You can use large blobs of hot melt glue to hold the sheets in their final position while the silicone cures. To do this, pull the sides or edges away from the wall just enough to place the large



*Although often used for countertops, solid surface can be installed vertically for applications such as shower walls, tub surrounds, wainscoting, wall cladding—and even bookcases.*





© DuPont Corian®

*DuPont offers detailed instructions and helpful online videos to walk you through the installation process.*

blobs of hot melt glue, and then press and hold in place until it solidifies. You can also use braces to hold the sheets correctly in place and forgo using the hot melt glue.

**Flat Wall Treatments**—For flat wall treatments, like shower walls, tub surrounds, wainscoting and wall cladding, there are three popular ways to deal with the flat seams where two panels come together. The first is called a Batten strip. It is usually an inch or more wide, with eased edges (edges that are rounded) and is held with silicone over the 1/8-in. seam, which is also filled with silicone. A second option is to silicone the seam and then leave it uncovered. A third option is to create a “hard seam” by gluing the sheets together with solid surface adhesive. If constructed well, this seam will not be visible.

The length of sheets that can be “hard seamed” is limited when working with large expanses of solid surface (commercial applications). This distance is determined by the variation of temperature

that exists. For example, if the temperature varies, from high to low, by 40 degrees, then the maximum length the seamed surface can be is 18 feet. However, if the temperature only varies by 10 degrees, then the length can increase to 72 feet. Therefore, a silicone joint that allows for expansion or contraction needs to be placed every 18 feet or 72 feet, respectively. You can refer to DuPont’s technical bulletin, “Dupont Surfaces: Dupont Corian Solid Surface Commercial Interior Surface Installation” for more details and information.

**Corners**—When working within an inside corner, it is recommended to use a silicone soft seam where the sheets come together. You can then either leave the seam like it is, or use one of several decorative trim covering options to make it more aesthetically pleasing. These trim pieces range from a triangular strip to a coved strip affixed with silicone over the corner. Hard seaming is also an option but requires special fabrication tools or thermoforming.

Outside corners can be either hard or soft seamed. These treatments are explained with diagrams in the Dupont Surfaces technical bulletin.

**Showers and Tubs**—When working with showers and tubs, install the back wall first and leave 1/8 inch on all sides for expansion. Scribe and cut the sidewalls and cut any needed holes with a Rotozip tool, router or hole saw. After you attach the sidewalls and they are set, wipe with denatured alcohol in the places where silicone will be applied. Apply silicone from the bottom up and remove any excess with denatured alcohol after it sets. Wait to apply silicone until after the denatured alcohol has evaporated.

**Wainscoting and Wall Cladding**—When using solid surface for wainscoting (paneling) and wall cladding, leave a 1/8-in. gap at top and bottom and inside corners and apply silicone around the edges to allow for expansion. Attach the panels to the wall in the same manner as described above.



Make sure to use a router for cutting the solid surface material or dressing the edge of a saw-cut piece of material. A router creates a smooth edge, whereas a saw leaves a marked edge that may lead to fractures eventually. Using a saw can create fractures or cracks that can extend into the material and create larger cracks.

When attaching solid surface baseboard or chair rail moldings, apply silicone in continuous beads near the top and bottom of each strip, which allows for expansion and contraction. Apply hot melt glue in dabs to hold the molding in place while the silicone is setting.

**Remember:** Solid surface expands and contracts a fair amount, therefore it should not be adhered using a hard seam adhesive or it will break itself loose.

## FINISHING TOUCHES FOR SOLID SURFACE

One of the excellent characteristics of solid surface is that no finishing touches like paint, varnish, sealers or oils are needed. The desired shine, or lack of, is achieved with the final sanding grit. This ease of finish is a future plus if or when the surface becomes soiled or has a blemish. The spot can be removed with soap and water, cleaners, scouring powder, or sandpaper, depending on what is needed. Now your surface is ready to provide years of enjoyment and low-maintenance use.

## WHO CAN PURCHASE SOLID SURFACE AND WHERE?

Solid surface can be purchased in sheets from many places. Distributors sell solid surface, but generally only to professionals. Non-professionals can typically find and purchase solid surface through online marketplaces, such



*Solid surface will not be damaged by water, so it makes an excellent material for wet environments such as kitchens, baths and even shower surrounds.*

as SolidSurface.com, eBay or Craigslist. SolidSurface.com offers almost all brands as well as accessories needed to work with solid surface. It is one of the few places where currently stocked full sheets along with remnants of solid surface are available to anyone, including the woodworker, cabinet

maker, remodeler, fabricator, sign-maker and DIY'er.

Whether you choose Corian or any other brand of solid surface, the creative possibilities are endless. Create something unique with solid surface, thermoform it or use the dye sublimation technique for your next DIY project. **EHT**



# New Options in Cladding



mere 5/8 inch, offering a sleek profile a full 3 inches smaller than traditional brick. Available in a myriad of colors and profiles, it easily mixes with other façade or cladding materials. Authentinc Brick is also manufactured from natural materials, so it's free of volatile compounds. With easy installation (via four simple methods), it can be used as a DIY project and applied almost anywhere in the home—ceiling, exterior gable, accent wall, fireplace surround, inside or outside. Visit [meridianbrick.com](http://meridianbrick.com).



By Belinda Remley

**T**he term “cladding” refers to a building or wall’s outermost layer of material, often called “siding” when used for exterior applications. Cladding is also used indoors as a decorative design element. From the look of cedar shake to the charm of authentic brick, you’ll find a vast range of styles and materials to achieve practically any look you can dream up. Here’s a roundup of some of the latest options on the market.

## AUTHINTIC BRICK BY MERIDIAN BRICK

Meridian Brick is a new company founded in 2016 through a joint venture of North America’s most

respected brickmaking organizations, Boral Bricks and Forterra Brick. At the 2018 International Builders’ Show the company introduced Authentinc Brick (shown at top), a genuine, classic, 100-percent fired clay brick, bringing all the traditional warmth and charm to any interior or exterior application. Authentinc Brick is real, honest-to-goodness Meridian Brick—but just the brick face. A significantly lighter weight enables levels of design freedom not seen before in the brick industry, meaning simple installation with no more lost floor space. Weighing 70 percent less than traditional brick, Authentinc Brick projects from the wall a

## BARN WOOD FROM ENVIRONMENTAL STONeworks

At the 2018 International Builder’s Show, the *EHT* staff got to see and touch this product up close. Its authentic-looking detail is drool-worthy if you’re looking for a rustic cladding with low-maintenance appeal. Brand-new from Environmental StoneWorks, Barn Wood combines the natural look of wood with the beauty, quality and easy installation of stone veneer. The convincing “weathered” texture and intricate color treatment make this new stone cladding look like it was rescued



EST 1928

# WOODCRAFT®

QUALITY WOODWORKING TOOLS •  
SUPPLIES • ADVICE®

## SMOOTH OPERATORS

Installing drawer slides just got easier with precision slide hardware from Woodcraft that delivers a smooth, quiet operation. We offer ball bearing side mount slides, undermount slides, center mount slides and rear mounting slides from quality brands such as HIGHPOINT®, Knappe & Vogt, Salice and Blum, along with drawer slide mounting tools that eliminate the tedious task of measuring and marking every slide.



For A Free Catalog Or To Find Your Local Woodcraft Store, Visit [woodcraft.com](http://woodcraft.com) Or Call 800-225-1153. For Technical Support Call 800-535-4486. For Information On Woodcraft Retail Franchise Opportunities, Visit [woodcraftfranchise.com](http://woodcraftfranchise.com). Follow Us: [f](#) [t](#) [p](#) [@](#) 18XT05P



from a forgotten farmhouse, but it spares you the drawbacks of splinters and rot.

Another new option from Environmental StoneWorks is Clean Brick, which is precisely cut with a linear, modern look and is available in Slate Gray and Chalk Clean profiles. For more information, visit [www.estoneworks.com](http://www.estoneworks.com).

### THERMORY DRIFT CLADDING AND DECKING

Drift is the latest innovation from Thermory USA—the world leader in thermally-modified exterior wood products since 1997. Created from thermally-modified spruce using a process of heat and steam that enhances the wood's stability and lessens its weight, Drift provides the increasingly-popular look and texture of



reclaimed barn wood but with consistent quality, performance and supply. Available in both cladding and decking products, Drift has a Class 1 durability

rating which equates to 25 years or more of rot resistance, far superior than any unmodified wood product. To learn more, visit [www.ThermoryUSA.com](http://www.ThermoryUSA.com).

# Stake Rake

The Only Self-Standing Rake!

**NEW PRODUCT!**

Searching for  
Distributors/Retailers

Contact Us at  
[johnnytylerfranklin@stake-rake.com](mailto:johnnytylerfranklin@stake-rake.com)  
or 601-381-0494

» Self-Standing

» Patent-Pending

» High-Quality

» Decreases Back Pain

» Prevents Tripping

Sold online at  
**Amazon** or  
**[www.stake-rake.com](http://www.stake-rake.com)**



## BEACH HOUSE SHAKE BY TANDO

Derby Building Products exhibited Beach House Shake at IBS 2018. A low-maintenance exterior cladding option, Beach House Shake comes in three colors, Hatteras (mid-tone gray that emulates weathered white cedar), Pacifica (the look of new western red cedar), and Sandcastle (the look of fresh white cedar). All colors are indistinguishable from real cedar with natural, subtle variations, grains and saw-cuts. Whereas real cedar shakes will curl, crack, split and are subject to rot and decay from moisture, insects and the environment, Beach House Shake requires no upkeep and will not deteriorate. Featuring an authentic five-inch reveal, it is lightweight and avail-



able in one-course panels that can be installed by one person using regular woodworking tools and a nail gun. Impervious to moisture, Beach House Shake can be used at the roofline or ground level without issues, and it's backed by an industry leading 50-year "Performance Plus" warranty. Learn more at [www.tandobp.com](http://www.tandobp.com).

## BRICK AND STONE FAUX MASONRY PANELS FROM NU-WOOD

Nu-Wood, a leading synthetic millwork manufacturer, offers faux polyurethane brick and stone masonry panel options in eight different styles and 15 different hand-glazed and finished colors. A variety of profile molds are used for each panel design to eliminate repeat patterns, making the instal-

# EarthWay®

## EV-N-SPRED FLEX-SELECT

WITH

## SIDESPRED-CONTROL™

**The NEW F80 with  
SIDESPRED-CONTROL™**  
is the "DEFLECTOR-LESS" way  
to spread up to the edge  
of beds, sidewalks, driveways,  
and any place that you  
don't want material to go!

**Seed, Fertilize, Topdress - all with one spreader.  
You have never seen anything like it!**

**For information call 1-800-294-0671  
or visit [www.earthway.com](http://www.earthway.com)** patents pending

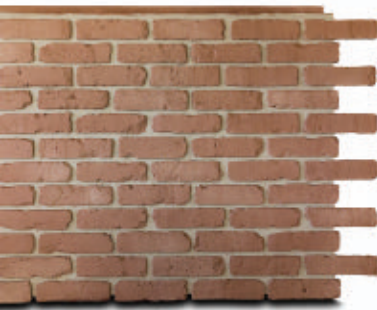








lation of multiple panels more realistic. The lightweight panels have interlocking joints for side-to-side installation ease along with overlapping top and bottom ledges. The durable faux masonry panels can be used for both interior and exterior applications on homes or commercial projects. Stone and brick



styles available for the panels include: Castle Rock, Cobblestone, Fieldstone, Ledgerstone, Stacked Stone, Weathered Brick, Classic Brick and Original Brick. Each panel size is between 33 and 37 inches high, with a length of about 48 inches, and since they're each individually hand-glazed and finished, no two panels are exactly the same. The slight color variations in each panel make them resemble natural stone and brick products. Made in America, the lightweight cladding is easy to install for both the professional and do-it-yourselfer. The interlocking panels are impact-resistant and molded from a resilient closed-cell structural polyurethane so they resist fading and will never rot, crack or attract insects. Learn more at [www.nu-wood.com](http://www.nu-wood.com).



### TWO ADDITIONS TO LP SMARTSIDE

LP SmartSide is a durable siding product that offers the warmth and beauty of traditional wood with the durability of engineered wood. The new LP SmartSide Perfection Shingle features a fine sawn wood texture with no knots. With a 5-1/2- to 6-1/2-in. reveal, Perfection Shingle achieves a balance of cedar-like texture with the clean lines of shingles.

LP SmartSide has also added the new LP Cedar Texture Vertical Siding to its product line. The 16-ft. length allows for one-piece installation and eliminates horizontal joints. It can be used in combination with 16-ft. LP SmartSide Cedar Texture or Reversible Trim for a board-and-batten look. It can be used across the entire structure or used as accent panel on tall walls, vertical columns, gable ends and more.

Both new LP siding options are backed by a 50-year prorated limited warranty with a 5-year, 100-percent labor and material replacement warranty. Learn more at [www.lpcorp.com](http://www.lpcorp.com).

### ASPYRE COLLECTION FROM JAMES HARDIE

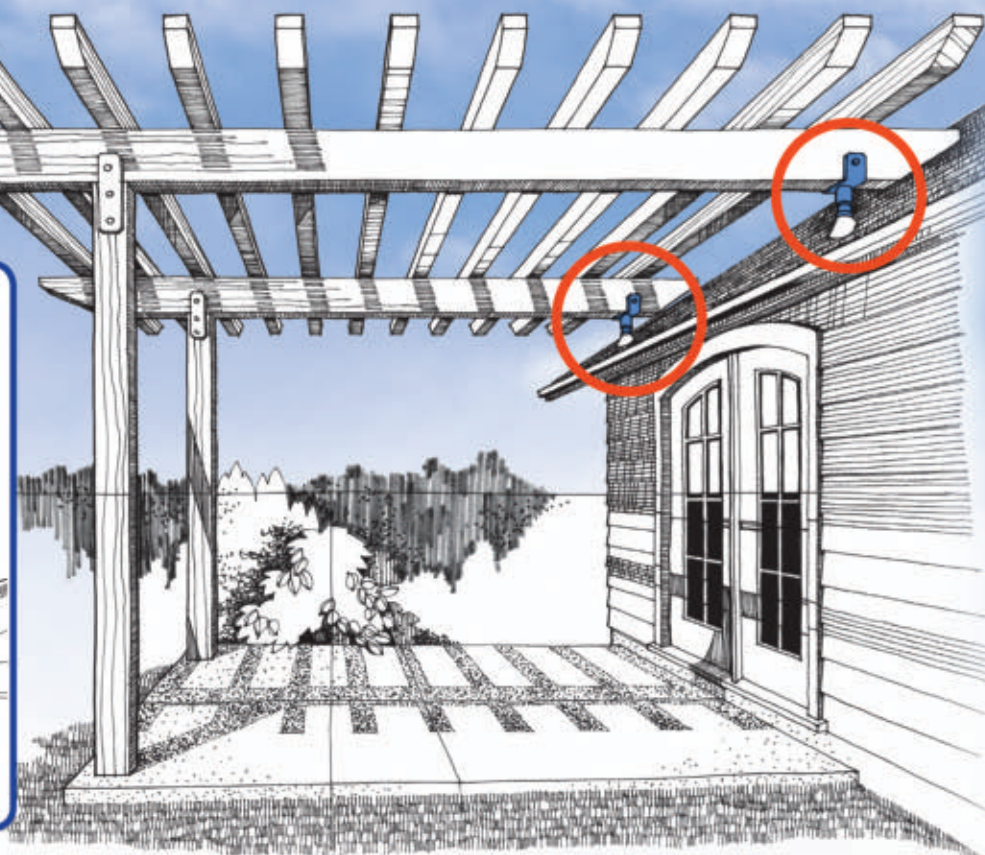
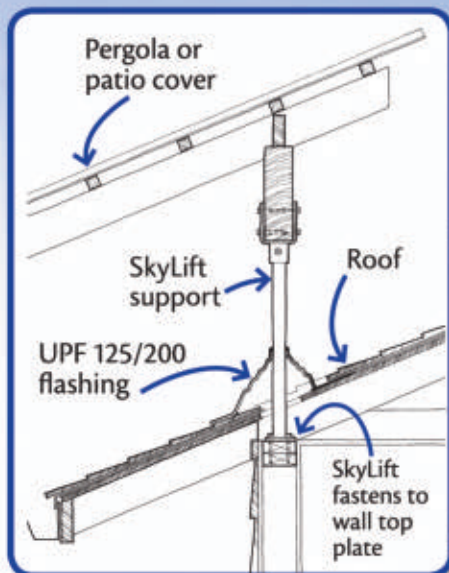
The Aspyre collection is a new luxury siding option among the

James Hardie fiber cement products. The collection combines two product lines that can be used individually or in combination for enhanced design possibilities. James Hardie paired the thick distinctive profiles of its Artisan siding with the smooth, geometric Reveal Panel System, allowing architects and builders to create designs that range from traditional to ultra-modern. The wide assortment of textures, profiles and products included in the new collection give designers the flexibility to create lasting, stand-out projects using the uncompromising performance and durability of fiber cement. Learn more at [www.jameshardie.com](http://www.jameshardie.com). **EHT**





# A more stable, simplified tie-in for new or existing patio structures.



Available in various saddle sizes.

Elevates wood-framed patio covers • Pergolas • Arbors • Gabled covers

| Size Availability                              | 18" HEIGHT<br>STANDARD            | 24" HEIGHT<br>STANDARD            | 18" HEIGHT<br>ROUGH            | 24" HEIGHT<br>ROUGH            |
|------------------------------------------------|-----------------------------------|-----------------------------------|--------------------------------|--------------------------------|
| <b>STANDARD DUTY</b><br>For lightweight covers | <b>SK18-B</b><br>3.5" Saddle      |                                   | <b>ROUGH BEAM</b>              | <b>ROUGH BEAM</b>              |
| <b>HEAVY DUTY*</b><br>For seismic or high wind | <b>SK18-HD 3.5</b><br>3.5" Saddle | <b>SK24-HD 3.5</b><br>3.5" Saddle | <b>SK18-HD 4R</b><br>4" Saddle | <b>SK24-HD 4R</b><br>4" Saddle |
|                                                | <b>SK18-HD 5.5</b><br>5.5" Saddle | <b>SK24-HD 5.5</b><br>5.5" Saddle | <b>SK18-HD 6R</b><br>6" Saddle | <b>SK24-HD 6R</b><br>6" Saddle |



## The benefits of SkyLift Roof Riser Hardware

- ✓ Affordable installation
- ✓ Simplifies rain gutters and roof tie-in
- ✓ Structurally sound and visually appealing
- ✓ Increases natural light and air flow
- ✓ Utilizes leak-proof UPF 125/200 flashing
- ✓ Eliminates low slope, provides more headroom

**SkyLift**  
roof riser hardware™  
Patent Pending

Learn more at [SkyLiftHardware.com](http://SkyLiftHardware.com) and view the short installation video.



# Why is My Engine Ticking?

*Keep your engine oil where it belongs.*



© Antonio Diaz

one of the ticks you're hearing could be your injectors firing. Your fuel injectors are small electrical valves that open and close very quickly, allowing a certain amount of fuel to be injected with the air your engine is drawing in. Some vehicles, like many Subarus, have injectors that you can actually hear opening and closing at idle. It should sound like a sharp pencil tapping on a desk and be very rhythmic. Injectors ticking are not a problem, and you can drive on in confidence.

Another tick could be from an exhaust gas leak somewhere in your exhaust manifold.



**E**ngines can make all sorts of funny sounds, and honestly, we shouldn't be surprised when they do. There are all sorts of moving parts and rotating things, not to mention explosions going on inside of them. As a mechanic, you hear the phrase "my engine is making a strange noise" relatively often. Strange noises can be anything from humming to screeching or clunking. In this article we're going to talk through a ticking engine and how to repair the problem.

The first thing to realize if you have a tick in your engine is that it

is likely due to one of the reciprocating components rather than a rotating component. Things like bad bearings or accessories will usually make whirring or whining noises as they rotate, while reciprocating components like your pistons, rods, valves and pushrods usually make ticks, clunks or ratcheting type sounds.

The tick in your engine could be from normal wear of your motor running or it could be an indication that something is wrong. First, let's talk through some ticks your motor may have that aren't a problem. If you have a fuel injected car,



brought to you by

**BlueDevil**  
PRODUCTS  
STOP LEAKS PERMANENTLY. MAXIMIZE PERFORMANCE.

The last likely cause of your engine ticking is a noisy valve train. Your valves have to open and close once for every two times your engine spins around. In an overhead cam engine, the camshaft itself depresses the valve, while in single-cam engines, the cam actuates push rods that open the valves by moving a lever called the rocker arm. Since your valves move very quickly and only move a short distance, the distance from the cam to the valve or push rod must be very precise. These distances are controlled using shims or other adjustments, and as normal wear occurs, those distances can move out of tolerance. If there is any play in the components, you can usually hear them “tick” as they shift around while your engine is running. Also, your valve train requires a lot of lubrication, so a tick could indicate that you have a low oil level, or possibly even that you need an oil change because your old, dirty oil just isn’t keeping things lubricated enough.

If you hear a tick coming from your motor, it could be indicating you have a low oil level. Having a low oil level in your vehicle can cause a significant amount of damage or even be catastrophic to your vehicle’s engine. If you hear a tick coming from your motor, check the oil level immediately. If you find that you have a low oil level, consider adding BlueDevil Oil Stop Leak as you top off your engine oil. BlueDevil Oil Stop Leak is specially formulated to restore the seals and gaskets in your engine to stop both large and small oil leaks. Ensuring you have a leak-free engine will make sure you have enough oil in your engine, eliminating your tick and making sure everything says lubricated and safe. **EHT**

**Editor’s Note:** This article was sponsored by BlueDevil Products®, manufacturers of quality sealants for the Automotive Aftermarket industry. The company currently

supplies over 400 distribution centers across North America, South America, Europe, Asia and South Africa. For more information visit: [www.gobdp.com](http://www.gobdp.com).



**GOOF PROOF**  
Installation System  
Incredibly Simple Incredibly Strong

### GOOF PROOF CORNER SHELF

Made of sturdy PVC and patented mounting system (Retro Shelf Mounting System).  
This shelf is installed in less than 5 minutes. The Goof Proof Tile Ready corner shelf comes complete with template, mounting rails, tile ready shelf and all mounting adhesives needed.



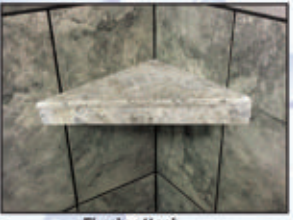
Position template



Glue on rails in slots



Silicone back and fill grooves



Firmly attach

### GOOF PROOF SHOWER SEAT

- Easily Adjustable width 24" or 30"
- Six pre-drilled Mounting holes
- Level vials ensure correct pitch
- Full width tile support ledge
- Waffle pattern assures optimal tile adhesion



Measure



Fasten



Tile

**Designed for New and Retro Fit/Existing Installations**

Check our website for videos and more information: [www.goofproofshowers.com](http://www.goofproofshowers.com)  
Mark E Industries, Inc. Toll Free: 1-866-771-9470 [info@markeindustries.com](mailto:info@markeindustries.com)



# HOT PRODUCTS

## LUFKIN SELF-CENTERING TAPE MEASURE

Crescent/Lufkin introduced a redesigned version of its popular Self-Centering Tape Measure, which makes finding the midpoint of measurements quick and easy. Improvements include a new ergonomic case for added comfort and a quad-rivet end hook for extended blade life. The Self-Centering Tape Measure is perfect for hanging pictures, finding the midpoints of walls, and many other measuring jobs around the house. It features unique blade markings, resulting in a tape that takes the math out of finding the midpoint of any measured distance. A black upper scale shows the actual measurement; a lower scale directly beneath it shows the midpoint in red. For example, if the upper scale reads 2-1/4 inch, the lower scale will show 1-1/8 inch. Visit [www.crescenttoolco.com](http://www.crescenttoolco.com) and [www.lufkintool.com](http://www.lufkintool.com).



## LAKEWOOD DIY KIT FROM SENTRY BUILDINGS

Available in two sizes, 12x18-ft. and 13x24-ft., the Lakewood DIY Kit provides a large amount of space for storage or use as a cabin or workshop. Featuring an expansive loft with 6ft., 1in. headroom you'll have additional space for storage, work area or a sleeping loft. Premium-grade 2x4 studs and framing, 2x6 loft floor joists and a 2x6 truss system ensures you a quality and sturdy building which you can insulate for a finished interior. In response to the growing trend for customizable outbuildings, the Lakewood is designed so the homeowner can build to suit their needs. Six windows are included for installation in the gables and dormers. These windows add a great deal of light

to the interior and provide ventilation while adding an attractive look to the building. The first floor offers an opportunity for the homeowner to choose the type, size and number of windows and entryways they prefer. Items such as doors and windows are purchased separately and installed in the locations of your choosing during construction. Because these locations are not predetermined, the combinations are nearly limitless and make every finished building unique. Detailed instructions and pre-cut components along with Sentry Buildings' knowledgeable service team will make your new building a fun and rewarding project. Visit [www.barnkits.com](http://www.barnkits.com).





## SNAPPPOWER GUIDELIGHT SERIES

The GuideLight 2 PLUS and GuideLight 2 PLUS for GFCI, are the newest products in SnapPower's GuideLight outlet cover line. The GuideLight 2 PLUS is the first SnapPower product for ground fault circuit interrupters (GFCIs), providing owners with complete pathway lighting coverage for every room of the home. The GuideLight 2 PLUS features a soft diffused light bar for smooth ambient lighting, a low-profile ergonomic on/off switch on the plate cover, and brightness settings that give users complete control over their pathway lighting. Visit [www.snappower.com](http://www.snappower.com).



## LINEAR STAIR SYSTEM FROM L.J. SMITH

The Linear Stair System from L.J. Smith now has metal newel posts added to the product line. Each newel post is sized and pre-drilled for simple installation of the company's Marine Grade 316 stainless steel cable and cable fittings. Box treads are available to create a modern and open designed stairway. The company also offers newel mounting kits and post-protector tubes. L.J. Smith is the largest stair parts manufacturing company in the U.S., featuring wooden and ornamental iron balusters, stainless steel cable and tube infills, newel posts, hand rails and accessories—all defined by their unique designs, durability and good looks. Visit [www.ljsmith.com](http://www.ljsmith.com).



## KLEIN BATTERY OPERATED TOOLS

Klein Tools brings over 160 years of quality, durability and expertise to a new line of battery-operated tools, including a variety of cable cutters, crimpers and an impact wrench, all powered by DeWalt lithium-ion batteries. Engineered primarily for professional electricians and tradespeople, Klein's new battery-operated tools help workers reduce the time and effort spent on each task, from crimping copper or cutting aluminum to driving fasteners into wood, metal or concrete. Visit [www.kleintools.com](http://www.kleintools.com).

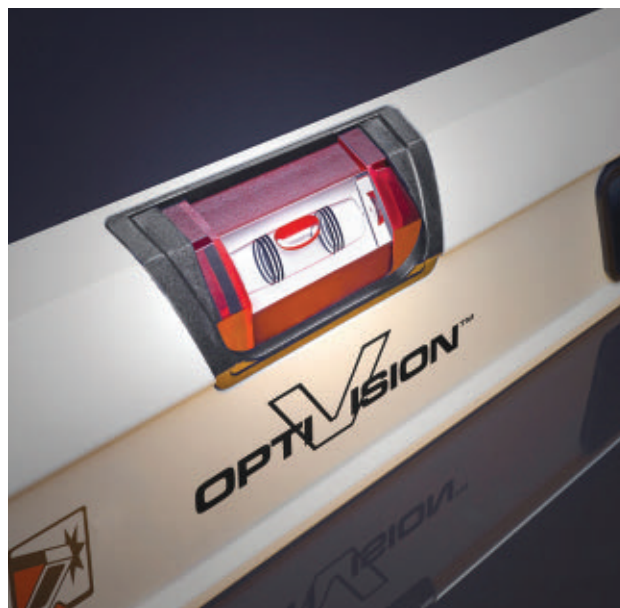




# HOT PRODUCTS

## KAPRO OPTIVISION RED LEVELING TECHNOLOGY

Kapro Tools' patented OptiVision vial features an easy-to-read vial bubble with super defined edges and strong surrounding color definition, as well as an extra set of reading lines for setting gradients at 1 and 2 percent. The OptiVision Red's unique epoxy-locked, tilted setting offers a direct line of sight to the bubble, which makes reading the vial easy and provides more precise results. The high contrast ratio between the red bubble and vial liquid in Kapro's solid acrylic vials makes visibility up to eight times easier than clear liquid vials with white backgrounds. OptiVision provides superior visibility in low light and bright light and is UV-resistant, meaning the vial always maintains its original color contrast and visibility. The OptiVision line includes the 905 Condor Box Level, 935 OptiVision Red 10-inch Toolbox Level, 946 Smarty 4-inch Magnetic Pocket Level and 930 SmartCast Heavy-Duty Mason's Level. Visit [kapro.com](http://kapro.com).



## HOME DESIGNER DECORATIVE GLASS WINDOWS FROM HY-LITE

The Home Designer line of privacy windows are unlike anything you've ever before seen from Hy-Lite. Whether the style is contemporary, transitional or traditional, Hy-Lite has something for everyone. Inspired by designers across the country, the Home Designer Collection features four unique privacy windows: Metro, Mission, Prairie and Baroque. Available in a wide range of sizes, starting with 24x24-in. and going to as large as 48x48-in., the design styles solve the need for privacy, light and design appeal in the home. Responding to industry demand, Hy-Lite has also introduced an operable awning window in its popular Home Designer Collection. The new operable awning windows are available with white, tan and driftwood vinyl frames. Each window features coordinating screens, latches, fold-down handles and anti-corrosion hardware. Visit [www.hy-lite.com](http://www.hy-lite.com).





|                                |        |                             |     |
|--------------------------------|--------|-----------------------------|-----|
| Armstrong Clark .....          | 15     | Maze Nails .....            | IBC |
| B'laster .....                 | 2,3    | Nightlock .....             | 49  |
| Bigfoot Systems .....          | 16     | O'Berry Enterprises.....    | 14  |
| BlueDevil Products .....       | IFC, 1 | Perma-Chink Systems.....    | 18  |
| Calculated Industries .....    | 40     | Quickscrews.....            | 7   |
| California Air Tools .....     | 10     | Red Devil .....             | 28  |
| Call 811.....                  | 17     | Ryobi .....                 | 11  |
| Col-Met .....                  | 39     | SePRO .....                 | 23  |
| Deck2Wall Spacers.....         | 38     | Shedkitstore.com .....      | 29  |
| DeckWise.....                  | 37     | Shelves That Slide .....    | 21  |
| Door Stud .....                | 31     | SkyLift .....               | 65  |
| DuckTape.....                  | 55     | Slant/Fin .....             | 56  |
| E-Z Gutter .....               | 35     | SolidSurface.com .....      | 72  |
| EarthWay.....                  | 63     | Stake Rake .....            | 62  |
| Flex Cabinets.....             | 24     | Stop & Go Tire Plugger..... | 20  |
| Fontanot Arke .....            | BC     | Summit .....                | 43  |
| Forney .....                   | 27     | T-Rex .....                 | 22  |
| FrogTape .....                 | 21     | TG Tools.....               | 19  |
| Goddard Spiral Stairs.....     | 54     | Tjernlund Products.....     | 30  |
| Healthful Home .....           | 8      | Trim-A-Slab .....           | 20  |
| Keystone Hardscapes.....       | 53     | U2 Fasteners.....           | 5   |
| King Architectural Metals..... | 13     | UGL.....                    | 41  |
| Lonza Wood Protection.....     | 47     | Wild Hog Railing .....      | 36  |
| Lumber Liquidators.....        | 9      | Woodcraft .....             | 61  |
| Mark E. Industries .....       | 67     | Zerust.....                 | 14  |



SAVE \$\$\$\$ HAVE FUN

# DIY COUNTERTOPS

kitchen • bath • laundry • garage • *be inspired*

for the extreme DIY'er in you



SolidSurface.com offers the sheet goods, adhesives, abrasives and other tools & supplies to enable you to build your dream countertops or other solid surface project. Solid surface material, best known as Dupont™ Corian®, works like wood with carbide-tipped tools and glues together seamlessly with color-matched adhesives.

Visit <http://solidsurface.com> now to see our great selection of material.



Custom  
**Corian®**  
**Vanity Tops, Too!**  
<http://solidsurface.com/vanities>



# TAKE 5

with worry-free  
**MAZE NAILS**  
on your next  
roofing project!



## TOP 5 ADVANTAGES ...

- American Made Roofing Nails
- Miami Dade County Approved
- Double Hot-Dipped Galvanized and Stainless Steel
- Ring Shanks Hold Tight in High Wind Areas
- Available in Coils and Hand Drive

MIAMI-DADE COUNTY  
APPROVED



100%  
made in the  
USA



**MAZE  
NAILS**

Building  
America  
one NAIL  
at a time

**1.800.435.5949 • mazenails.com**  
**NAIL IT ONCE. NAIL IT RIGHT.®**

Division of W. H. Maze Co.



Helping to build America since 1848



fontanot  
arke

# SPIRAL STAIRS AND MODULAR STAIR CASE KITS

AVAILABLE THROUGHOUT THE USA, ARKE SPIRAL AND MODULAR STAIRCASE KITS CAN BE BUILT IN A DAY BY THE AVERAGE DO-IT-YOURSELF HOME ENTHUSIAST.

## The OAK 70.XTRA ▶

The Oak 70.XTRA is an adjustable premier series spiral staircase that features solid Oak wooden stair treads and landing to complement and add style to any interior living space. Surrounding the full length of the staircase, the horizontal balusters and railing design is visually unique when compared to the traditional vertical baluster design of most stairs. The staircase can be easily installed by the homeowner in a single day using common household tools. The Oak 70.XTRA is available in 2 diameter sizes and is available in 2 choices of color...Hi-Gloss Black and Hi-Gloss White.

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



(888) 782-4758



[www.arkestairs.com](http://www.arkestairs.com)