DOES YOUR ROOF NEED REPAIRS? LEARN HOW TO TELL!

THE FAMILY

Handyman®

#1 in DIY Home Improvement

Backyard oasis

"We built it ourselves in two weekends"

JUNE 2015

Gain extra storage in your kitchen cabinets

GROW A LUSH LAWN WITH LESS FERTILIZER

How to buy the best laminate flooring

CRUSH “HONEY-DO” LISTS.

2015 CHEVY SILVERADO 1500

AVAILABLE 355-HP 5.3L V8 ENGINE.
HIGH-STRENGTH STEEL FOR HIGH-STRENGTH DEPENDABILITY.

©2015 General Motors. All rights reserved. The marks appearing in this ad are the trademarks or service marks of GM, its subsidiaries, affiliates or licensors.

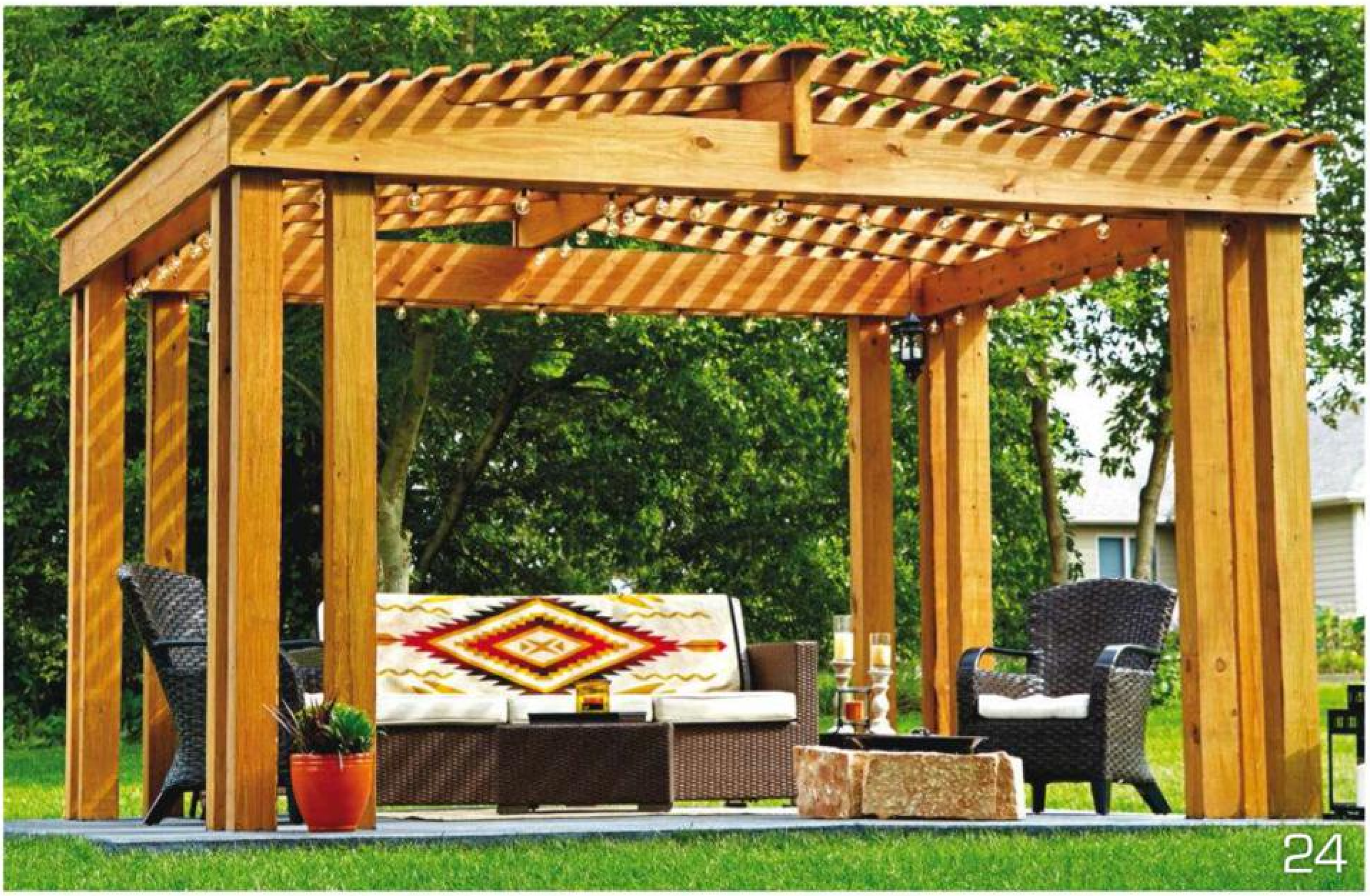
FIND NEW ROADS™

CHEVROLET

Storemags

Table of CONTENTS

JUNE 2015 familyhandyman.com



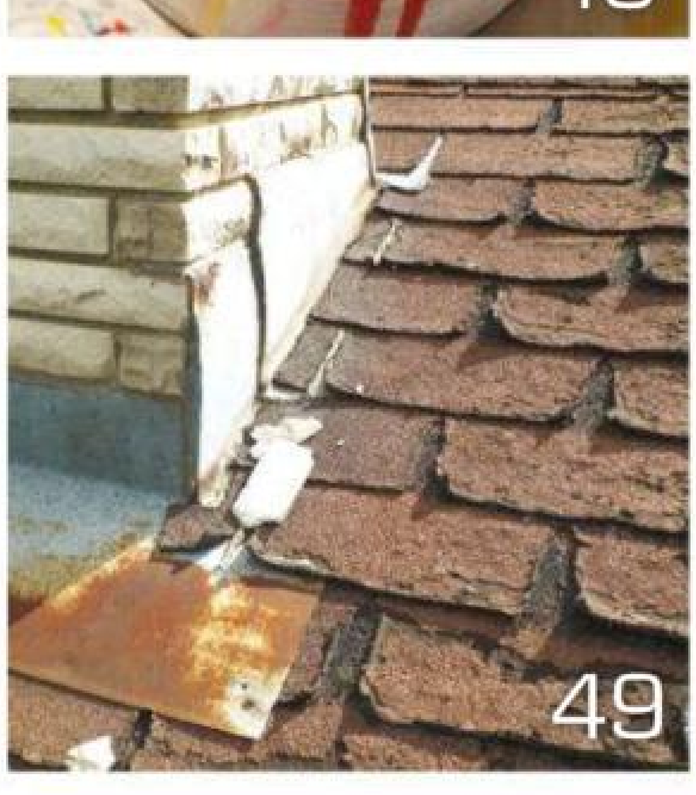
FEATURES

16 Great new paints
The folks in lab coats are constantly making paints better. Here's what they've done for you lately.

24 Perfect pergola
A huge, intimidating project? Take a closer look and you'll see how simple it really is.

44 Cabinet door shelf
Add easy-access storage under your sinks, even if you're an absolute beginner in DIY.

49 Roof problems
A 10-minute inspection and preventive maintenance now can save you thousands in repairs later.



NOTE: Skipped pages represent advertisements that are not included in this digital edition.

EXCEPTIONAL BEAUTY.
LASTING PROTECTION.
SIMPLY. DONE.

Elite Unlocking the Beauty of Wood, Olympic, Olympic & Design and Woodland Oil are registered trademarks and *Color Rich* and *All-Climate Protection Package & Design* are trademarks of PPG Architectural Finishes, Inc. *Lowe's* and the *Gable Design* are registered trademarks of LF, LLC. All are used with permission. © 2015 PPG Industries, Inc. All Rights Reserved.

With an ALL-CLIMATE PROTECTION PACKAGE™ and COLOR RICH™ Technology,
our Advanced Stain + Sealant in One delivers a rich, beautiful look that lasts for years.
OLYMPIC® Stain — America's most trusted brand since 1938.

Exclusively at LOWE'S

Table of CONTENTS

JUNE 2015 familyhandyman.com

DEPARTMENTS

6 Stuff We Love
A cool-to-the-touch work light, curved shower bars and one monstrous circular saw.

12 Handy Hints®
A fix for noisy floors, a gentle handcart and a smart way to hide unsightly TV cords.

38 What Every Homeowner Must Know
Tips for solving problems, saving money and improving your home.

55 Buying Tips
Laminate flooring is durable, affordable and easy to install. But which type is best for you?

58 Pro Tips
Tricks for getting the most out of your miter saw.

65 Home Care + Repair
Here's what you need to know to air-condition your garage.

70 Car + Garage
Buying a used ATV? Inspect it first with this step-by-step guide.

76 Top Ten Tips
Here's how to grow a healthy lawn with fewer chemicals and less water.

82 DIY Quiz
Think you know everything there is to know about DIY? Find out with this quick quiz!

92 Great Goofs®
On the roof, in the rain, in his underwear—there's a DIYer determined to get the job done!

GOT A DIY QUESTION?

Finding answers is easy at familyhandyman.com. Just use the search box at the top of the page to get expert step-by-step help with your project. Or register on the site and join our DIY Forum, where you can ask questions or give advice.

CONTRIBUTOR GUIDELINES

We pay a $100 gift card for Handy Hints® and Great Goofs® submissions that we publish. Please include a photo of yourself from the shoulders up. Submit your original contribution, along with photos or sketches, by e-mail to:

handyhints@thefamilyhandyman.com
greatgoofs@thefamilyhandyman.com

or mail to: The Family Handyman
2915 Commers Drive, Suite 700, Eagan, MN 55121

Please include your name, mailing address and e-mail address if you have one, and indicate to which department you are submitting. We reserve the right to publish your submission in any appropriate department. If we receive similar submissions, we will pay the person who submitted the item we actually use.

By submitting material (text, photos and illustrations) for publication, you grant Home Service Publications, Inc. and its parent company, subsidiaries, affiliates, partners and licensees unlimited use of the material and your name, and the right to rewrite or modify, reproduce and distribute the material in any and all media and in any manner or appropriate place. We may contact you via phone, e-mail or mail regarding your submission. If we select your submission for print, you will receive a $100 gift card.

READER SERVICES

QUESTIONS ABOUT SUBSCRIPTIONS?
For new and gift subscriptions, change of address or help with a subscription problem, write to: The Family Handyman Subscriber Service Dept., Box 6099, Harlan, IA 51593-1599, or call (800) 285-4961. Or send an e-mail to FHMservice@rd.com. Allow two issues for address changes.

CUSTOMER INFORMATION
Reader's Digest may share information about you with reputable companies so they can offer you products and services of likely interest to you. If you don't want us to share this information, please write to: Reader's Digest Mailing List, Attn.: Circ. Dept., Box 6099, Harlan, IA 51593-1599. Please include a copy of your address label.

BACK ISSUES/ARTICLE COPIES
Some past issues are still available for $5 each. Call (800) 285-4961 from 8 a.m. to 5 p.m. Central, Monday through Friday for availability and ordering. Photocopies of articles are available for $3 each. Send check/money order to: Back Issues, The Family Handyman, Attn.: Back Issues/Articles, P.O. Box 6099, Harlan, IA 51593-1599. To ask about the availability of past articles, send an e-mail to FHMservice@rd.com.

COMMENTS AND SUGGESTIONS
We welcome your ideas and opinions. Write to: The Editor, The Family Handyman, 2915 Commers Dr., Suite 700, Eagan, MN 55121. Fax: (651) 994-2250. E-mail: editors@thefamilyhandyman.com

BECOME A FIELD EDITOR

Field Editors contribute ideas and experience to every issue of *The Family Handyman*. To join our crew of volunteers, e-mail us: Iwant2beaFieldEditor@familyhandyman.com

DECK

DECKED OUT

TimberTech®
Less Work. More Life.

Every deck can be transformed into something spectacular. However, only the stunning appearance of TimberTech's Earthwood Evolutions Legacy® Collection gives your deck the beautiful look of artisan hand-scraped hardwood with the low-maintenance ease of a quality capped composite. Who knew outdoor flooring could look so good. To see how our complete line of innovative decking, railing, lighting and fastening products can help you transform your space into your own personal retreat, visit **www.timbertech.com**

DECKING | RAILING | LIGHTING | FASTENING

STUFF we love

BY KEN COLLIER editors@thefamilyhandyman.com

A BETTER WORK LIGHT

You've probably used halogen work lights. And you've also probably burned your fingers on them, cussed the fragile bulbs and sweated from the heat they generated. Now there's an alternative.

The Husky Portable LED Work Light is cool to the touch, can take abuse, won't heat up a tight work space and costs only $35 at The Home Depot. I've been using it for various small projects, and I love it. Especially the fact that I can knock it around a bit. And since it's got an LED, its power use is minimal.

All that is great. But one thing you need to know: It can't match the brightness of your typical halogen work light. A traditional halogen work light might produce 8,000 lumens, 10 times the output of this light. But for small jobs or tight spaces, it's just the ticket.

Ken Collier

ART DIRECTION **ELLEN THOMSON** • PHOTOGRAPHY **GARY SUNDERMEYER, UNLESS NOTED**

Double curved shower rod

One of the best "instant upgrades" you can do to a bathroom is to install a curved shower rod. It opens up the shower so it feels much more spacious. Moen has upped the ante on curved curtain rods with its new double rod. You can use the second rod to separate the shower curtain from the liner, or to hang bath towels. It's available in several finishes for about $60 at Lowe's, Bed Bath & Beyond and other retailers. Installation is straightforward, but it helps to have a helper to hold the bar so you can screw it to the wall.

MOEN

THE FAMILY Handyman

QUESTIONS ABOUT SUBSCRIPTIONS?
Call (800) 285-4961 or e-mail us at FHMservice@rd.com

EDITORIAL

Editor in Chief	Ken Collier
Senior Editors	Travis Larson, Gary Wentz
Associate Editors	Jeff Gorton, Mark Petersen
Senior Copy Editor	Donna Bierbach
Contributing Copy Editor	Peggy Parker
Art Directors	Vern Johnson, Marcia Roepke
Contributing Art Director	Ellen Thomson
Production Artist	Mary Schwender
Photographer	Tom Fenenga
Contributing Editors	Elisa Bernick, Spike Carlsen, Rick Muscoplat, David Radtke
Set Builder	Joe Jensen
Office Administrative Manager	Alice Garrett
Senior Manager, Digital Marketing Operations	Reese Gurnett
Senior Content Producer	Karisa Langlo
Senior Analyst, Digital Experience Analytics	Ashley Keefe
Digital Product Manager	Allison Reeves
Technology Director	Rob Awe

EDITORIAL OFFICE
The Family Handyman, 2915 Commers Drive, Suite 700
Eagan, MN 55121; 651-454-9200

ADVERTISING

VP, Group Publisher	Russell S. Ellis
Brand Sales Leader	John Dyckman
New York 646-293-6246	Greg Messina, John Dyckman, Eric Fitzig, Ray Rienecker, Michael Ring, Courtney Brody
Midwest, 312-540-4824	Matt Avery, Marissa Wenk
West Coast, 312-540-4824	Catherine Marcussen
Canada 416-598-0101, ext. 220 416-598-0101, ext. 280	York Media D. John Magner Cheryl Fryer
Classified and Small Display Ads: 212-779-7172, ext. 221	Eric Genova
Marketing Director	Christina Masterson
Digital Marketing Manager	Ashley Martinez
Digital Publisher Relationship Manager	Allie Beaty
Associate Marketing Manager	Alexis Aliquo
Art Director	Ed Jackson
Advertising Coordinator	Barbara Berezowski
Production Manager	Leslie Kogan

THE READER'S DIGEST ASSOCIATION, INC.

President and Chief Executive Officer	Bonnie Kintzer
VP, Chief Operating Officer	Howard Halligan
Chief Revenue Officer	Rich Sutton
President and Publisher, Books	Harold Clarke
VP, Product and Brand Marketing	Beth Gorry
VP, Chief Marketing Officer	Leslie Doty
VP, North American Human Resources	Phyllis E. Gebhardt, SPHR
VP, Consumer Marketing Planning	Jim Woods

PUBLISHED BY HOME SERVICE PUBLICATIONS, INC.,
a subsidiary of THE READER'S DIGEST ASSOCIATION, INC.

The Family Handyman® (ISSN: 0014-7230) (USPS: 515-930). Volume 65, No. 6, 559th Edition. Published monthly (except bimonthly in July/August, December/January) by Home Service Publications, Inc., 1610 N. Second St., Suite 102, Milwaukee, WI 53212. We may also occasionally publish extra issues and special issues (which count as two in a subscription). Periodicals postage paid at Milwaukee, WI, and at additional mailing offices. **POSTMASTER:** Send address changes to The Family Handyman Subscriber Service Dept., Box 6099, Harlan, IA 51593-1599; 800-285-4961. Subscriptions: In the U.S.A., its territories and possessions, $24 for one year (10 issues). For countries outside the U.S.A., subscriptions are $28.97 per year in American currency. Canadian GST registration number R123771891. CPM agreement number 40065693. Printed in the U.S.A. Copyright ©2015 Home Service Publications, Inc. All rights reserved. Unauthorized reproduction, in any manner, is prohibited. The Family Handyman, Handy Hints and Great Goofs are registered trademarks of RD Publications, Inc. Wordless Workshop, Workshop Tips and are trademarks of RD Publications, Inc. Subscribers: If the U.S. Postal Service alerts us that your magazine is undeliverable, we have no further obligation unless we receive a new address within one year.

Wrangler
ADVANCED COMFORT™
THE MOST COMFORTABLE JEANS YOU'LL EVER WEAR. GUARANTEED.
DREW BREES
MOVES WITH YOU
4-WAY FLEX TECHNOLOGY
20% STRONGER
Wrangler
Real. Comfortable. Jeans.®
wrangler.com

One cleaner to rule them all

I'm always looking for a way to simplify housecleaning, and having just one cleaner to buy, store and carry around has been my holy grail. I think I may have found it: Krud Kutter. It's powerful enough to cut just about any stain, even dry paint and permanent marker. There's even a version that disinfects. Yet according to Rust-Oleum, it's safe to breathe the fumes, safe to use around kids and safe to wash down the drain. Krud Kutter costs a little more than other cleaners, but for me, it's a bargain. A big spray bottle costs $7, and a gallon jug is $17 at home centers. If you don't see it with the cleaners, check the paint department.

Ken Collier

LED VACUUM NOZZLE

Seems like every tool on the shelf has a built-in LED. Some are pretty handy, others not so much. Here's one that works for me—a lighted nozzle for a wet/dry vac. My car has a whole bunch of dark nooks and crannies. With the Ridgid LED Lighted Car Nozzle, I can see exactly what I'm doing (and how much of a slob I really am!). This lighted nozzle comes in 2-1/2-in. and 1-7/8-in. sizes. The light will shine for about 13 hours on the two coin-style batteries. The larger one costs $12 at The Home Depot.

Mark Petersen

MAGNETIZE IT

A magnetized screwdriver or driver bit makes starting screws a lot easier. It's like having an extra hand to hold the screw. I like to magnetize my screwdriver when I'm working with tiny screws that are nearly impossible to find if I drop them (been there?). You can use a magnetic bit holder in most cases, but not in tight quarters. Instead, you can just magnetize the bit. I've even magnetized tweezers to help pick up tiny parts.

Magnetizers like the one shown above are a cinch to use: Just slide the tool into the hole, rub it back and forth, and it's magnetized. You can also demagnetize. Made by a variety of manufacturers, this handy tool is available for about $5 at home centers and online.

DIY WORK WEAR

Disposable booties

If you've ever been inside a hospital, you've seen booties like these. They're handy at home, too, especially if you're a DIYer. Use them if you're coming inside and your boots are muddy. Keep them around when you're painting to be sure you won't track paint into another room. Have a few at the door to your shop to prevent sawdust footprints in the house. You get the picture. You can pick some up at any home center, usually in the paint department, for less than a dollar a pair. If you fall in love with using them, consider getting a box of 300 for $30 online. Just search for "polyethylene shoe covers."

Jean Bartholome,
Field Editor

©Inter IKEA Systems B.V. 2015

life is
trying
a recipe
that's
adventurous,

and a kitchen
where finding
the tools isn't

SEKTION/BROKHULT
kitchen
$2799*
*Based on a 10'×10' kitchen

25
Year Limited
Warranty
INCLUDED

IKEA-USA.com/kitchen

SEKTION kitchen with BROKHULT light gray walnut effect doors, drawer fronts and MAXIMERA soft-closing drawers SEKTION cabinet frames in brown wood effect and white melamine foil. BROKHULT doors/drawer fronts in high-gloss foil finish. MAXIMERA drawers in powder-coated steel and melamine foil. Requires assembly. *Total price includes cabinet fronts, interior shelving, drawer and door dampers, hinges, toekicks, legs, visible moldings and panels. Your choice of countertop, sink, faucet, handles, appliances and lighting are sold separately. See IKEA store for limited warranty, country of origin and 10'×10' details. Valid in US stores only.

IKEA®

SKILSAW

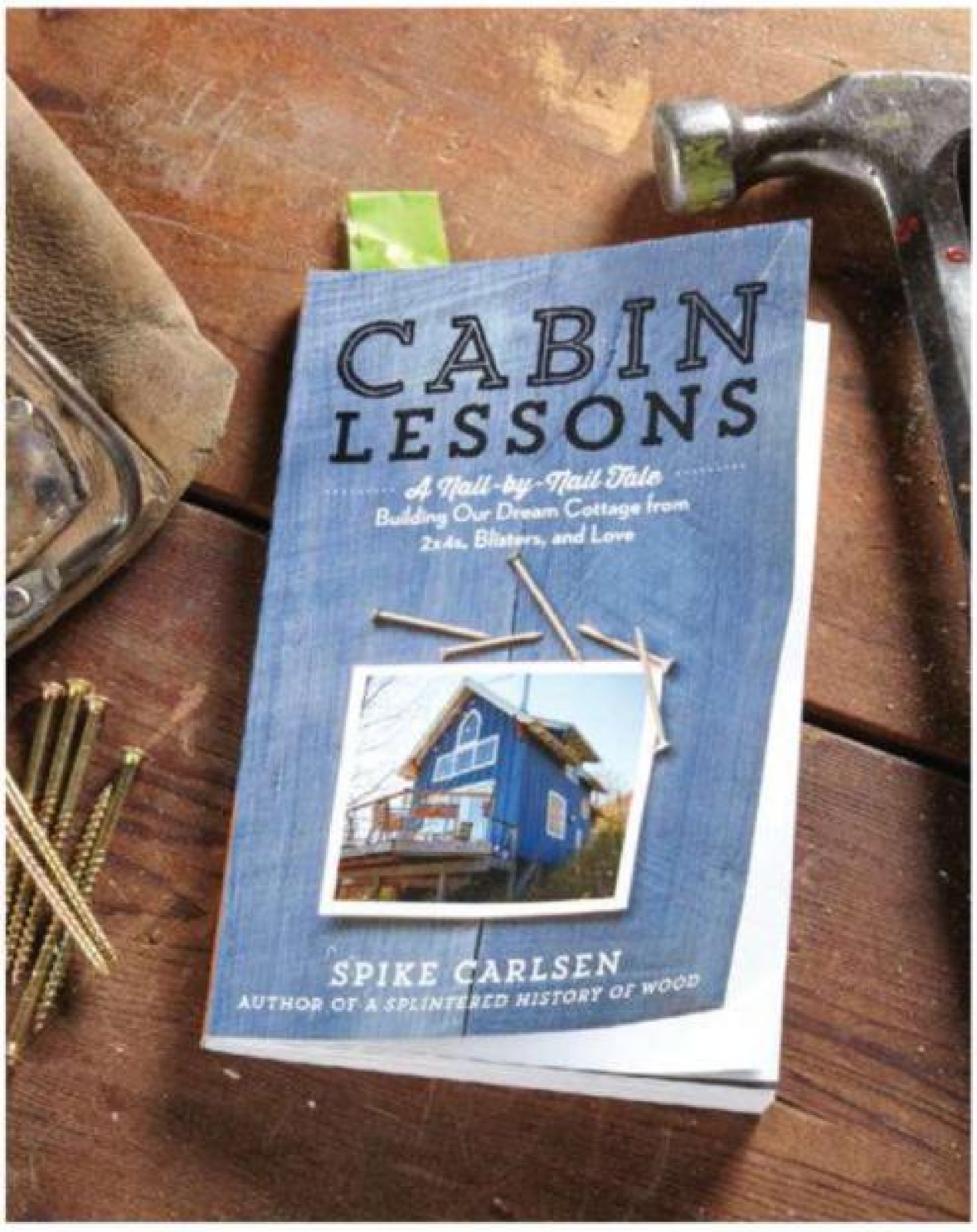
Big blade, deep cuts

Cut—flip—cut again. That's how we have to cut a thick post or beam with a regular circular saw. Maybe the cuts line up, maybe they don't. With the new 10-1/4-in. worm drive saw from Skilsaw, you can cut through thick materials in one clean pass. The saw has a cutting capacity of 3-11/16 in., and it weighs only 16.45 lbs. (less than some 7-1/4-in. worm drive saws.) The motor is powerful enough to plow through the toughest laminated veneer lumber. This beast of a saw, called the Sawsquatch, costs about $449 online.

Mark Petersen

TO BUILD A CABIN

If you've ever dreamed of building your own cabin, you should read this book. It's written by our very own Contributing Editor Spike Carlsen. He and his wife, Kat, found a challenging but beautiful piece of land on Lake Superior and built their dream cabin on it together. *Cabin Lessons* recounts their entertaining and instructive story of building together, with plenty of lessons for a would-be cabin or house builder. It's also a meditation by a kind, modest and genuinely funny guy on building a marriage, a blended family and a life. You'll be grinning. Guaranteed. Get yourself (or someone you love) a copy at bookstores or online. It's from Storey Publishing and it'll run you about $15 at major booksellers.



A bucket lid to top it off

In the simple but beautiful category, we bring you a bucket lid. Nothing fancy, but if you've got buckets and you want a lid you can remove without a pry bar, try this kind. They're not waterproof and they're not stand-on-top-of-it-proof, but if you just want more covered storage, they're great. The lids cost less than $3 at your local home center. Good to know.

(Re)Discover Perfection

SIKKENS® Wood Finishes have been renamed SIKKENS® PROLUXE™ Wood Finishes. While the name and labels have changed, the formulas have not.

Known for their unique, signature look, these are still the same formulas that bring out the natural radiance of exterior wood with a truly perfect finish. That's why they've been preferred by expert craftsmen for generations.

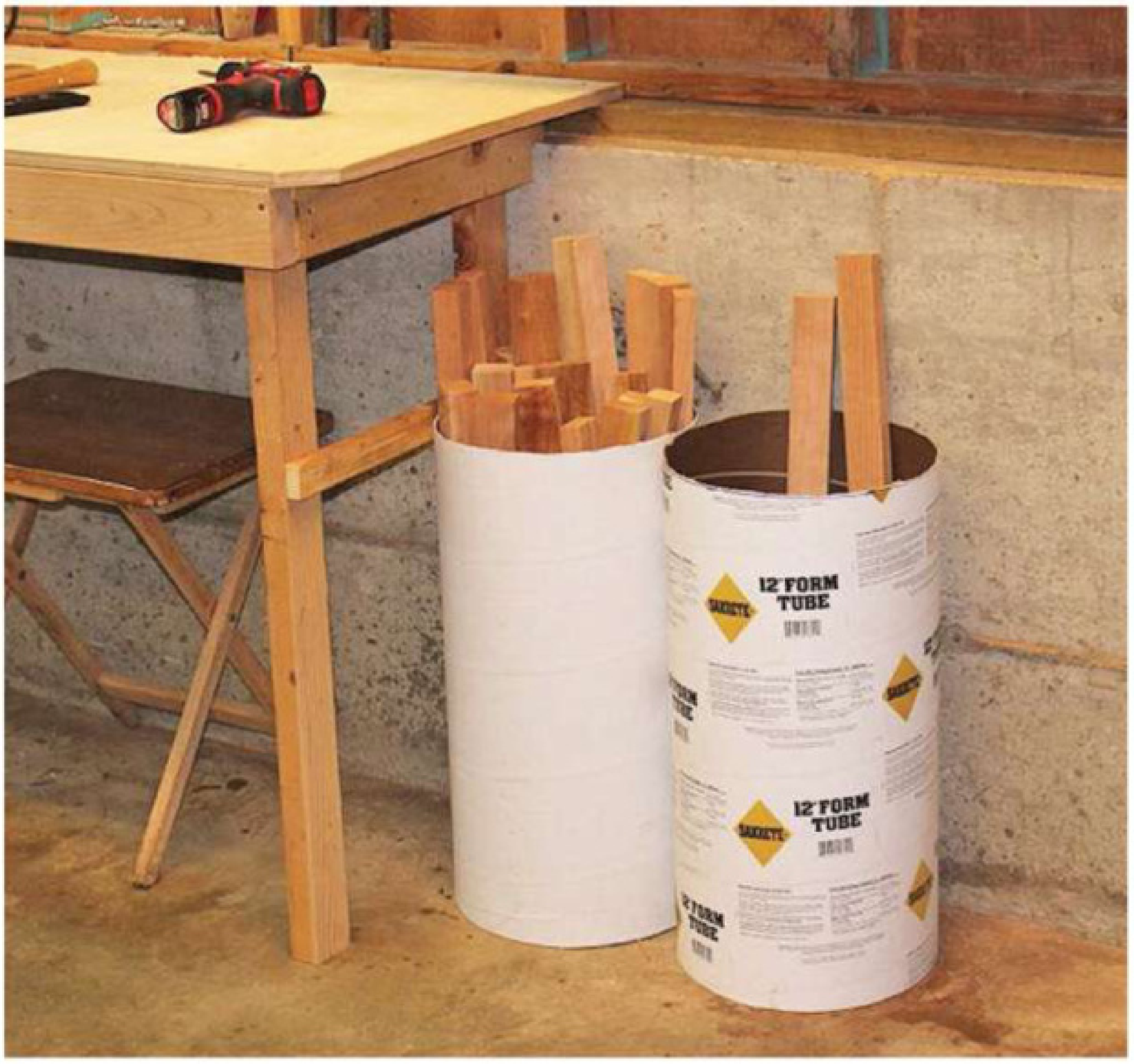
Sikkens
ProLuxe™
Wood Finishes

For the absolute finest results from a brand you can trust, choose *Sikkens ProLuxe* finishes. perfectwoodstains.com

Cetol and *Sikkens* are registered trademarks of AkzoNobel. *ProLuxe* is a trademark of PPG Architectural Finishes, Inc.
© 2015 PPG Industries, Inc. All Rights Reserved.

Handy HINTS®

FROM OUR READERS handyhints@thefamilyhandyman.com



READER PHOTO

SAVING HARDWOOD SCRAPS

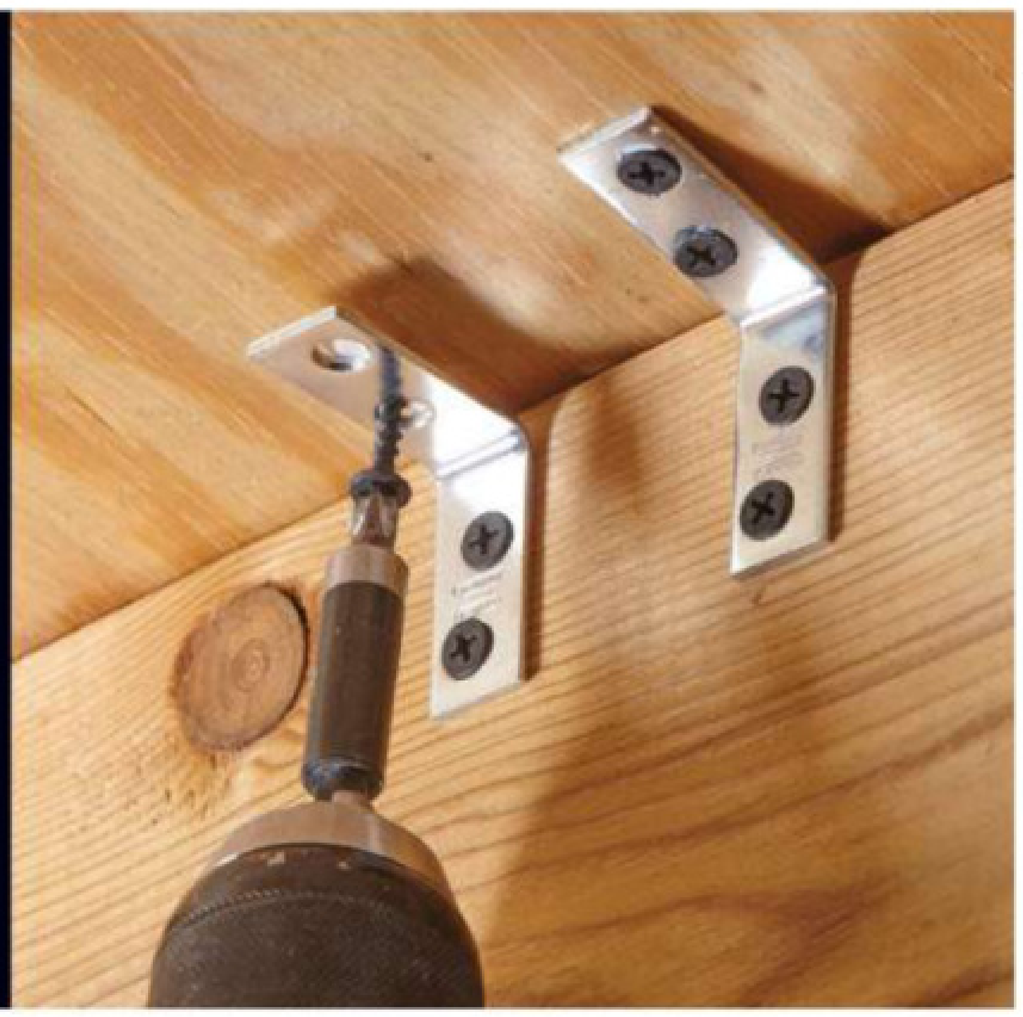
Short scraps of hardwood are too good to throw away but hard to store neatly. So I bought a 4-ft. tube form made for concrete footings, cut it in half (the cardboard-like material cuts easily) and set the tubes on end. I tack the tubes to a wall or a bench leg so they don't fall over. With the wood scraps stored upright, it's easy to find a piece just the right length. Tube forms are available in various diameters for $5 and up at home centers.

Bill Wells

Fix for noisy floors

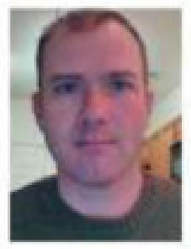
Here's a simple fix for squeaking floor joists: Screw a 1-1/2-in. corner bracket to the joist about 1/8 in. below the subfloor. Then when you drive a screw up into the subfloor, it's pulled tight against the joist. No more squeak.

Charles J. Long



Free funnels

I use common plastic bottles for large-mouth or very-fine funnels instead of store-bought ones. These funnels are disposable/recyclable when no longer needed. When I find an unusual bottle, I cut the top off and store it for future use. I have a collection in a box in the garage.



Aaron Bennett

Get a $100 gift card for your Handy Hint! See p. 4.

EDITOR **DAVID RADTKE** • ART DIRECTION **MARCIA ROEPKE** • PHOTOGRAPHY **TOM FENENGA**

INTRODUCING A PERFORMANCE TREATMENT
THAT RISES ABOVE ALL OTHERS.

New STA-BIL® 360° PERFORMANCE is the only fuel treatment to emit a revolutionary vapor technology that rises above the fuel line to protect your engine where others before it can't. Use it with every fill up to help keep your engine running cleaner, leaner, smoother and stronger than ever. **The next level of engine performance is in the vapor.**

5-IN-1 MAXIMIZER HELPS

- RESTORE POWER
- CLEAN FUEL SYSTEM
- MAXIMIZE FUEL ECONOMY
- PREVENT ETHANOL DAMAGE
- SMOOTH IDLE

STA-BIL360.com

Drywall knife protector

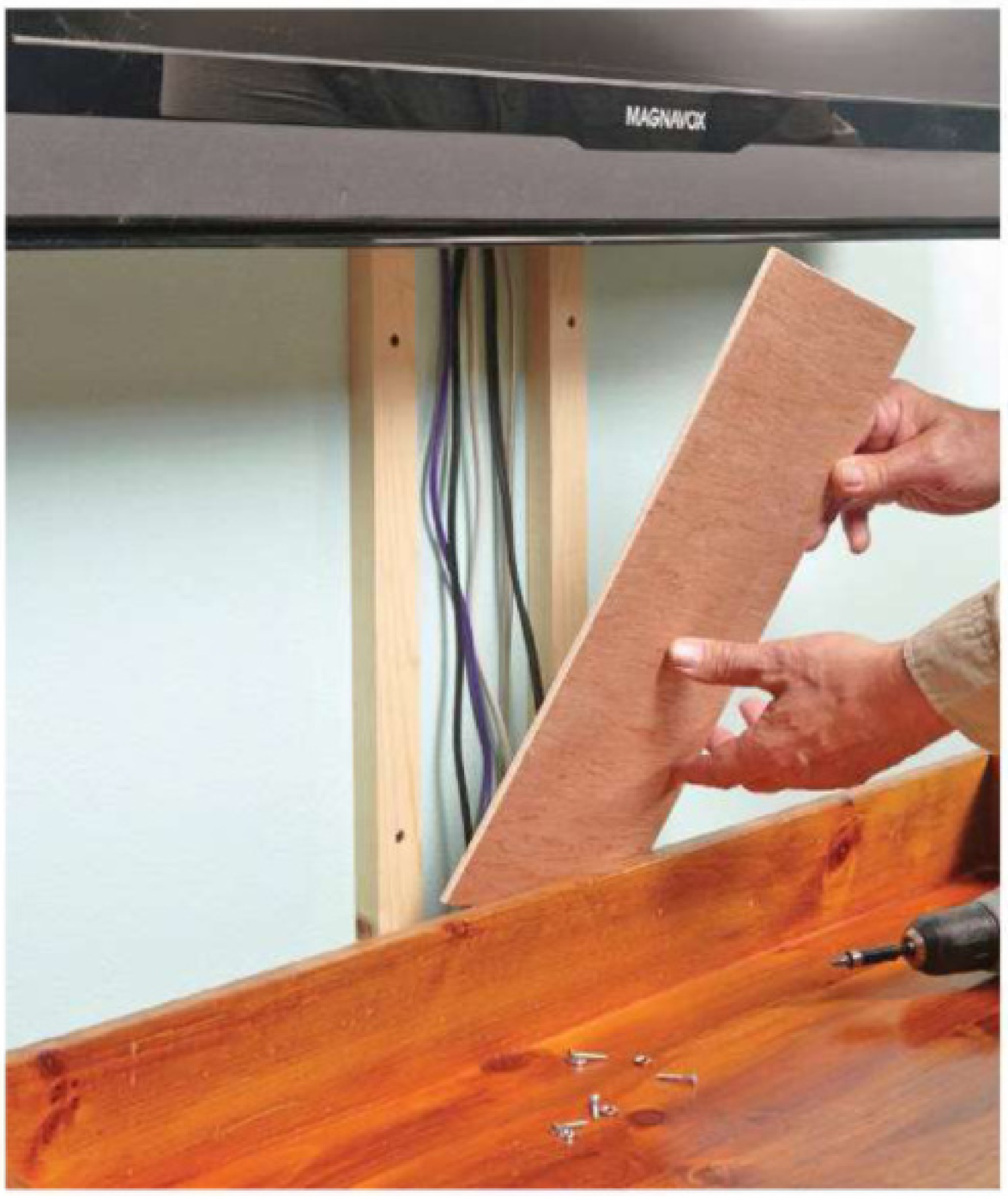
I came up with a nifty solution to keep the fine edges of my drywall knives from getting dinged up. I buy 3/8-in. clear tubing at the hardware store and cut lengths to fit the blades. I then take a sharp utility knife and slit the tubing lengthwise and slip it over the blade. The tubing is somewhat clingy, so it stays put even in a toolbox tote.

Richard Wisz

Gentle handcart

I often use my handcart to move furniture, so I upgraded it with pipe insulation and duct tape. Now my delicate wood finishes are protected.

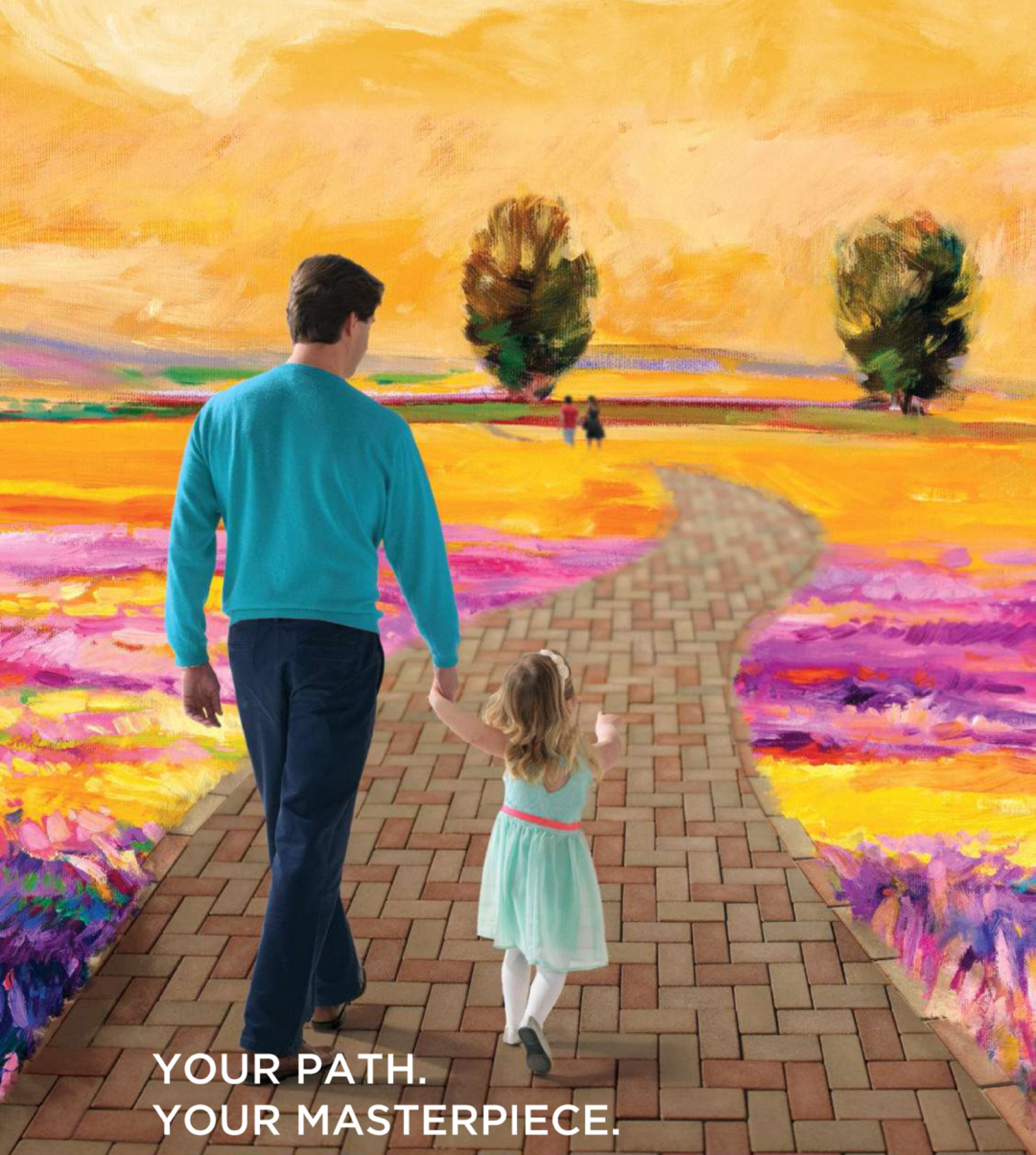
Paul M. Johnson



WIRE CHASE

I decided to hang my flat screen TV on the wall and place the game components below on a low table. The only downside was the bunch of unsightly cords coming down the wall. To hide the cords, I built a chase from plywood and painted it to match my walls. I used 1/2-in. plywood for the back and sides and hardboard for the front panel.

John Fontaine



AZEK Pavers create a beautiful first impression that lasts. Within the beauty and durability of AZEK Pavers lies the cutting edge innovation that guarantees a superior patio, drive, or walkway. Made from up to 95% recycled material – and available in five natural colors – AZEK Pavers have reinvented pavers while also helping our environment. Installed on a patented grid system, an AZEK Pavers outdoor area is sure to pave the way for your home to be the envy of the neighborhood. **Create your paver masterpiece today at AZEK.com/yourpaverpath.**

AZEK® Pavers

Deck | Porch | Rail | Trim | Moulding | Pavers AZEK.com

NEW and UNUSUAL PAINTS

Unique painting products you should know about—and probably don't

EDITOR **GARY WENTZ** • ART DIRECTION **MARCIA ROEPKE** • PHOTOGRAPHY **TOM FENENGA UNLESS NOTED**

All paints are the same; all paints are different. They're all the same because their primary job is to coat and protect surfaces. They're all different because chemists tweak each component to balance performance for hundreds of different situations.

All that tweaking has produced lots of extraordinary paint. Here's a sampling of products to help you get great results throughout your house.

by Tom Caspar
editors@thefamilyhandyman.com

MORE POWER THAN YOU NEED

greenworks pro

greenworkstools.com

YOU DON'T NEED 80 VOLTS

LIKE YOU DON'T NEED 500 CHANNELS JUST TO WATCH SPORTSCENTER

When it comes to electric power, more than you need is just what you need. The Greenworks Pro 80-volt battery powers your lawn mower, chainsaw, hedge trimmer, blower, and string trimmer with an excessive amount of manly power. **You don't have to need 80 volts to need 80 volts.**

80 VOLT LITHIUM MAX

A PRIMER THAT'S EASY TO SAND

If your goal is an ultra-smooth topcoat on a bare wood with visible pores, like pine, your best bet is to prime the wood first. A good primer will fill in the pores, and a good sanding will smooth out all the brushstrokes. Trouble is, many primers gum up sandpaper like nobody's business. Here's one that doesn't.

Benjamin Moore's Fresh Start Enamel Underbody Primer is specifically made to sand easily. It's an alkyd (oil-based) paint, so it flows and levels extremely well. It's ideal for doors, cabinets and trim that will be painted with a gloss or semigloss enamel. You'll have to wait overnight before sanding and recoating, however. A gallon costs about $45.

Dry-erase walls

Sherwin-Williams' Sketch Pad turns any painted wall into a giant dry-erase board. It's a two-part gloss epoxy that dries clear, allowing the wall color to show through. It's easy to roll onto any smooth surface, but you'll have to wait one week for the epoxy to fully cure. A 1-qt. kit, containing a roller, tray and gloves, covers about 50 sq. ft. and costs $50.

Fortunately, the coating isn't permanent. When you want to repaint the wall, just scuff-sand, then prime and paint.

SHERWIN-WILLIAMS

Flat finish but easy to clean

Flat paint used to be a bad choice for bathroom and kitchen walls. If you needed to be able to scrub fingerprints, grime or grease off a wall, you had to use a paint with some sheen. That's no longer true. Now there are paints, including Emerald Interior Acrylic Latex and Duration Home from Sherwin-Williams, that are both flat and washable.

These two choices also contain antimicrobial agents to inhibit growth of mold and mildew. According to Sherwin-Williams, Emerald ($63 per gallon) offers better washability than Duration Home ($59). Both are available in satin and semigloss as well.

NORTHERN® TOOL + EQUIPMENT

POWERFUL COUPON OFFERS

VALID AT 85+ STORES OR NORTHERNTOOL.COM

POWER COUPON

$20 OFF ANY $100 PURCHASE!

Valid on all sale prices

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Coupon not valid with other coupons, on prior purchases, or gift cards. Coupon cannot be reproduced. **FOR ONLINE PURCHASES USE KEYCODE 220480.**

NORTHERN® TOOL + EQUIPMENT

220480

POWER COUPON

$10 OFF ANY $50 PURCHASE!

Valid on all sale prices

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Coupon not valid with other coupons, on prior purchases, or gift cards. Coupon cannot be reproduced. **FOR ONLINE PURCHASES USE KEYCODE 220481.**

NORTHERN® TOOL + EQUIPMENT

220481

POWER COUPON

$5 OFF ANY $15 PURCHASE!

Valid on all sale prices

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Coupon not valid with other coupons, on prior purchases, or gift cards. Coupon cannot be reproduced. **FOR ONLINE PURCHASES USE KEYCODE 220482.**

NORTHERN® TOOL + EQUIPMENT

220482

SAVE $30

$149.99

Reg. $179.99

30" DRUM FAN

#250721-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286427

SAVE $20

$99.99

10", 8 AMP REMINGTON ELECTRIC POLE SAW

#24779-7019

Reg. $119.99

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286428

SAVE 35%

$44.99

Reg. $69.99

WORK TUNES™ MP3/ AM-FM RADIO & HEARING PROTECTOR

#1746366-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286429

SAVE $100

$299.99

Reg. $399.99

4000 WATT PORTABLE GENERATOR

#45809-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286430

SAVE $100

$199.99

Reg. $299.99

2.3 GPM, 2600 PSI PRESSURE WASHER

#45810-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286431

SAVE 21%

$109.99

Reg. $139.99

DURAMAX 14-GALLON POLY/STEEL FUEL CADDY

#33631-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286432

SAVE 30%

$69.99

Reg. $99.99

10' X 10' LIGHTWEIGHT STRAIGHT LEG CANOPY

#47507-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286433

SAVE $50

$69.99

Reg. $119.99

1½-TON ALUMINUM/STEEL SERVICE JACK

#45396-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286434

SAVE 20%

$39.99

Reg. $49.99

20-TON BOTTLE JACK

#46239-7019

NORTHERN® TOOL + EQUIPMENT

Coupon valid through 7/31/15 on a single purchase at our stores, NorthernTool.com, or by calling 800-533-5545. Search HANDYMAN for discount pricing online. Coupon not valid on prior purchases or gift cards and cannot be reproduced.

286435

1-800-533-5545 | NorthernTool.com | Over 85 Stores

No-miss ceiling paint

When you're repainting a ceiling—putting white on white—it's easy to miss a few spots. The new white and the old white usually look the same, especially if the light is bad. Wouldn't it be cool if a ceiling paint actually changed color as it dried, so you could be sure that you've covered an entire area?

Well, there really is paint like that. Glidden's EZ Track Ceiling Paint ($21 per gallon) goes on pink and dries white. The color change takes about 30 minutes—plenty of time to touch up any spots you've skipped. This paint is also formulated to resist drips and minimize splatter, so you won't turn from pink to white as well.

NEW RECIPE FOR SUPER-SMOOTH

A generation ago, an experienced painter's first choice for achieving a super-smooth surface on cabinets and trim would have been an oil-based alkyd paint, not a water-based acrylic latex. Alkyd paints flowed out better and leveled better. End of story.

Not quite. Alkyd paints come with a big downside: strong odor and slow, messy cleanup using mineral spirits. Acrylic paints, by contrast, have much less odor, and cleanup is quick and easy with soap and water. Benjamin Moore has now combined the convenience of acrylic with the performance of alkyd in ADVANCE, the first interior "waterborne alkyd" ($50 per gallon). It flows and levels extremely well, has low odor and cleans up with soapy water.

ADVANCE also dries slowly, like an alkyd, which allows brushstrokes to blend together to create a uniform surface. Compared with an acrylic, ADVANCE takes an extra long time to dry to the touch (four to six hours). You'll have to wait 16 hours to recoat.

ODOR-ABSORBING PAINT

This may sound like science fiction, but chemists have developed a paint that reduces bad smells and formaldehyde fumes in your house. And when it's applied, it has virtually no odor. If you need to repaint a room just before holiday guests arrive, hate the smell of burnt toast or are concerned about formaldehyde emissions from new carpets or cabinets, check out Harmony Interior Acrylic Latex Paint from Sherwin-Williams ($51 per gallon).

Harmony paint helps reduce odors from organic sources, such as cooking, smoke and pets, according to the manufacturer. It also reduces the concentration of formaldehyde, a pungent and irritating gas emitted by some types of newly installed insulation, carpet, cabinets and other building materials.

Storemasg

ADVERTISEMENT

Father's Day Gift Guide

Great Gift Ideas for the DIY Dad

A Smarter Drill for the DIY Dad

Get the DIY Dad BLACK+DECKER's 20V MAX* Drill with AutoSense™ Technology. It's the first drill designed to intuitively understand when to stop screws flush with the work surface and will make his next project a breeze.

BLACK+DECKER

AutoSense.BlackAndDecker.com

Give Dad Three Tools In One!

The Crescent Pass-Thru™ Adjustable Wrench Set has laser-etched scales for fast sizing. Flip the jaw and it's a pipe wrench with sharp teeth that hold pipes tight. At the other end, a pass-thru ratchet drives 10 combo SAE/metric sockets. Available at The Home Depot.

CrescentTool.com

Give Dad A New Lawn Lifestyle

The future of lawn care has arrived! The Greenworks Pro mower is powered by an industry-leading 80 volt lithium battery, providing gas-comparable power and performance.

greenworks
Life gets easier.™

GreenWorksTools.com

RIDGID Gen5X 5pc Combo

Powered by 4.0 Hyper Lithium batteries and engineered to provide best-in-class power, performance and runtime, giving dad the advantage on any jobsite.

Ridgid.com/gen5x

StoreMags.com

WRITE ON WHITE

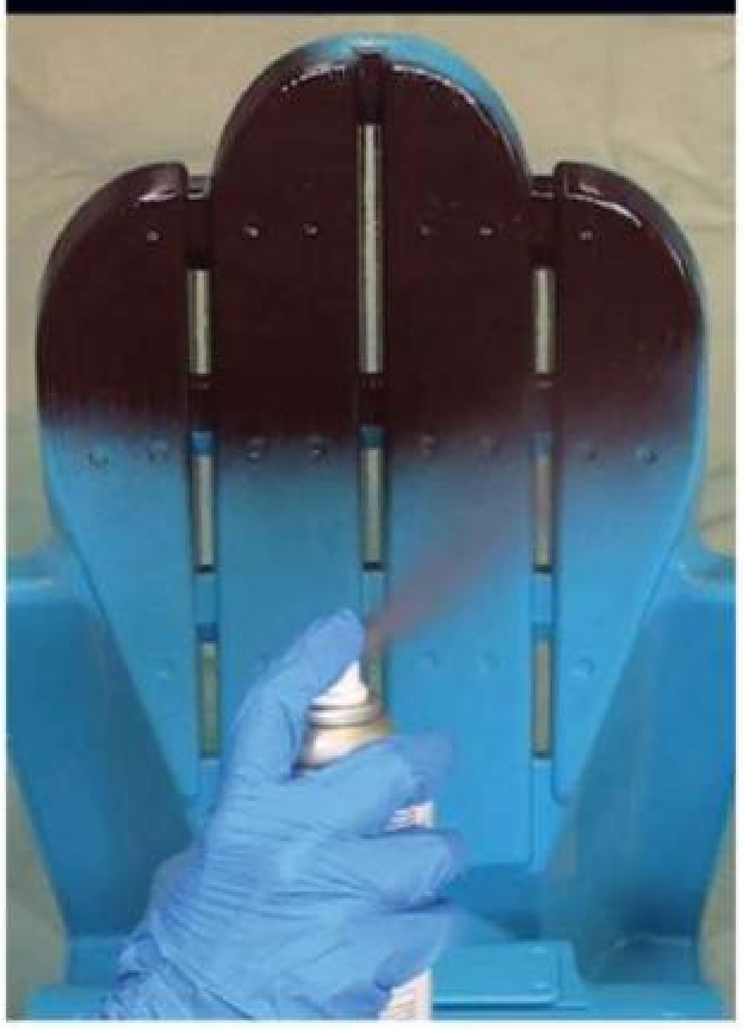
If you were ever caught writing on a wall when you were young, you may have wished your parents had a paint like Rust-Oleum's Dry Erase. This two-part epoxy creates a white surface that's perfect for dry-erase markers. You can apply it to any interior surface made from drywall, Masonite, wood, concrete or metal.

If the surface is unpainted, you'll have to prime it first with a latex paint. Dry Erase comes in two containers; once mixed, you'll have only one hour to apply the recommended two coats. Then you'll have to persuade your kids to wait three days (the time it takes the coating to cure) to try it out! A 1-qt. kit, which covers about 50 sq. ft., costs $20.

Same can, more coverage

Every can of spray paint contains solvents, which evaporate, and solids, which form the coating. More solids means you get more coverage out of the can. And that's the idea behind Painter's Touch Ultra Cover 2X paints. According to Rust-Oleum, you get twice the coverage. The 2X line includes a wide range of colors, plus primer and a clear coating. Expect to pay less than $4 per can.

RUST-OLEUM (2)



ZINSSER (2)

LOCK DOWN PEELING PAINT

If you have peeling paint, Zinsser's Peel Stop Triple Thick Primer ($35 per gallon) can save you days of tedious scraping. It penetrates the old paint and bonds it to the surface below, preventing peeling and cracking. You still have to remove loose paint, but you can skip the hard, thorough scraping job that's usually required. And because it forms a super-thick film, this primer also hides minor surface cracks and evens out the irregularities of a weathered or scraped surface.

If you're not ready for repainting but you want to prevent a weathered surface from getting any worse, take a look at Peel Stop Clear Binding Sealer ($22 per gallon). It works just like the primer, but it's thinner and dries clear.

Both Peel Stop products can be applied to interior and exterior surfaces. They're recommended for use on wood, metal, stucco, concrete and brick. You can topcoat with any latex or alkyd paint.

storemags

PHOTO BY /
EMA PETER PHOTOGRAPHY

COURTESY OF /
SARAH GALLOP DESIGN

SOMETIMES YOU JUST HAVE TO STOP & SMELL THE WESTERN RED CEDAR.

It's time to move the indoors outdoors. And nothing performs better on outdoor structures than 100% natural Western Red Cedar. Real Cedar is naturally resistant to rot and decay, and its deep, rich lustre and limitless finishing options means it will look fantastic in any yard. This year, make the most of your outdoor living: build with the real material.

Then take a break and smell the Real Cedar.

1 866 778 9096
www.realcedar.com

REAL green

WESTERN RED CEDAR LUMBER ASSOCIATION
REAL CEDAR
WRCLA

PERFECT

Stunning but simple; elegant but economical

by David Radtke
editors@thefamilyhandyman.com

I designed this pergola with simplicity and economy in mind, but not at the expense of good looks. The pergola is made from standard dimensional lumber, so you just cut the parts and screw them together—no special skills required. To keep the cost down, I used pressure-treated lumber, which looked great with two coats of semitransparent stain.

I sized the pergola for small gatherings of family and friends. With an eye toward daytime comfort, I spaced the roof slats to block some sun but still let in enough rays for warmth.

You can build this project in about two weekends if you have an agreeable helper. I spent just under $1,300 on materials. The concrete floor, which is optional, added another $500. Your floor could be flagstones, paver bricks or even a ground-level deck.

PERGOLA

BIG, BUT NOT COMPLICATED

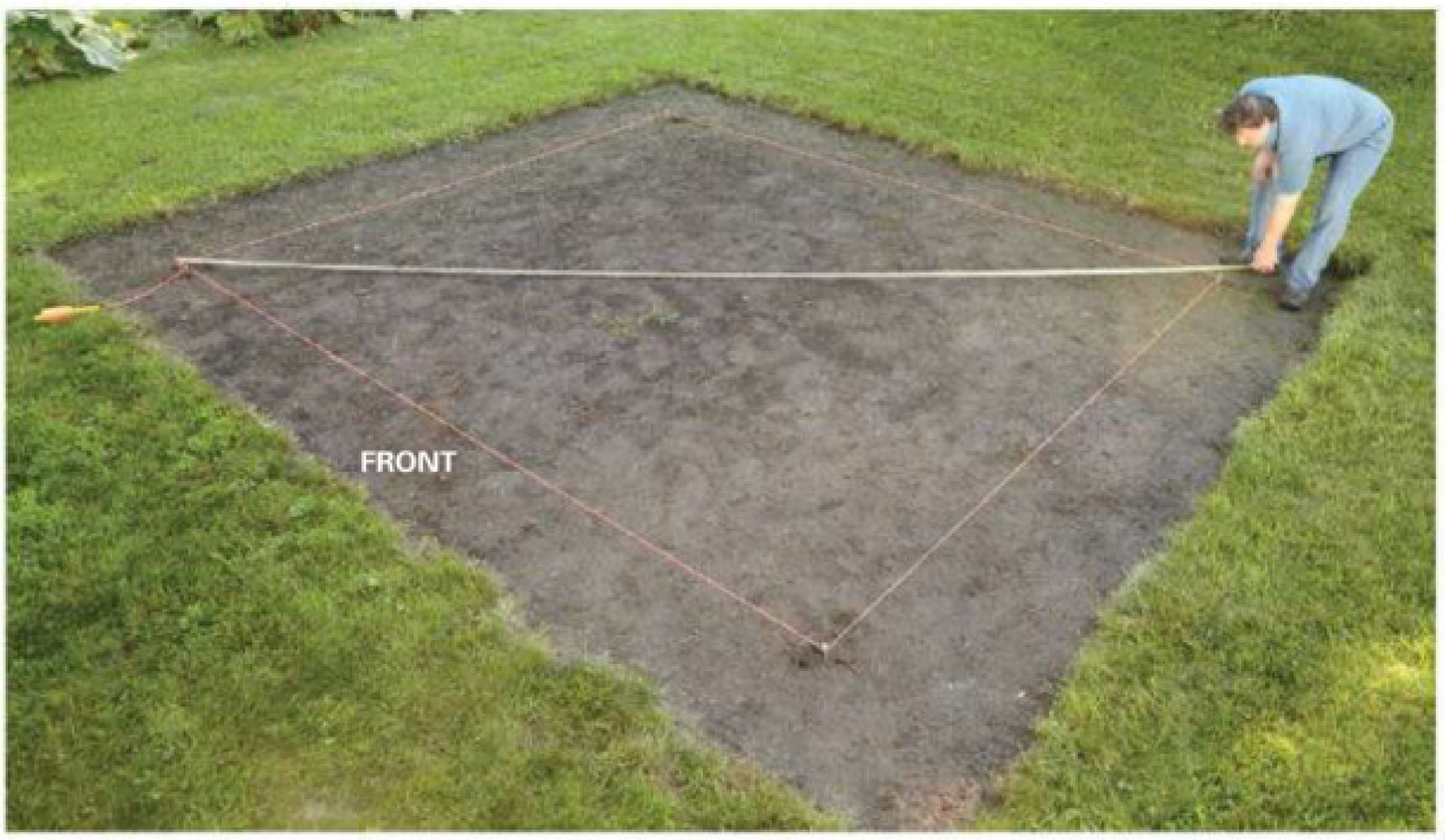
If you think this pergola is beyond your skill level, take a closer look. It takes time and muscle, but it's really just a bunch of standard lumber parts screwed together. The trickiest part of the job—positioning the posts—is almost goof-proof with simple plywood plates (see Photo 3). Most sheds and even fences are more complicated than this project!

Survey the site

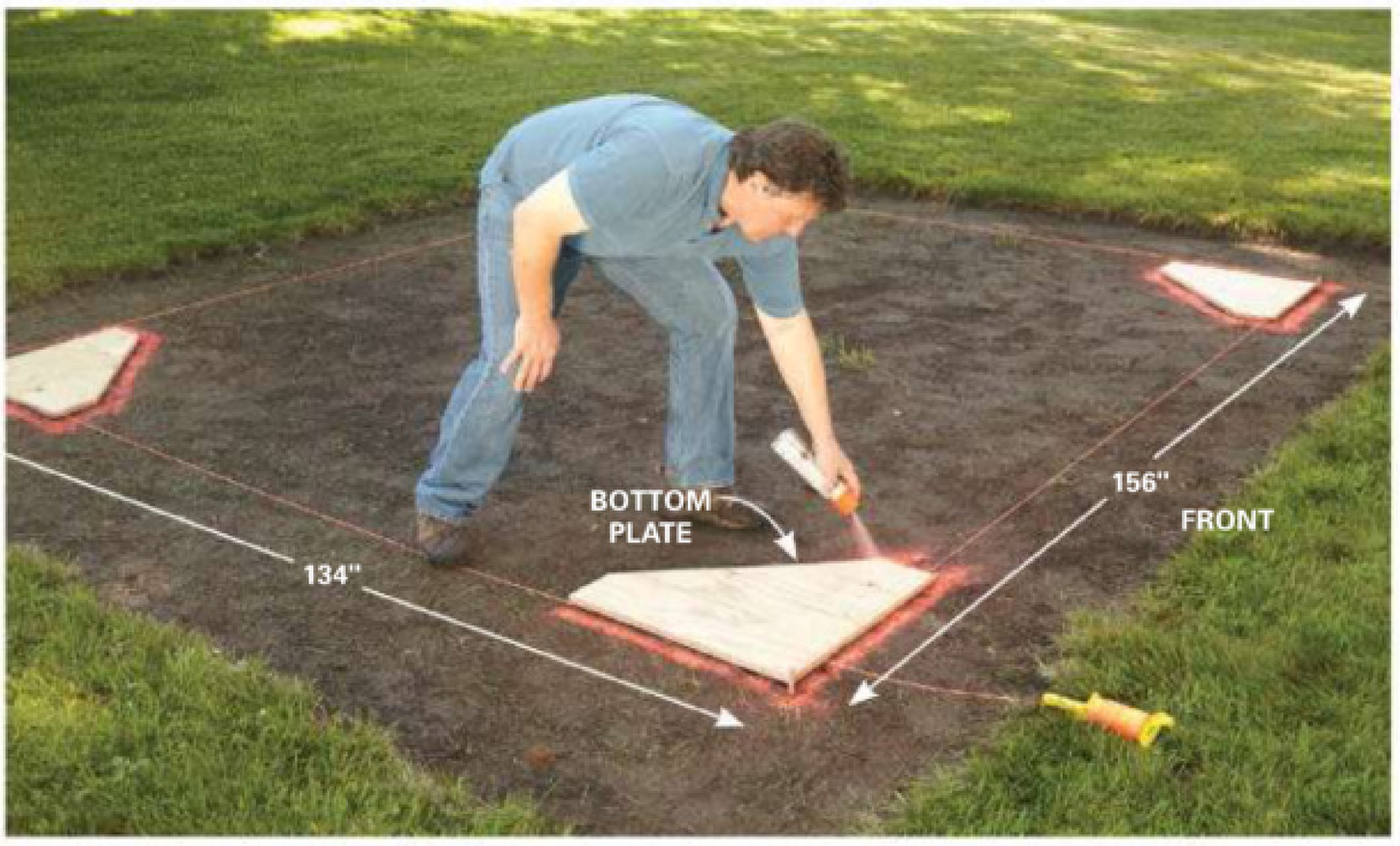
Be sure you have a fairly level spot in your yard. Slopes can be subtle and a bit deceiving, so bring a level attached to a long, straight 2x4 out to the yard as you check site locations. Our site sloped by about 3-1/2 in., which worked out well. I made sure the slab would be just above the grade of the yard at the higher end, which then left the lower area as a "stepping off" the slab point. If you have a challenging yard, you may need to level an area by first terracing with a short retaining wall.

Prep the site

If you're building in a grassy area, you'll need to remove the turf. You can rent a kick-style sod cutter, but if you're over 22 years old, you'll probably agree that renting a gas-powered sod cutter for $60 a day is well worth the cost. You can remove the sod in less than two hours and still have a good chance of getting out of bed the next day. If you don't have a spot that could use fresh turf, make plans to get rid of a full pickup load of sod.



1 MARK OUT THE PERIMETER
Cut the sod away and mark the perimeter of the pergola with stakes and string. Check the layout by taking diagonal measurements; equal measurements means the layout is square.



2 POSITION THE POSTHOLES
Align the post bottom plates with the strings and then outline them with spray paint.

3 BUILD THE POST ASSEMBLIES
Screw plywood plates to the posts. Joining the posts this way saves you the hassle of positioning and plumbing them individually.

ART DIRECTION **VERN JOHNSON** • PHOTOGRAPHY **TOM FENENGA** • ILLUSTRATION **DAVID RADTKE**

4 SET THE POSTS
Place each post assembly in its hole. You'll need at least one helper for this job. Be careful so the sides of the hole don't cave in.

5 BRACE THE POSTS
Position and plumb the posts, locking them into place with horizontal and diagonal bracing. No need to buy extra lumber for bracing; just use the 1x3s that you'll later use for roof slats.

6 FILL THE POSTHOLES
Mix concrete and fill in around the post assemblies. Let the concrete harden at least one day before removing the bracing.

Prep the lumber

Every stack of treated lumber contains some beautiful wood and some ugly stuff. Take the time to pick through the pile and select good material—your project will look much better. When you get the lumber home, you'll be eager to start right away. But I strongly recommend that you let the lumber dry for a few days. Stack it with spacers so air can reach all sides of each board. Then stain it before building. Staining this pergola after assembly would be a slow, messy job. I applied two coats of Behr Semi-Transparent Waterproofing Wood Stain (No. 3533).

Setting the posts

You'll need to mark out a perfectly square layout for the posts. To start, position two strings exactly perpendicular to each other using the 3-4-5 triangle method (in this case, your measurements will be 9, 12 and 15 ft.). If you're not familiar with this trick, search online for "345 triangle." Once you get two lines squared, the other two will be easy. But double-check your layout with diagonal measurements (**Photo 1**) before you mark the posthole locations (**Photo 2**).

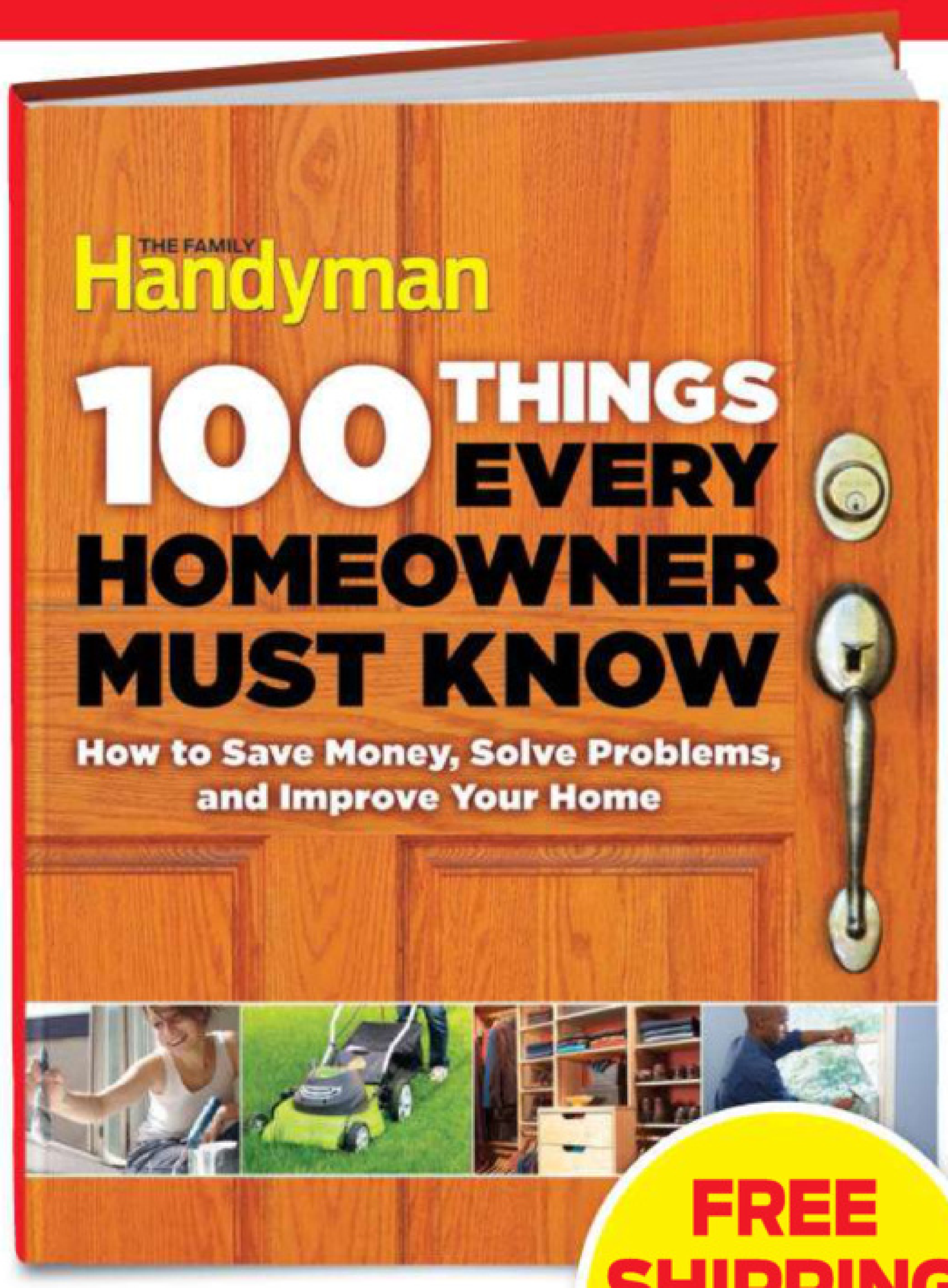
To keep the post groupings positioned precisely, I cut plates from treated plywood and fastened them to the posts (**Photo 3**). That way, you can position, plumb and brace each assembly of three posts as if they were one post (**Photos 4 and 5**).

Bracing the assemblies takes several trips up and down the ladder.

WHAT IT TAKES

TIME: Two weekends; the floor will be another weekend or two
COST: $1,300
SKILL LEVEL: Intermediate
TOOLS: Circular saw, drill, level, standard hand tools

The owner's manual for your house.



FREE SHIPPING
Use Promo Code:
100TEHMK

A **NEW BOOK** from the editors of *The Family Handyman* magazine that tells you:

- How to **SAVE $100**—just by pushing a button
- **Make appliances last** years longer
- **Cut heating and cooling costs** the easy way
- **Hire the best** contractor
- **The smartest thing** you can do before going on vacation
- **Learn how** to repair concrete and take care of mold and mildew
- **Plus, MAKES A GREAT GIFT!**

Get **100 THINGS EVERY HOMEOWNER MUST KNOW**

Order yours today at **rdstore.com/HomeownerMustKnow**

Also available nationwide wherever books are sold.

#1 in DIY Home Improvement

Start by screwing some horizontal 1x3 braces onto the tops of the posts. Make sure the post assemblies are spaced the same on the top as they are on the bottom. With the spacing established, you can brace the groups diagonally to the ground with stakes (**Photo 5**). Keep at it until it's close to perfect.

Use a tub or wheelbarrow to mix the concrete, then toss it into the hole (**Photo 6**). The mix isn't critical because you don't need to trowel a finish onto it. Just make sure you get it packed into the holes evenly around each grouping. I used about four bags per hole, but get a few extra bags just in case.

Fastening the headers

The next day you can install the headers (**Photo 7**). Overlap the corners as shown in **Figure A**. I removed my braces at the top, one at a time, as I leveled and installed each outer side header and then finished with the front and back. Be sure to take the thickness of your slab into consideration as you measure the distance to the bottom of the headers. Leave at least 80 in. between the slab and the header. Taller people may want to nudge it up a couple inches.

Once the outer headers (B and C) are in place, cut the posts flush with the top of the headers, I used a framing square to mark them and a circular saw to cut as deep as I could. I then used a handsaw and when my arms felt like they were ready to fall off, I used a 10-in. blade in my reciprocating saw. Next, cut and install the inner 2x10 headers at the front and back and then the rafter supports (E) cut from 2x8s. Rip the 2x8s to 6-1/2 in. at a 7-degree angle. The slightly wider 6-1/2-in. edge should go toward the inner side of the pergola. The rafters will rest on this support and extend to the outer side headers (C).

Building the roof

Measure the distance at the center of the pergola (**Photo 8**) from front to back at the top of the headers. Cut the 2x10 ridge beam (F) to this length and drive screws at an angle into the headers. Measure from the top edge of the ridge to the inner edge of the side header (C) on each side, starting at the midpoint

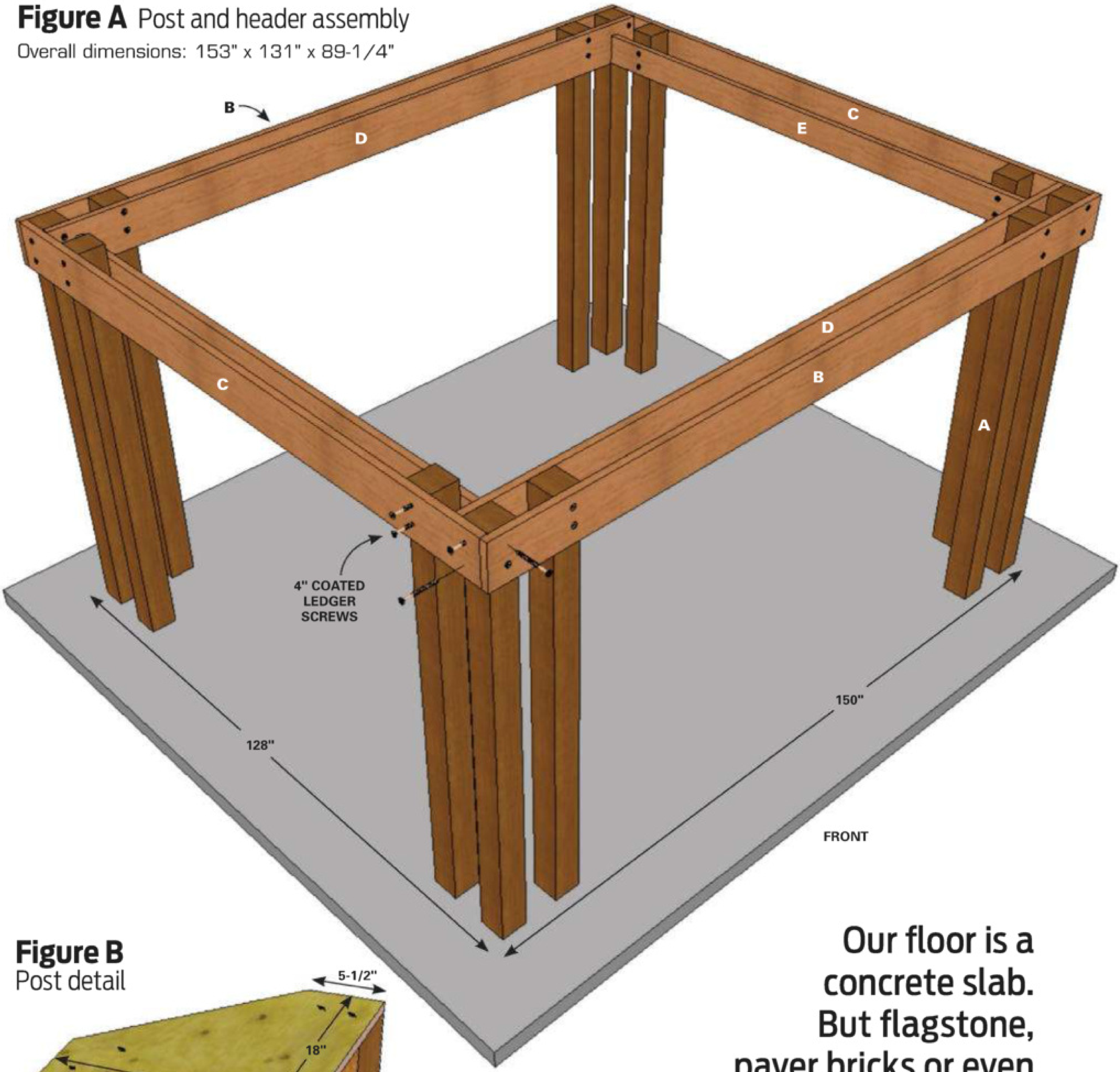
7 INSTALL THE HEADERS
Position the headers so they'll be at least 80 in. from the floor of the pergola. Screw them to the posts, then cut off the posts flush with the headers.

8 SET THE RIDGE BEAM
Mark the center of the front and back headers and then screw the ridge beam to the headers.

9 INSTALL THE RAFTERS
Cut the rafters to fit flush with the top of the ridge beam and 3/16 in. above the outer headers. Screw them into place.

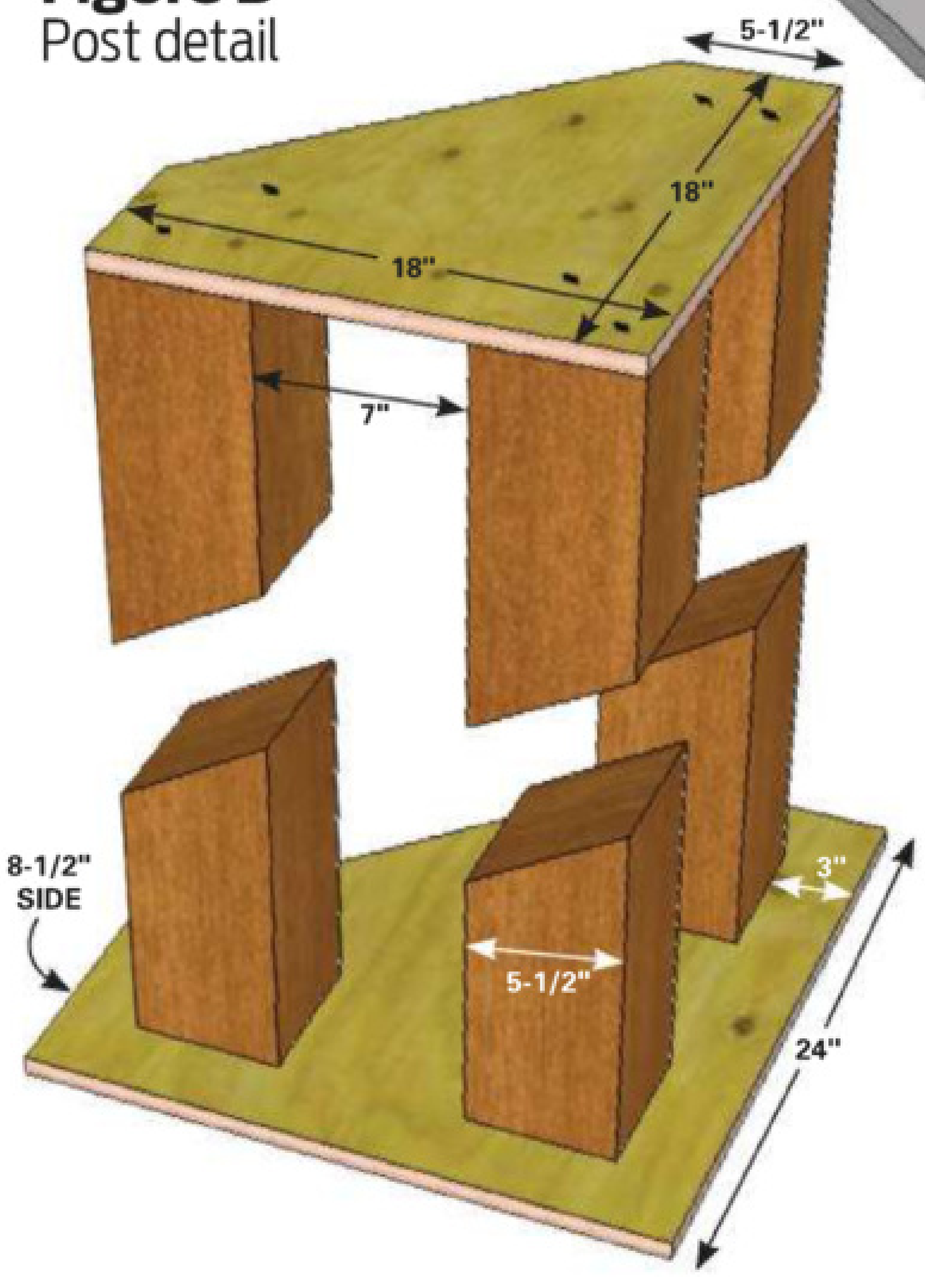
Figure A Post and header assembly

Overall dimensions: 153" x 131" x 89-1/4"



Our floor is a concrete slab. But flagstone, paver bricks or even a ground-level deck would work just as well.

Figure B
Post detail

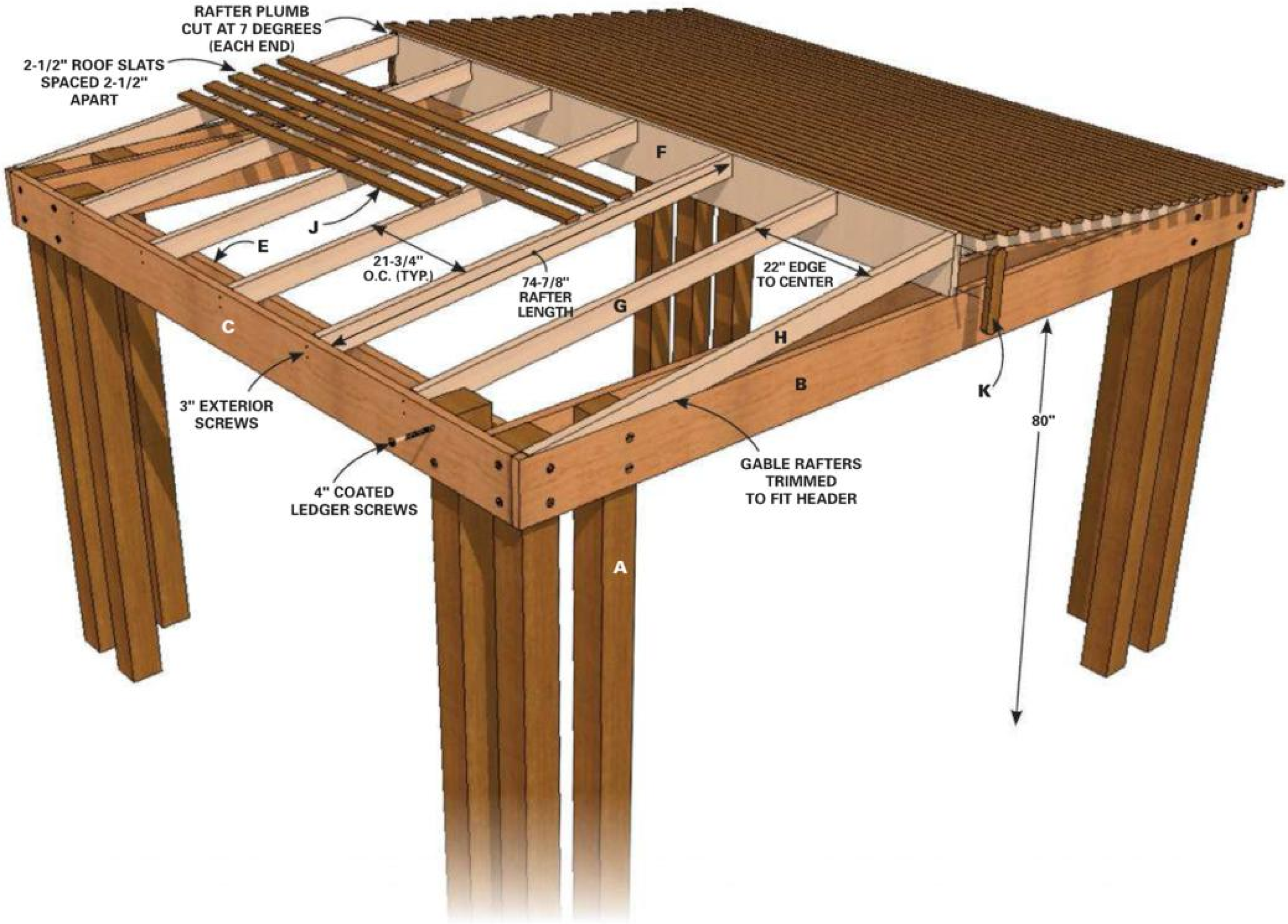


Cutting List

KEY	QTY.	SIZE & DESCRIPTION
A	12	5-1/2" x 5-1/2" x 10' treated pine (posts)
B	2	1-1/2" x 9-1/2" x 153" treated pine (front and rear headers)
C	2	1-1/2" x 9-1/2" x 128" treated pine (side headers)
D	2	1-1/2" x 9-1/2" x 150" treated pine (inner front and rear headers)
E	2	1-1/2" x 6-1/2" x 113-1/2" treated pine (side rafter supports)
F	1	1-1/2" x 9-1/2" x 131-1/2" treated pine (ridge beam)
G	10	1-1/2" x 3-1/2" x 74-7/8" treated pine (common rafters)
H	4	1-1/2" x 3-1/2" x 74-7/8" treated pine (gable rafters)
J	30	3/4" x 2-1/2" x 139" treated pine (roof slats)
K	2	1" x 2-1/2" x 12" treated pine (ridge cover plate)

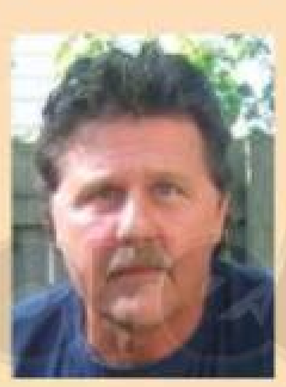
Note: The dimensions given here may vary slightly—measure before you cut!

Figure C Roof detail



Materials List

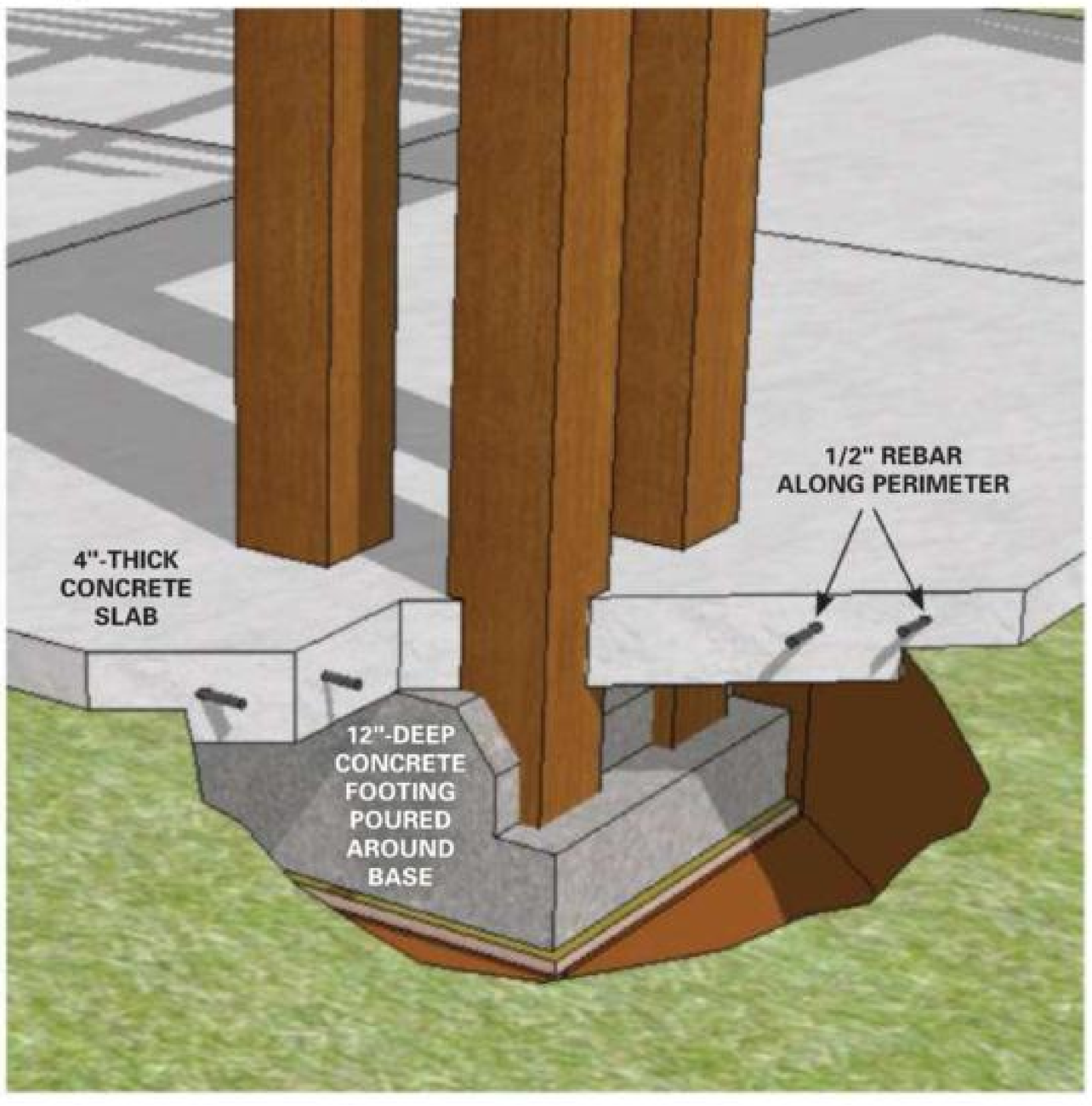
ITEM	QTY.
6x6 x 10' treated pine posts	12
4' x 4' sheet of 3/4" treated plywood	1
2x10 x 14' treated pine	4
2x10 x 12' treated pine	3
2x8 x 10' treated pine	2
2x4 x 7' treated pine	14
1x3 x 12' treated pine	30
5/4x6 x 2' treated pine (ridge cover plate)	1
1/4" x 4" coated deck ledger screws	48
No. 8 x 3-1/4" self-drilling exterior wood screws	60
No. 8 x 1-5/8" self-drilling exterior wood screws	210
Concrete for footings (80-lb. bags)	16
Concrete for slab	3 cu. yds.
1/2" rebar, 16' lengths	8
2x6 x 16'	4
1x4 x 2' stakes	24



MEET THE BUILDER

David Radtke is a designer, illustrator, remodeler and cabinet-maker in Minneapolis.

Figure D Footing and slab detail



of the ridge and the header. Cut the rafters to fit. Ideally it should be 7 degrees, but if your ridge is cupped slightly you may need to adjust the cut. Because my ridge was slightly cupped, I had 6-degree cuts on one side of the ridge and 8-degree cuts on the other side. Install the rafters and fasten them with screws (**Photo 9**).

The gable rafters (H) are the same as the common rafters except they sit atop the front and rear headers, so they need to be scribed (**Photo 10**) to fit. Fasten these to the ridge beam by toe-screwing at an angle or by screwing through the opposite side of the ridge at a slight angle into the rafter (this method give a cleaner installation and less chance of a protruding screw). Finally, screw through the side headers into the rafter ends, making sure your spacing is even.

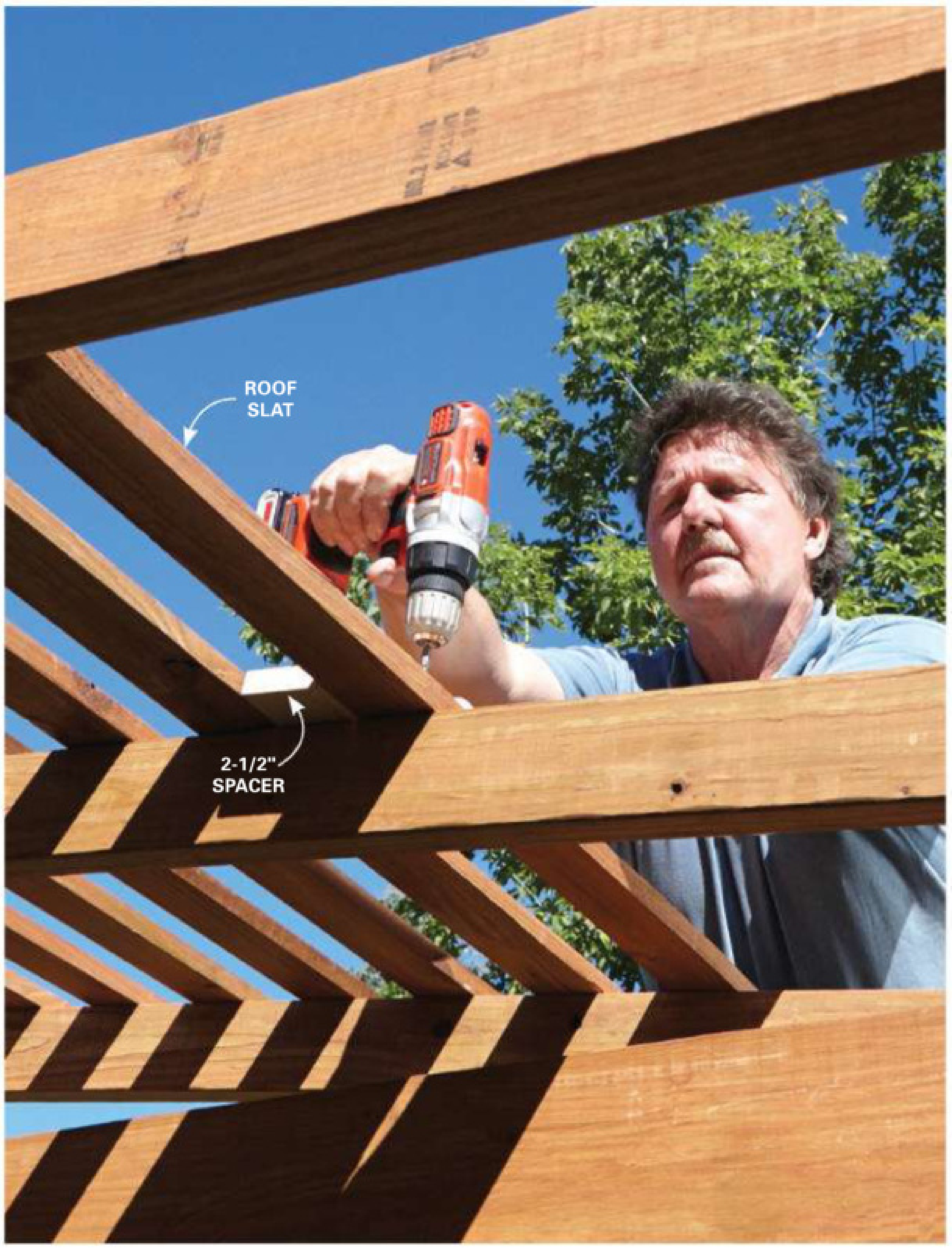
I cut 2-1/2-in.-wide roof slats from 1x6 material because it was better quality than the 1x3s available at the lumberyard. Start installing the slats parallel to the ridge and work your way down each side. Overhang the front and back of each course about 5 in., then you can string a line and trim them once they're all installed. Use a 2-1/2-in. spacer as you screw each row to the rafters (**Photo 11**). Check your progress every fifth course to make sure you're staying perpendicular to the rafters and that you'll finish with a full-width slat at the end.

Once all the roof slats are fastened and trimmed, cut the ridge covers (K) and nail them over the exposed end grain at each end of the ridge beam. I mitered the ridge cover tops to fit tightly under the roof slats.

Finishing up

If you stained the lumber before assembly, all you have to do now is coat any unstained ends of parts. Be sure to stain the top ends of each post to reduce water absorption and cracking. For extra insurance, I coated the post tops with stain followed by exterior paint. If you plan to pour a concrete floor as we did, go to familyhandyman.com and search for "concrete" to find several articles about working with concrete.

10 MARK THE GABLE RAFTERS
Tack a 2x4 to the end of the ridge beam and then align it with the header and in the same plane as the other rafters. Scribe each end of the 2x4 to create a pattern for the other gable rafters.



11 INSTALL THE SLATS
Screw the roof slats to the rafters using a spacer to position them. Make sure each slat overhangs the gables by about 5 in. Then, after all the slats are in place, mark the ends with a string and trim them off.

Start Over
Smooth Over
Texture Over
Color Over

*See product label or website at behr.com for more information.

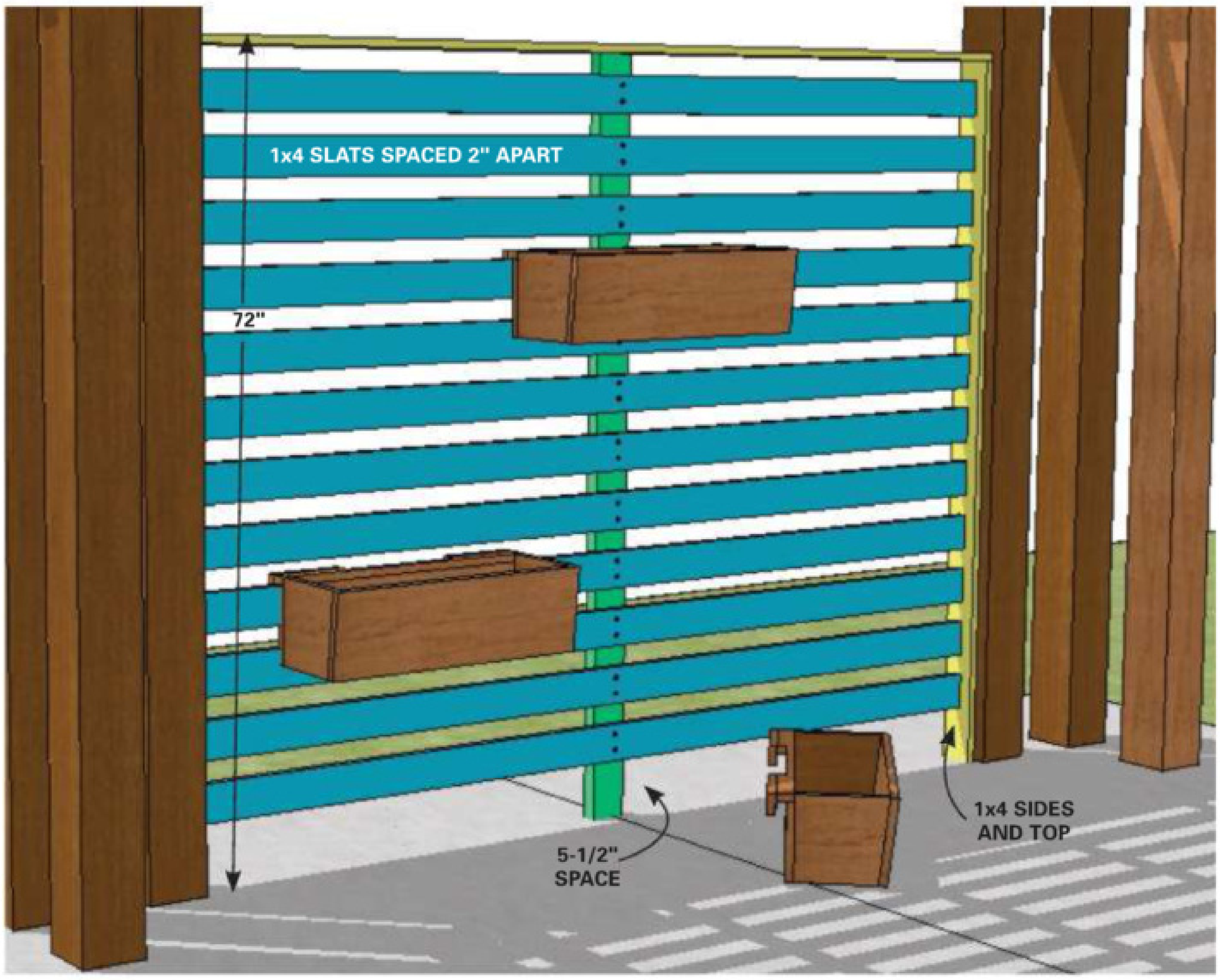
The ultimate do over for wood and concrete. Don't replace, resurface.* BEHR DECKOVER® Coating
behr.com/DECKOVER

ADD PLANTS AND PRIVACY

For privacy and greenery, I built a trellis on one side of the pergola. If you want the feel of an outdoor room, you could add trellises on two or three sides.

My trellis is simply 1x4s and a 2x4 joined with 1-5/8-in. screws. I built it on the pergola floor, then stood it up and screwed it to the posts. I sized the planter boxes to hold 6-in. plastic pots and made them 25 in. long, but you can make them whatever length will work.

Figure E Privacy trellis



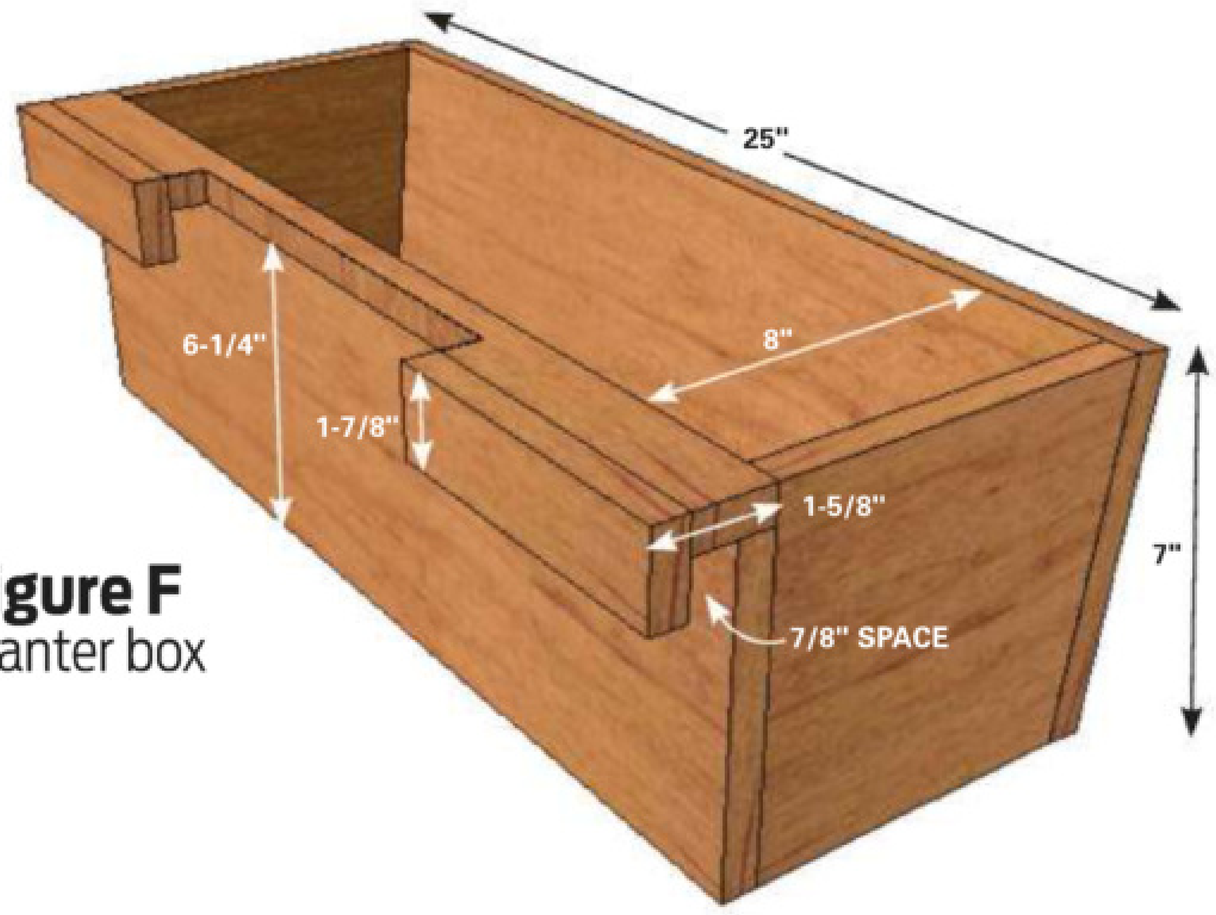


Figure F Planter box

Cutting List:
Privacy trellis

KEY	QTY.	SIZE & DESCRIPTION
A	2	3/4" x 3-1/2" x 71-1/4" (vertical sides)
B	1	3/4" x 3-1/2" x 92" (horizontal top)
C	1	1-1/2" x 3-1/2" x 71-1/4" (center support)
D	12	3/4" x 3-1/2" x 90-1/2" (horizontal slats)

Materials List:
Privacy trellis and planter box

ITEM	QTY.
1x4 x 8' treated pine	15
2x4 x 8' treated pine	1
1x8 x 10' cedar (per planter box)	1
No. 8 x 1-5/8" self-drilling exterior screws	50
1-3/4" galvanized nails (for planter box assembly)	1 box
Exterior construction adhesive (for planter assembly)	1 tube

Genovations®
Deck Flooring
& Railing

Out with the old,

in with the **bold.**

Genovations® PVC Decking is a great way to update an old existing deck, and its 100% PVC construction means you'll never have to worry about stains, fading, slipping, or mold.

Just some of the many ways Genovations® decking is distinctly different. Learn more at www.genovationsdeck.com

MADE IN THE USA

800-521-7488

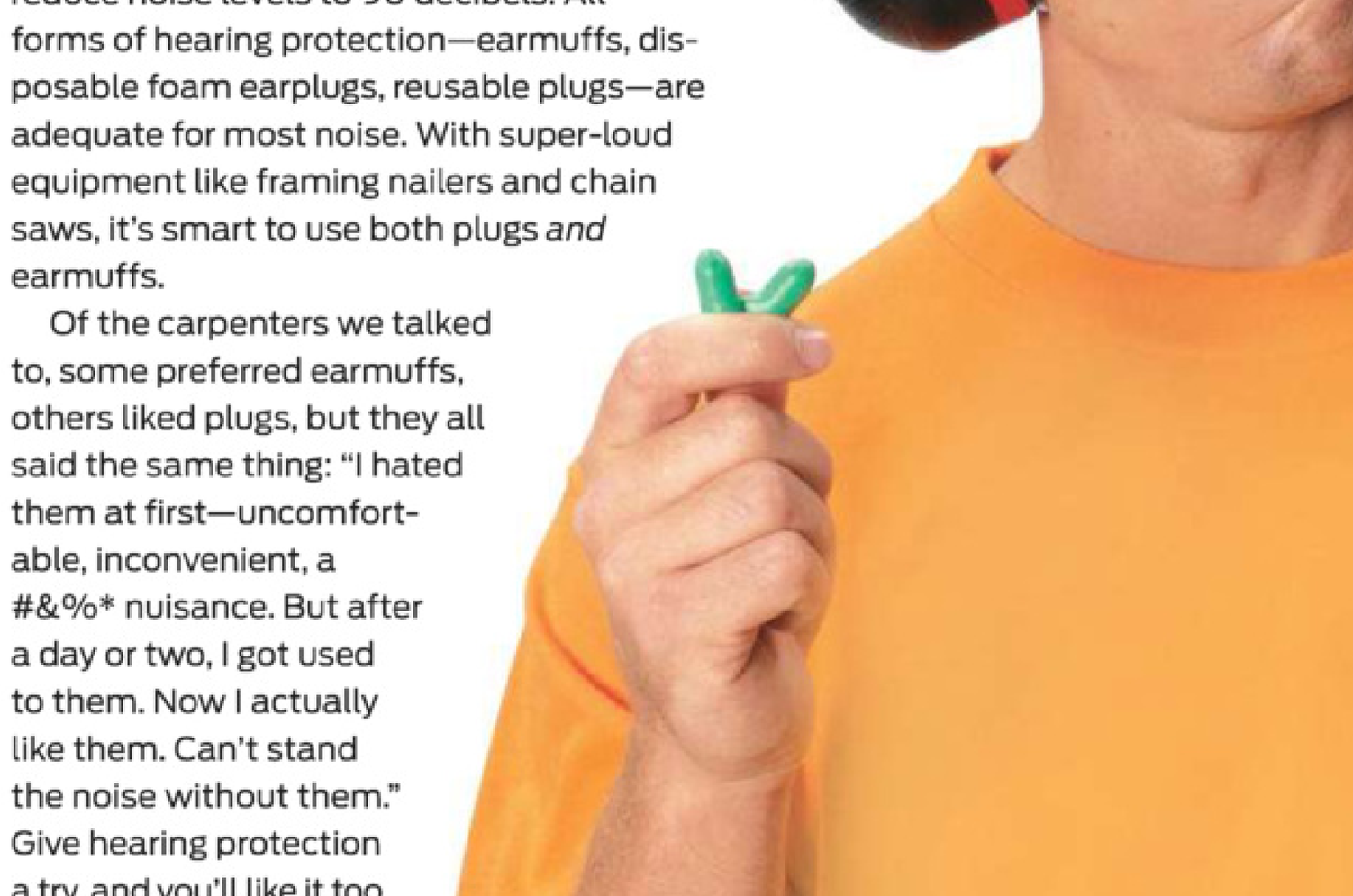
What every homeowner MUST know

BY GARY WENTZ editors@thefamilyhandyman.com

HEARING PROTECTION: WHICH ONE SHOULD I USE?

Sure, the risk of hearing damage is highest for those who use loud equipment every day. But if you use a shop vacuum, leaf blower or circular saw without hearing protection, you're doing permanent damage every time. And that's just dumb because protecting your ears is so easy. The goal is to reduce noise levels to 90 decibels. All forms of hearing protection—earmuffs, disposable foam earplugs, reusable plugs—are adequate for most noise. With super-loud equipment like framing nailers and chain saws, it's smart to use both plugs *and* earmuffs.

Of the carpenters we talked to, some preferred earmuffs, others liked plugs, but they all said the same thing: "I hated them at first—uncomfortable, inconvenient, a #&%* nuisance. But after a day or two, I got used to them. Now I actually like them. Can't stand the noise without them." Give hearing protection a try, and you'll like it too.

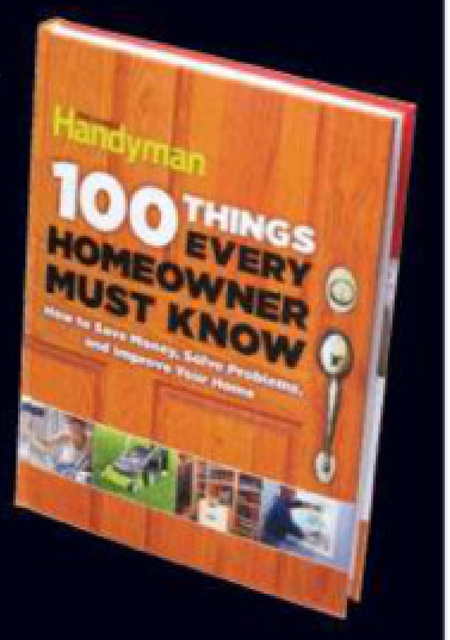


Squeeze tubes are trouble

Squeeze tubes are convenient. But if you need to lay a neat, even bead of caulk, use a caulk gun instead. With a squeeze tube, it's difficult to produce a steady flow. And that means a lumpy bead.

Want more?

100 Things Every Homeowner Must Know will make you a smarter homeowner (even if you're already pretty smart). Buy your copy today at rdstore.com/Homeowner and enter promo code 100TEHMK for free shipping. Also available wherever books are sold.



ART DIRECTION **MARY SCHWENDER** • PHOTOGRAPHY **HSP**

SAVE TIME & MONEY

THE FAMILY Handyman #1 in DIY Home Improvement

FHMA1501

GET YOURS TODAY!

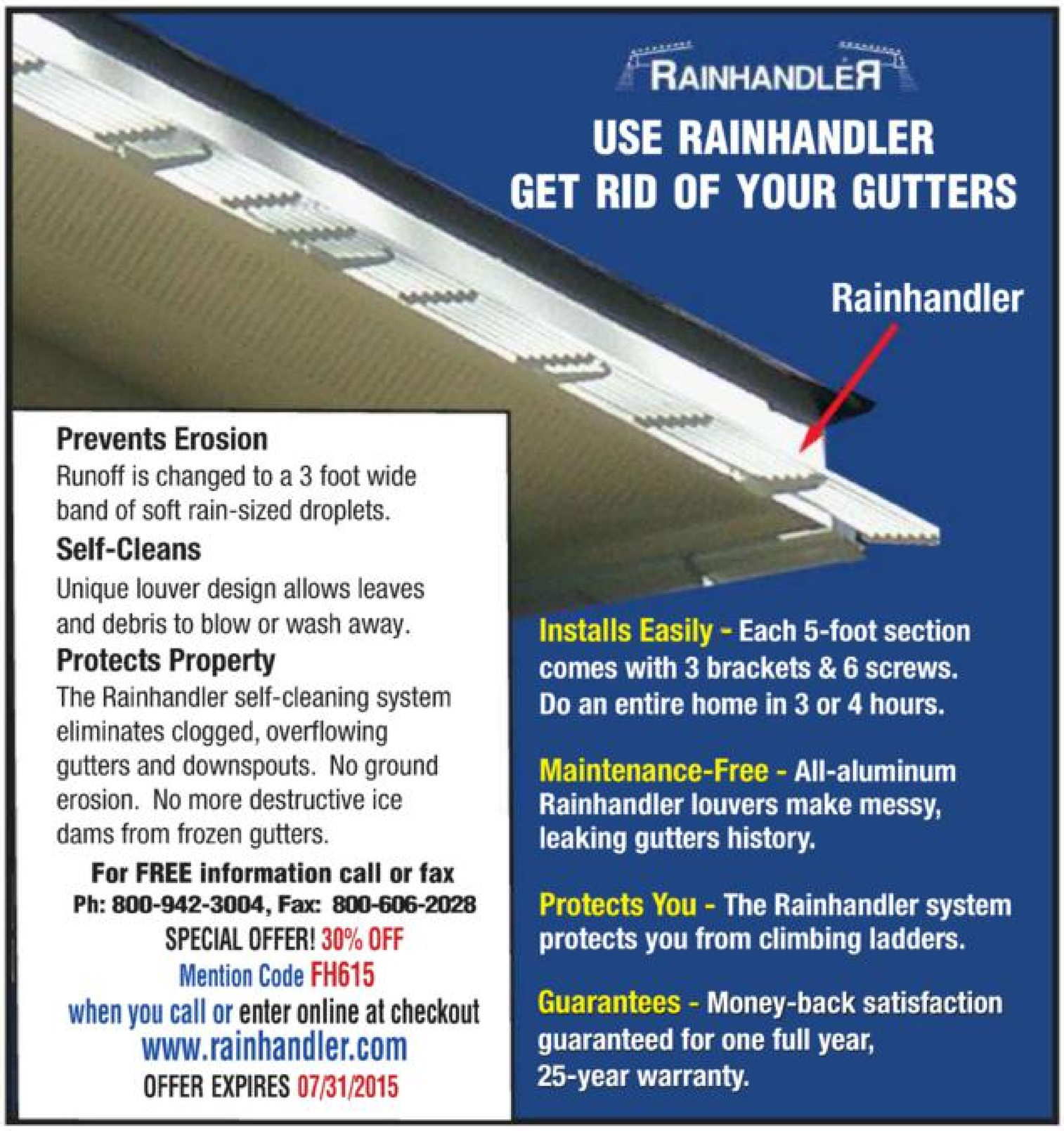
Tackle DIY Home Improvement with Confidence!

- **50+ Handy Repair Guides** for common household problems.
- **100+ DIY Projects** complete with clear directions.
- **150+ Time- and Money-Saving Tips** from the pros.
- **100s of Step-By-Step Photos**—that SHOW you how to finish the job.
- **Bonus Sections** on storage, painting, bathrooms & more.
- **288 pages** filled with full-color inspiration.

Order your book online today at

familyhandyman.com/FH15SA

or call **1-800/344-2560** mention Suite FHF21VHO1S



Prevents Erosion
Runoff is changed to a 3 foot wide band of soft rain-sized droplets.

Self-Cleans
Unique louver design allows leaves and debris to blow or wash away.

Protects Property
The Rainhandler self-cleaning system eliminates clogged, overflowing gutters and downspouts. No ground erosion. No more destructive ice dams from frozen gutters.

For FREE information call or fax
Ph: 800-942-3004, Fax: 800-606-2028
SPECIAL OFFER! 30% OFF
Mention Code FH615
when you call or enter online at checkout
www.rainhandler.com
OFFER EXPIRES 07/31/2015

Installs Easily - Each 5-foot section comes with 3 brackets & 6 screws. Do an entire home in 3 or 4 hours.

Maintenance-Free - All-aluminum Rainhandler louvers make messy, leaking gutters history.

Protects You - The Rainhandler system protects you from climbing ladders.

Guarantees - Money-back satisfaction guaranteed for one full year, 25-year warranty.

Water heater breakdown: Fix or replace?

A water heater's life expectancy is typically 10 to 15 years. So if your unit is 10 years old or more, replacing it is usually smarter than hiring a pro to repair it. Even if it's just eight years old, consider buying a new one.

But if you're willing to fix it yourself, the equation changes drastically. In most cases, replacement parts will cost you just $10 to $40. And that's a good deal, even if you get just a few more years out of the heater. To see how to make the most common repairs, go to familyhandyman.com and search for "water heater."

GOT A HOMEOWNER TIP?

Send it to editors@thefamily-handyman.com. If we publish it, you'll get a $100 gift card.

America's #1 Selling Brush Mower for Over 25 Years!

The most complete line of walk-behind AND tow-behind models ANYWHERE.

ONLY the DR® Field and Brush Mower has...

UNSTOPPABLE POWER to mow down saplings up to 3" thick.

A LOCKABLE DIFFERENTIAL for easy turning and go-anywhere traction.

4-SEASON FUNCTIONALITY with quick-change attachments.

87451X © 2015

FREE SHIPPING
0% 36 MO. FINANCING
SOME LIMITATIONS APPLY
Call or go online for details.

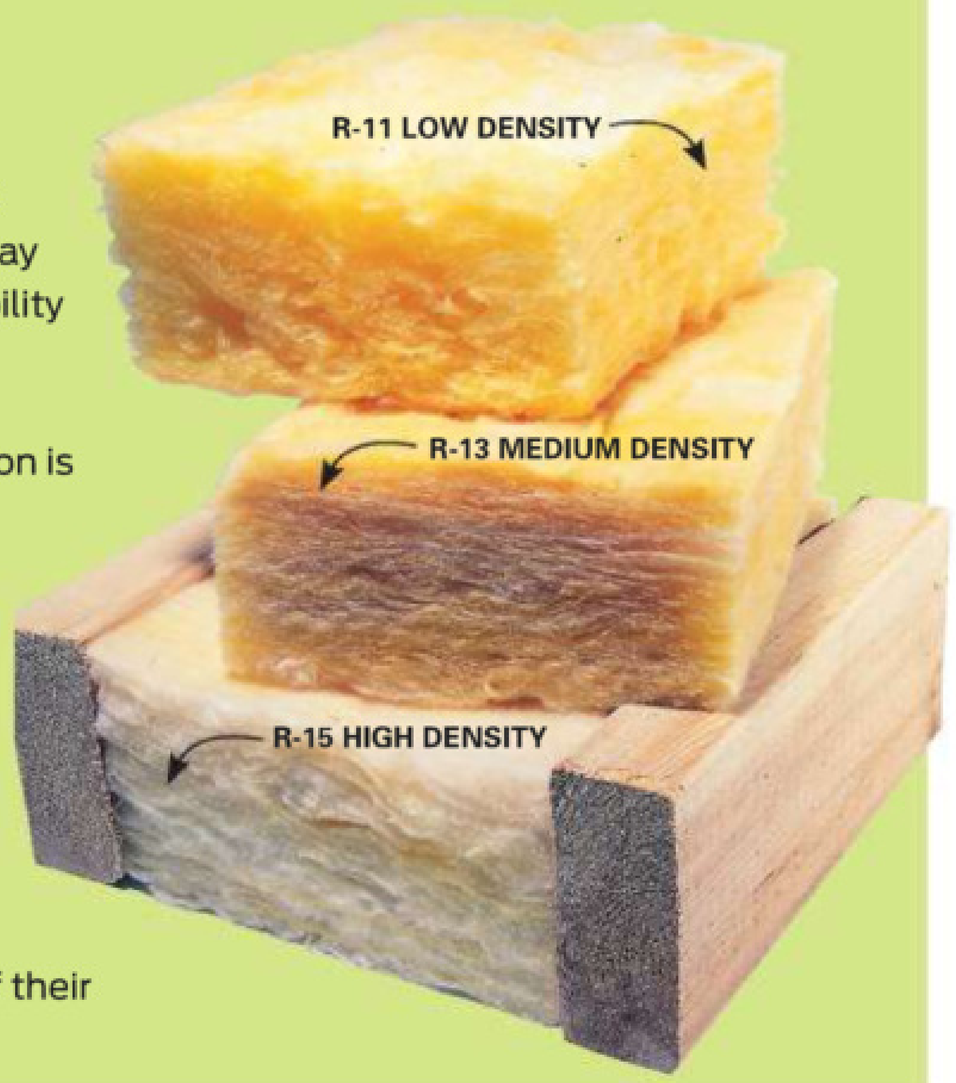
Call for FREE DVD and Catalog!
TOLL FREE **800-731-0414**
DRfieldbrush.com

WHITE WORKS NOW ... AND LATER

Neutral colors—shades of white, gray or beige—are a wise choice for fixtures like toilets, tile, tubs and countertops that are not easy to change. They don't provide much drama, but you can add pizzazz with paint or simple, inexpensive accents like rugs or pottery. And as fashions change, you can update the look without costly remodeling.

What's R-value?

R-value is a measure of the resistance to heat flow, a way of indicating insulation's ability to stop heat from moving through it. The higher the number, the better. Insulation is labeled by total R-value. Two factors determine that number: the thickness of the insulation and the insulating ability of the material. The fiberglass batts shown here, for example, are all the same thickness but differ in R-value because of their different densities.



It's here. Smarter Home Security:

24/7 Protection.
Exceptional Savings.
No Annual Contracts.

SimpliSafe Home Security

For 100 years the alarm industry has been scaring customers into long-term contracts at highway robbery prices.

We believe being safe should be simple. SimpliSafe home security systems are easy to self-install, easy to purchase direct from us online, and don't require a contract or a telephone line. They are also wireless, cellular, and customizable.

"...better, smarter home security."
— CNET

EDITORS' CHOICE DEC 2013 c|net

Get 10% off

www.SimpliSafe.com/Handy

NEW!

GET FAST, EASY PRECISE MEASUREMENTS.

WHEEL MASTER CLASSIC 12™

ONE-PERSON, FEET-INCH MEASURING WHEEL

- No more hard-to-use tapes
- Two-year warranty
- Measure up to 9,999' 11"
- Sturdy, light-weight, affordable
- Convenient kickstand

For: Landscaping
Paving / Pavers
Fencing

2 YEAR WARRANTY

CALCULATED INDUSTRIES®
Call: 1-800-854-8075
Visit: calculated.com

World's 1ST Self-Feeding Chipper *for Homeowners!*

DR® RAPID-FEED™ CHIPPERS
devour branches up to 5-½" thick!

OVERSIZED, VERTICAL HOPPER self-feeds most branches to save you time and energy.

TOP-DISCHARGING for easily depositing chips into a truck, trailer, or into the woods.

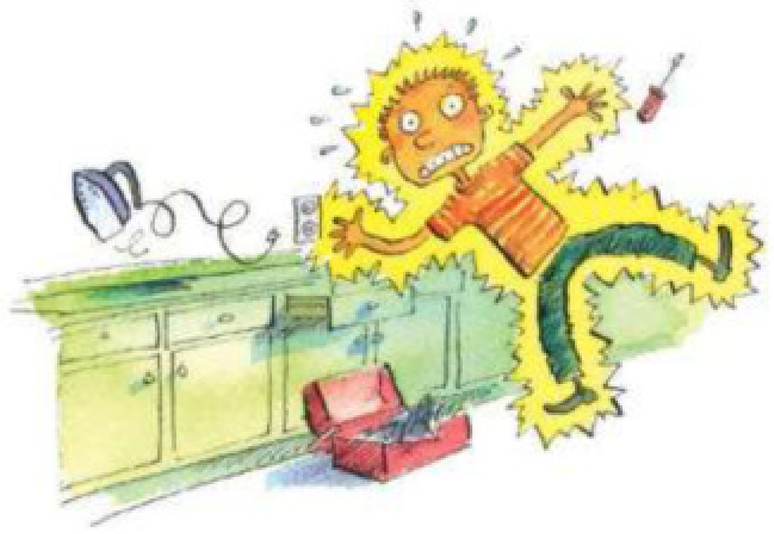
3X FASTER than ordinary chippers, thanks to powerful engines and massive, energy-boosting flywheels.

87453X © 2015

FREE SHIPPING
0% 36 MO. FINANCING
SOME LIMITATIONS APPLY
Call or go online for details.

Call for FREE DVD and Catalog!
TOLL FREE **800-731-0414**
DRchipper.com

PROFESSIONAL POWER DR DONE RIGHT



Don't trust breaker panel labels

Inside your main electrical panel, you'll see labels or lists indicating which breaker controls which circuit. These labels are a reasonably good guide, but they're not completely reliable, especially in older homes that have been through remodeling projects.

For example, you might find that there's one outlet in a room that's not on the same circuit as all the others in that room, yet it's not listed elsewhere at the panel. That orphan outlet could be connected to almost any other circuit in your home. In some cases, you might even find wires from different circuits in the same junction box. The bottom line: Always use a voltage detector to make sure the power is off before you do electrical work.

Galvanized pipes get plugged

If you have galvanized steel pipes in your home and low water flow at faucets, chances are the pipes are to blame. Galvanized pipe is prone to mineral buildup, which eventually chokes off the water flow. The example shown here isn't unusual; any veteran plumber has seen much worse cases. Complete replacement of the water supply pipes is the best cure, but you can often improve flow a lot just by replacing exposed horizontal sections.

PET ACCIDENTS: ACT FAST

If your pet does a dirty deed on the carpet, clean it up immediately. Urine can damage carpet fibers and even change their color. The longer you wait, the greater the risk. If your pet is a frequent offender, consider buying a small, handheld carpet cleaner designed to extract liquids. Some models cost less than $50.

Eraser sponges work

When nothing else works, one of these pads probably will. The material they're made from was originally used for insulation. But it also provides very aggressive, very fine abrasion; that means it scours away surface stains without damaging most surfaces. Mr. Clean Magic Eraser and 3M Scotch-Brite Easy Erasing Pad are two common brands.

©2015 CR Brands
MEAN GREEN
WORKS BETTER ON TOUGH GREASE & GRIME
SUPER STRENGTH
CLEANER & DEGREASER
INDOOR
OUTDOOR
GARAGE
WORKS BETTER
ON TOUGH GREASE & GRIME
PROVEN TO CLEAN BETTER than other brands. Indoors and out, it is the ultimate TOUGHNESS YOU CAN TRUST.
Find some near you
in the cleaning aisles at Walmart, Dollar Stores, Select Home Improvement & Grocery Stores
MANUFACTURER COUPON EXPIRES 01/31/16
SAVE $.50
NOW on any Mean Green item 32 oz. or larger only.
RETAILER: We will reimburse you the face value of this coupon plus 8c handling provided you and the consumer have complied with the terms of this offer. Invoices proving purchase of sufficient stock to cover presented coupons must be shown on request. Any other application may constitute fraud. Coupon void where prohibited, taxed or restricted. Consumer must pay any sales tax. Cash value .001¢. Reproduction of this coupon is expressly prohibited. Mail to CR Brands, Inc., CMS Dept #05752, One Fawcett Dr., Del Rio, TX 78840. Good only in USA.
©2015 CR Brands, Inc.
07205547-110458
110458

CABINET DOOR RACK

A super-simple solution for cabinet chaos

by Spike Carlsen
editors@thefamilyhandyman.com

Some people think black holes exist only in outer space. Not true. There's probably one under your kitchen sink. Place detergent, cleaners or sponges under there and they disappear forever—or at least become really, really hard to find.

Here's a simple project to bring order to the chaos: a door-mounted storage rack. You can modify this basic idea to organize other cabinets too.

WHAT IT TAKES

TIME: 2 hours
COST: $10 to $20
SKILL LEVEL: Beginner
TOOLS: Circular saw, miter saw or jigsaw, and drill

Planning and materials

As you plan your rack, consider building multiple racks. Building two or three doesn't take much more time than building one. Also think about (and measure!) the items you want your rack to hold. You may want to mount the upper shelf a little higher or lower than we did.

Most home centers carry everything you'll need, including 1/4-in.-thick wood strips in species like pine, oak and poplar. If you don't find thin material alongside the other lumber, look for "mull strip" or "mullion" in the millwork aisle. The wood quantities on our Materials List will yield a rack sized for most cabinet doors, but you may need a little more or a little less.

How to do it

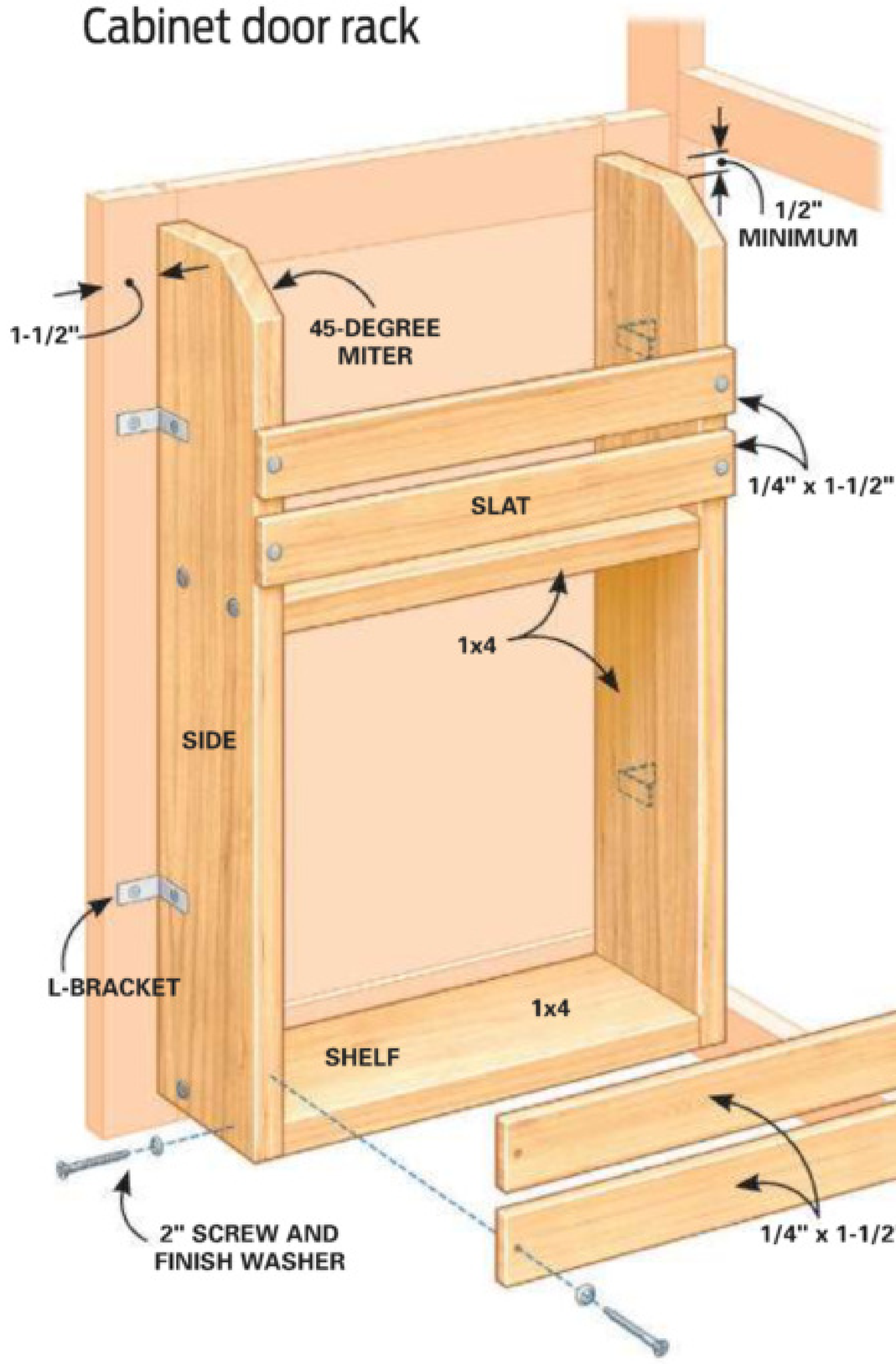
Begin by looking inside your cabinet. With the door closed, this rack will project 3-3/4 in. into the interior. Make sure the installed rack won't bump into your sink, pipes, garbage disposal or other fixed object.

Measure the cabinet door and opening to determine the measurements of the sides and shelves (**Photo 1**). Mark the position of the upper shelf on the sides: We positioned ours 12 in. from the bottom, but you can adjust the location based on your needs. Secure the shelves to the sides using 2-in. screws and finish washers (**Photo 2**). Drill holes in the four cross slats 3/8 in. from the ends and fasten them to the sides with 3/4-in. screws.

With the rack assembled, we gave it two coats of lacquer. Lacquer is a durable finish, dries in minutes and comes in spray cans for quick, no-mess application.

After the finish dries, screw the four L-brackets to the sides of the racks, making sure to position them so they won't interfere with the door hinges. Clamp the rack to the door, predrill mounting holes using the L-brackets as guides, and secure the rack to the door (**Photo 3**). Put a strip of tape 4 in. back from the front of the cabinet to indicate a "No Parking" zone for items stored inside.

Figure A
Cabinet door rack



Materials List

1x4 (6 ft.), 1/4-in. x 1-1/2-in. strip (6 ft.), 1-in. L-brackets (4), 3/4-in. screws, 2-in. screws, finish washers, spray lacquer

1 MEASURE TO SIZE THE RACK
Measure the width of the door and cut the rack shelves 4-1/2 in. shorter than that measurement. Measure the height of the cabinet opening and cut the rack sides 1 in. shorter.

2 BUILD THE RACK
Mark the location of the top shelf on the sides. Drill screw holes and fasten the sides to the shelves using 2-in. screws and finish washers. Add the slats, apply a finish and screw brackets to the rack.

3 MOUNT THE RACK
Center the rack on the door and drill screw holes. Wrap tape around the drill bit to act as a depth guide so you don't drill through the door. Clamps aren't absolutely necessary for this step, but they're a big help.

ART DIRECTION **VERN JOHNSON** • PHOTOGRAPHY **TOM FENENGA** • ILLUSTRATION **FRANK ROHRBACH III**

I TEACH A CLASS OF 4TH GRADERS

with my RA pain

IT'S NOT OK TO JUST GET BY WITH RA PAIN.

Nobody chooses to have RA, but you do have control over how you live your life with it. If you feel like you're just getting by, talk to your doctor. But keep in mind that patients and rheumatologists often think about RA in different ways. Rethinking how you have the conversation could make a difference in what your doctor recommends.

Visit **RethinkRA.com** to order your free **RethinKit** today.

Pfizer Copyright © 2013 Pfizer Inc. All rights reserved. April 2014 TRA563107-01

7 ROOF PROBLEMS

and what to do about them

by Larry Roepke
editors@thefamilyhandyman.com

Your roof covers the largest asset you own, so it pays to know the signs of trouble. Fortunately, many of the danger signals are easy to see—you can sometimes even spot them from the ground. (Tip: Binoculars help!)

A small leak can go undetected for years, causing huge damage before you notice anything. It's a good idea to inspect your roof regularly. Many contractors offer free inspections. But even if you have to pay, it's better than finding leaks after the damage is done. Over the years, I've made thousands of inspections and seen thousands of looming problems. Here are a few of the most common and easy to recognize ones.

MEET THE EXPERT

Larry Roepke, a consultant and a manager of a roofing company, was a contractor for 15 years. When he isn't inspecting roofs, you can find him working on his cabin in the north woods.

SHINGLES USUALLY AREN'T THE PROBLEM

Shingles rarely leak, even when they're in bad shape. The ones shown here, for example, were crumbling and long overdue for replacement when I took this photo. But they weren't leaking.

Most leaks occur where the shingles stop: at chimneys, walls, vents or valleys. So although you shouldn't ignore aging shingles, you should look for trouble in other areas first.

ROOF CEMENT

Metal flashing prevents leaks where shingles meet other surfaces, like walls and chimneys. Proper flashing work takes time and know-how, so sloppy roofers sometimes slather on roof cement instead. It seals out water long enough for them to cash your check, but it soon hardens, cracks and leaks. In the end, all it does is make a proper repair more difficult. So if you see heavy "tar" patchwork on your roof, fix it right—before it leaks and leads to interior damage.

TAR MEANS TROUBLE
Roofing cement may seal out water for a few months, even a few years. But "tar" is sure to fail eventually.

NO CHIMNEY CRICKET

A wide chimney forms a dam on your roof. Debris builds up behind that dam and holds moisture, which leads to rusted flashing and wood rot. Any chimney wider than 30 in. needs a "cricket," or "saddle": basically a small roof built behind the chimney. A properly installed chimney cricket will direct water and debris around the chimney and off the roof. If your chimney doesn't have one, watch for holes rusting through the flashing. If you're getting a new roof, be sure the contractor's bid includes a cricket.

A DAM ON THE ROOF
A wide chimney traps debris, which stays wet and causes rust or rot.

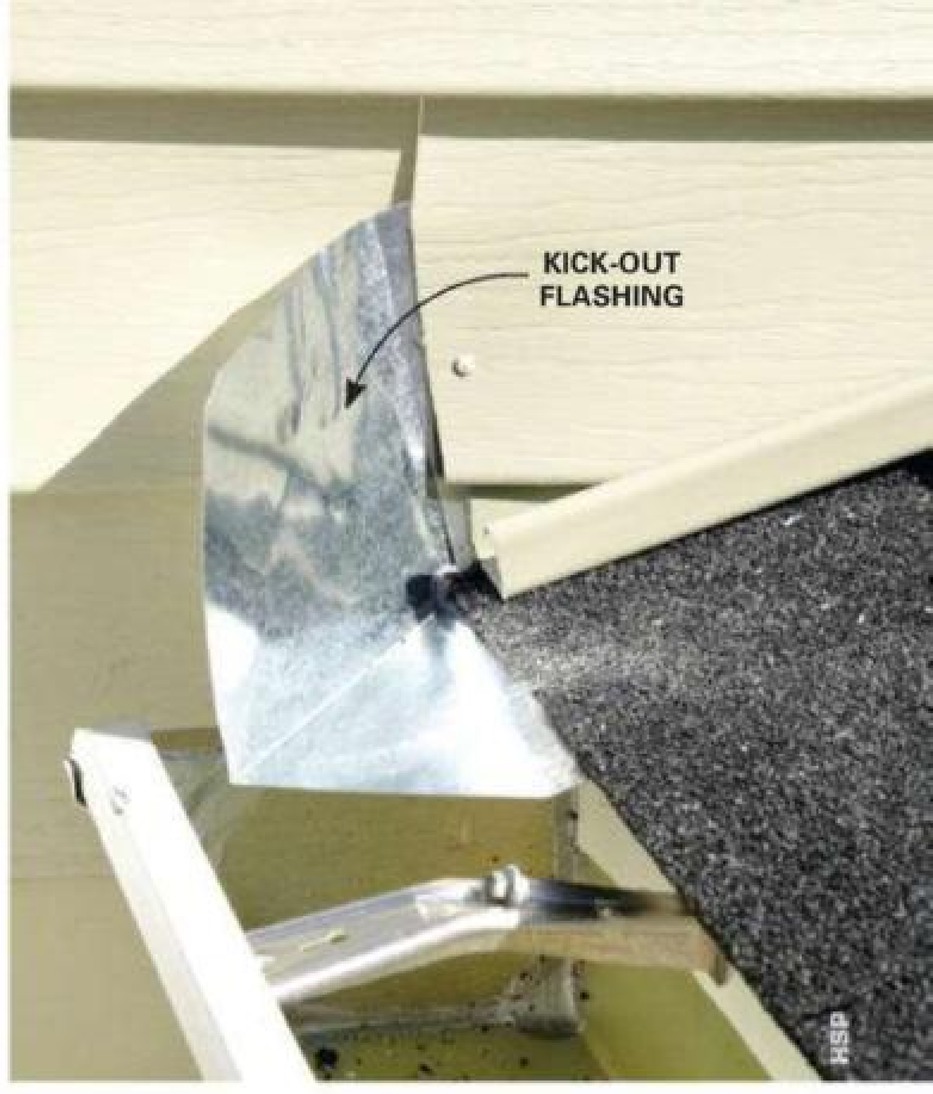
A CRICKET DIVERTS DEBRIS
A mini roof behind the chimney channels water flow and debris away from the chimney.

ART DIRECTION **VERN JOHNSON** • PHOTOGRAPHY **LARRY ROEPKE UNLESS NOTED**

MISSING KICK-OUT FLASHING

Kick-out flashing is critical where a roof edge meets a sidewall. Without it, roof runoff flows down the wall and possibly *into* the wall. This is worst when there is a door or a window below and water can seep behind the trim. You might not notice it for years, but eventually rot will destroy sheathing and framing. I've seen homes where the stucco was the only thing holding up the wall! Don't wait for that to happen to you. To see how to add kick-out flashing, go to familyhandyman.com and search for "kick out flashing."

WATER GETS INTO WALLS
Without kick-out flashing, water flows down the wall and seeps behind siding and trim. Water may enter the walls close to the roof as shown here, or at any point downhill from the roof.



KICK-OUT FLASHING IS SIMPLE
Kick-out flashing just consists of a bent section of step flashing that diverts water away from the wall.

BAD CHIMNEY FLASHING

Good chimney flashing includes sections of "step flashing" that run up the sides of the chimney, and "counterflashing." Counterflashing fits into grooves cut into the chimney and covers the step flashing. Cutting, fitting and installing all those parts takes time, so sloppy roofers take shortcuts.

Improperly flashed chimneys cause lots of rotting roof sheathing and framing members. Chimneys need to be properly step-flashed and counterflashed so that water can't run down the face of the chimney and into the attic. I can't tell you how many times I've seen chimneys with no flashing, or bad flashing that relies on caulk or roof cement. If you suspect your flashing is shoddy, crawl into the attic after a heavy rain. Look for signs of water around the chimney and downhill from it.

SHORTCUT FLASHING
Instead of several sections of flashing covered by counterflashing, the side of this chimney has just two pieces of flashing. Big, leaky gaps have opened at the ends of the flashing.

GOOD FLASHING
Proper flashing includes many parts, including counterflashing to cover the step flashing. Counterflashing may be a single piece or several as shown here.

Stonefiags

WATER GETS BEHIND GUTTERS
If there's no gutter apron, water seeps behind gutters, damaging fascia and soffits.

MISSING GUTTER APRON

When water flows off the edge of your roof, some of it clings to the underside of the shingles and dribbles toward the fascia. If you have gutters but no gutter apron to stop the water, it will wick behind the gutter. Eventually the fascia, soffits and even the roof sheathing will rot. You may see water stains below the gutter on the fascia and soffit. This is a sure sign that the gutter apron is missing.

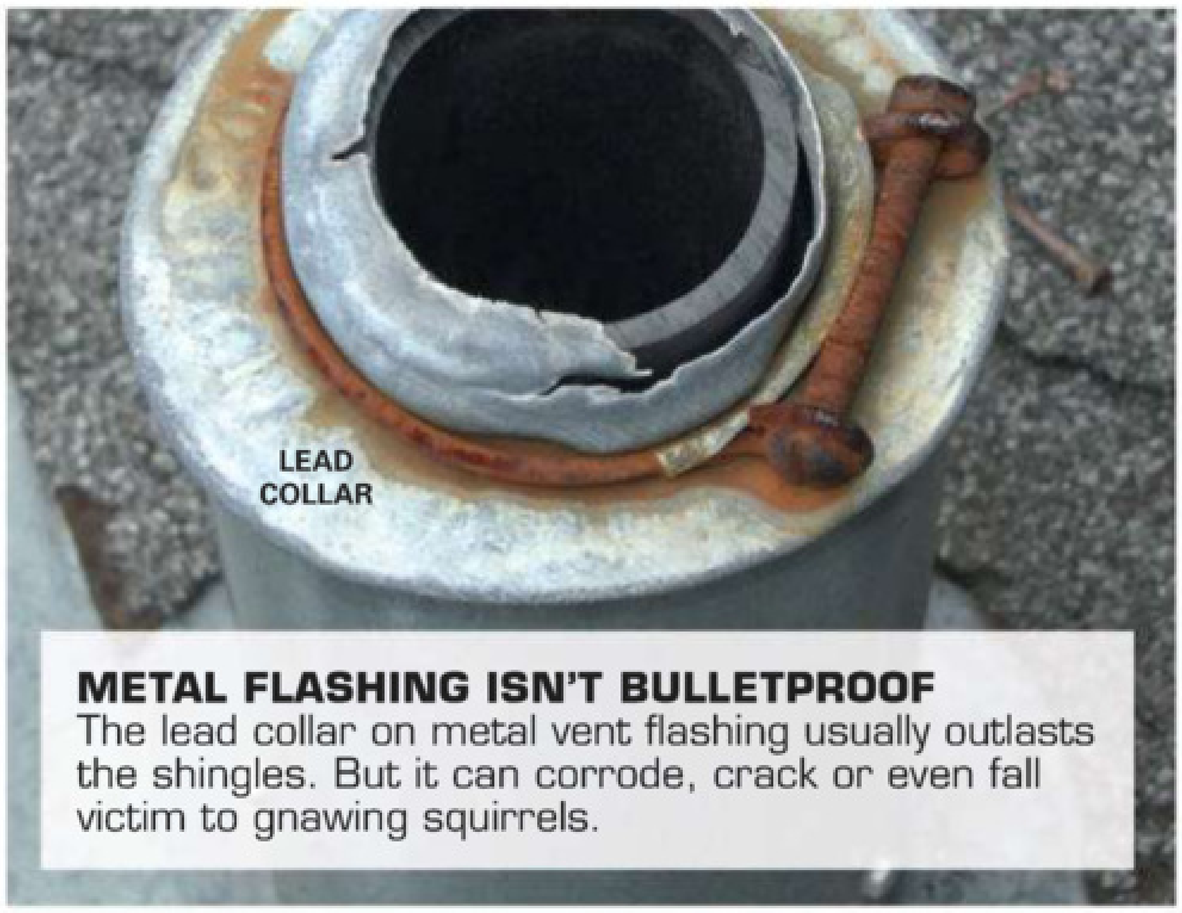
The best time to add gutter apron is when you're getting new shingles. But it is possible to slip gutter apron under existing shingles. A dab of roof cement every couple feet will "glue" it to the shingles and hold it in place. You'll have to remove gutter brackets or straps and then refasten them after the apron is in place. Gutter apron is available at home centers in 10 ft. lengths (about $5 each).

GUTTER APRON RETROFIT
Adding gutter apron under existing shingles is easiest on a warm day, when shingles are more flexible. If you need a new roof, make sure the contractor's bid includes gutter apron.

RUBBER BOOTS CAN CRACK
After years of sun and weather, the seal around this plumbing vent cracked and tore open.

VENT FLASHING FAILURE

Your plumbing system includes "vent" pipes that pass through the roof. And like any other roof penetration, that sometimes means trouble. There are two kinds of flashing used to seal vents: a "boot" that relies on a snug rubber seal, and all-metal flashing with soft lead that can be bent over and into the pipe. Some versions are made completely from lead; others are galvanized steel with a lead collar. When any type of vent flashing fails, the solution is to replace it. To see how, go to familyhandyman.com and search for "plumbing vent flashing."



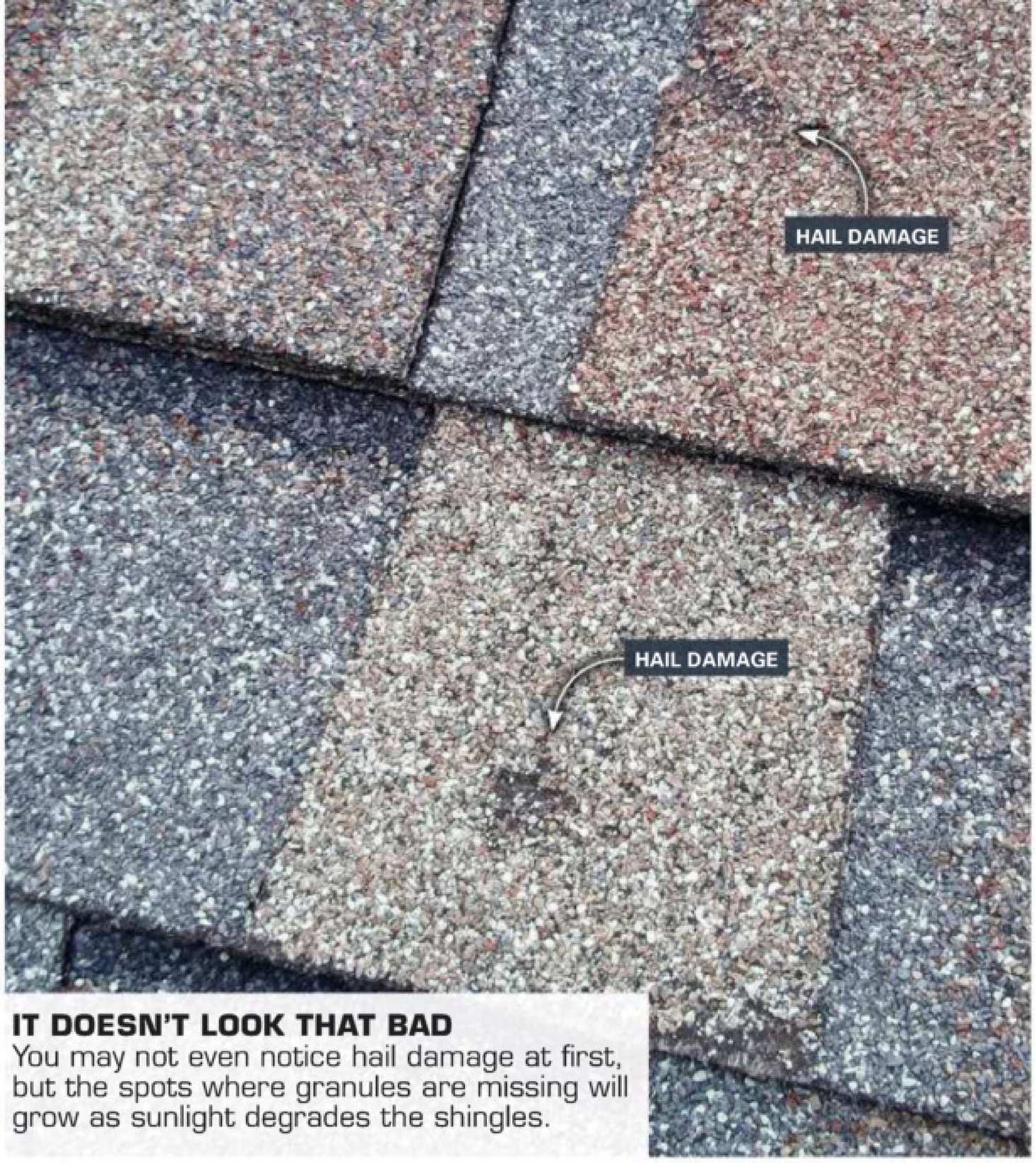
METAL FLASHING ISN'T BULLETPROOF
The lead collar on metal vent flashing usually outlasts the shingles. But it can corrode, crack or even fall victim to gnawing squirrels.

GOOF PROOF SHOWER®
Installation System
MADE IN AMERICA
StringA-Level™ Simultaneously Attach and Level a Continuous Stringer
GOOF PROOF SHOWER WALLS
Simultaneously attach and level a continuous stringer on which to stack heavy or large format tile vertically.
Curved Walls
Inside and Outside Cornering
Rigid and Flexible pieces available
Corner Shower Seat Fastest GOOF PROOF installation
GOOF PROOF SHOWER SEAT
- Easily Adjustable width 24" or 30"
- Six pre-drilled Mounting holes
- Level vials ensure correct pitch
- Waffle pattern assures optimal tile adhesion
- Full width tile support ledge
Designed for New and Retro fit/Existing Installations
Measure
Fasten
Tile
Mark E Industries, Inc. Toll Free: 1-866-771-9470 • www.goofproofshowers.com • info@markeindustries.com

HAIL DAMAGE

When a large hailstone hits an asphalt shingle, it can tear or even puncture the shingle. But usually, it just knocks granules off the surface. When a shingle loses its protective layer of granules, UV rays from the sun begin to destroy it. More granules fall off around the damaged spot and the bruise grows. The damage may not be obvious at first, so if you suspect hail damage, get an inspection from a roofing contractor. Most offer free hail damage inspections.

DAMAGED METAL IS A CLUE
Any hailstorm that was harsh enough to dent metal probably damaged the shingles, too. Look for dents in metal vents, siding, gutters and flashing.



IT DOESN'T LOOK THAT BAD
You may not even notice hail damage at first, but the spots where granules are missing will grow as sunlight degrades the shingles.

Garage Overhead Storage Racks

- Fits Any Garage
- Holds Up To 600 lbs
- Lifetime Warranty
- Do-It-Yourself Kits

SafeRacks® steel overhead garage storage

Handyman Special!
25% Off
Online Orders Only
Limited One Use Per Customer
Expires: 9/30/15 Code:HNDY0615MG

Visit www.SafeRacks.com
877-403-1606

SafeRacks is Installed by Licensed and Insured Contractors..Accept no Substitutes, Make Sure it's the Real Thing. U.S. Patents D553,401 / 7,357,262 / D697,785 / 7,152,535

BUYING tips

BY TRAVIS LARSON editors@thefamilyhandyman.com

Laminate floors

Laminate flooring is one of the great developments in home improvement of the past 50 years. It's inexpensive, durable and prefinished, but best of all, an intermediate DIYer can install it with just a few tools. Most of the various styles are installed by just snapping together the planks—no glue or fasteners required. In fact, the trickiest part is choosing the product! That's what we'll tell you about.

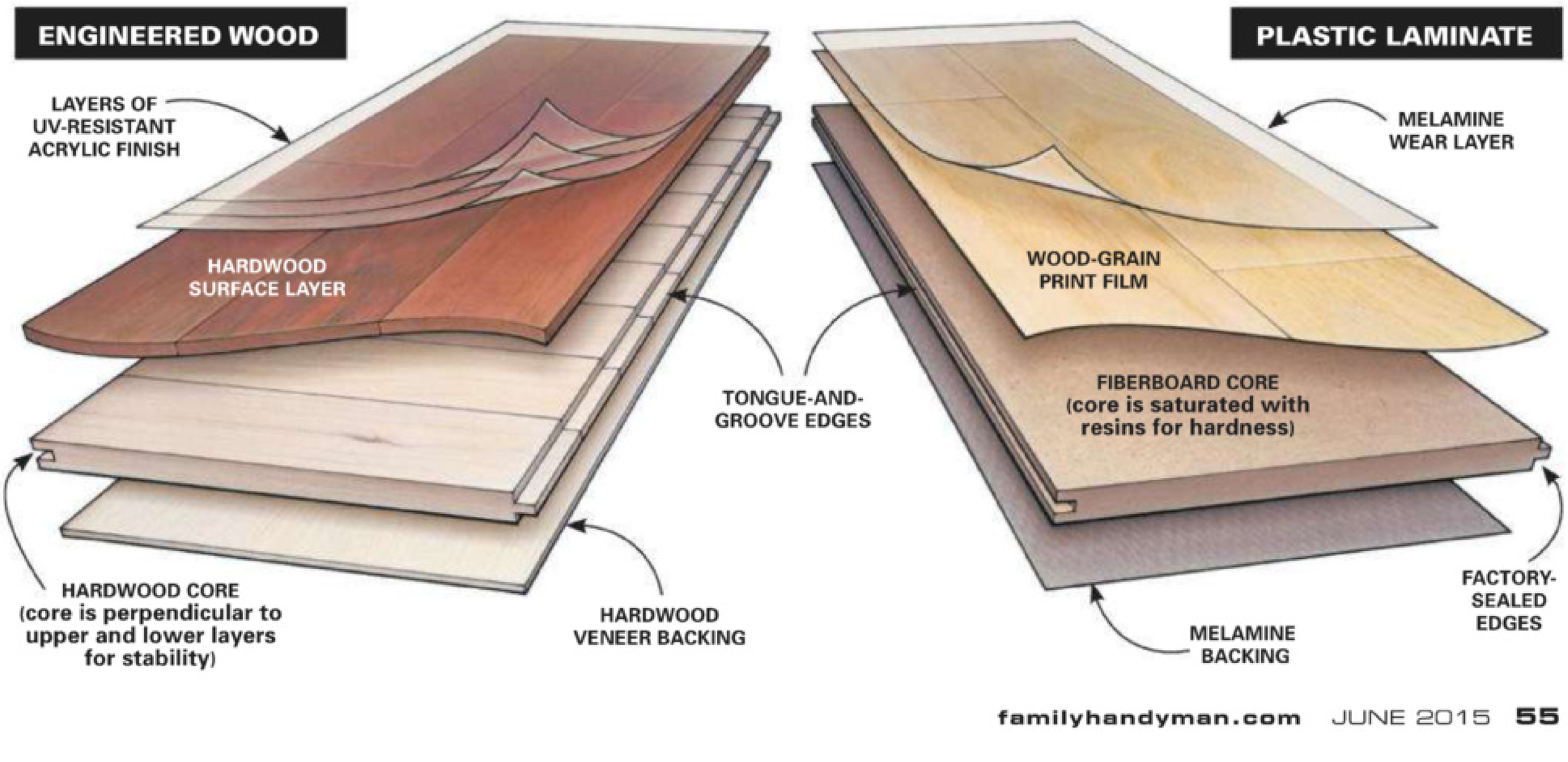
TWO STYLES: Engineered wood and plastic laminate

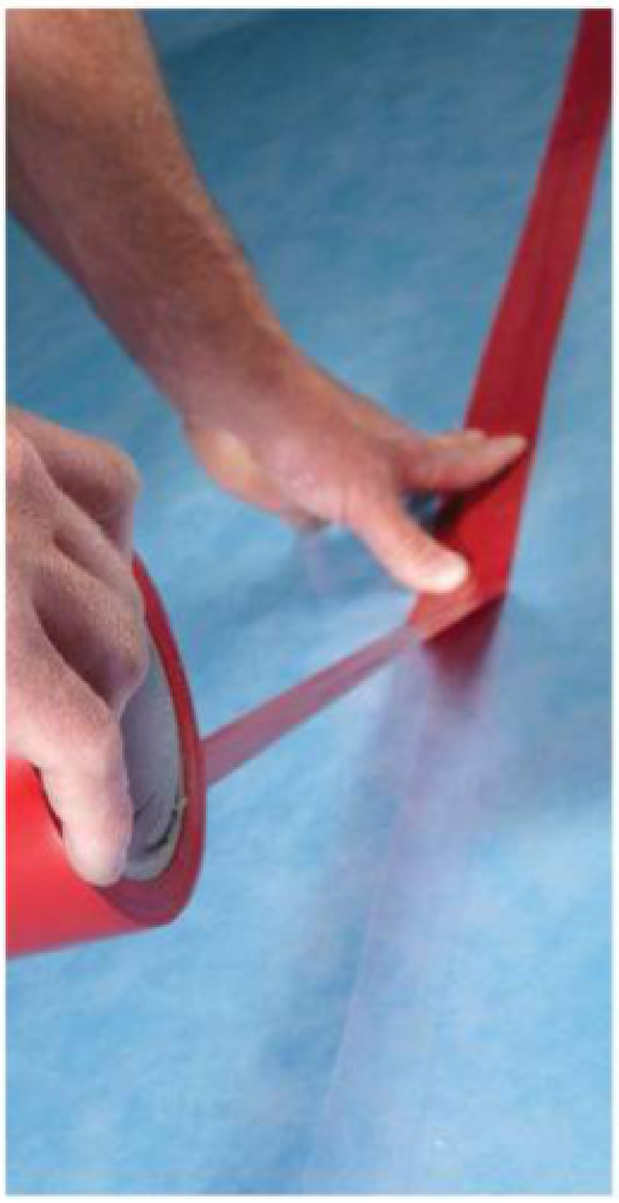
There are two types of laminate flooring. Both come in packages of snap-together planks about 1/4 in. thick. But here's the difference. Engineered wood is made from layers of real wood glued together with each layer perpendicular to the one below and above it for better stability. The top layer is a high-quality thin layer of hardwood coated with acrylic finish. Plastic laminate, on the other hand, is completely artificial, with a layer of melamine on the bottom, a resin-saturated fiberboard center, and a wood-grain print on the top that's protected by a layer of clear hard plastic.

Engineered wood is for purists who prefer the look of natural wood. But you pay for reality. On average, it's about double the cost of plastic laminate flooring. Its thin top layer of actual hardwood makes it more susceptible to dents, scratches and staining. But unlike plastic laminate flooring, it can be rejuvenated up to three times with careful sanding and refinishing. Because of that, you can expect it to last longer than plastic laminate—if you locate it away from water-prone and high-wear areas. If you're planning to sell your house in a few years, consider that buyers may appreciate and pay more for the look of real wood.

Plastic laminate is for those who want the look of wood flooring in a place that gets wet or seriously abused. The bullet-proof topcoat and plastic internal components make laminate floors extremely durable. They stand up to moisture, pet claws, in-line skates and sand-infested flip-flops much better than engineered wood floors. Manufacturers have come light-years in making the wood-grain print look very realistic. Most people can't even tell it's not real wood.

ART DIRECTION MARY SCHWENDER • PHOTOGRAPHY TOM FENENGA • ILLUSTRATION CHRISTOPHER MILLS





Don't forget the underlayment

All laminate flooring needs foam underlayment. Don't skip it. Underlayment prevents the floor from clicking on the subfloor as you walk across it and makes it feel a bit softer. It also makes the planks easier to install because it evens out small inconsistencies in the subfloor. Some underlayment has self-adhesive tape to join one row to the next. Others call for separate tape. Be careful to use whatever is required. Go ahead and buy the special laminate and wood flooring installation tool as well. You'll need it to pull together flooring ends where each row abuts a wall.

Don't forget LV flooring!

Laminate floors aren't the only option for durability and ease of installation. Next time you're at the home center, take a gander at luxury vinyl (LV) flooring. There's luxury vinyl tile (LVT), which looks like ceramic tile, and luxury vinyl plank (LVP), which mimics wood (shown here). Both types are extremely resilient, about the easiest flooring in the world to install and *completely* waterproof. Since luxury vinyl is so pliable, it's a great choice over uneven subfloors. Prices start at $2 per sq. ft.

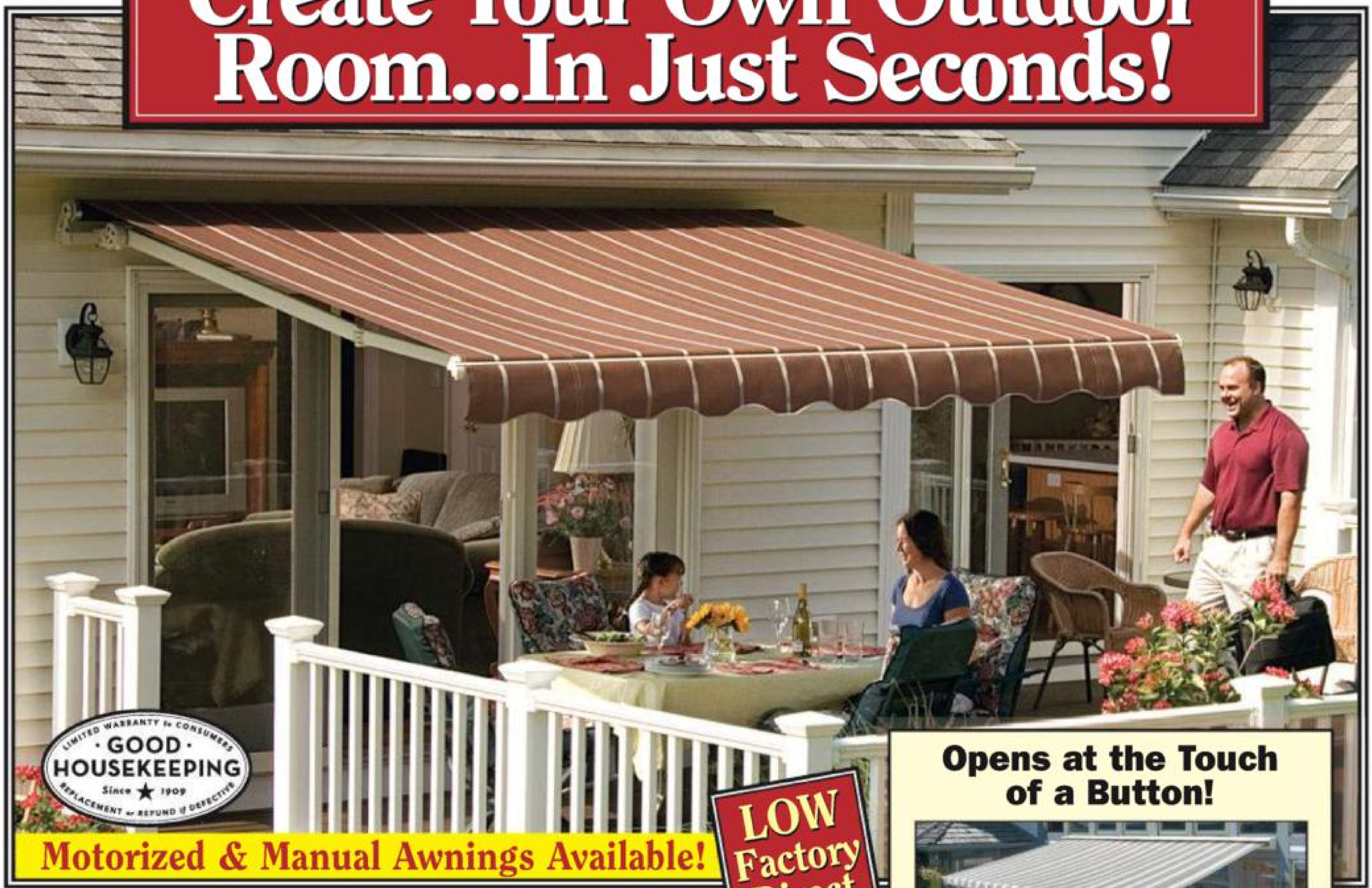
Choose a finish based on lifestyle, not just looks

If you lead a quiet life, choose whatever flooring style appeals to you. But if you have one of those crazy households with kids, pets and lots of visitors, be a bit more careful. Flooring with a varied grain pattern, a low-gloss finish or distressed or hand-scraped patina will look much better, much cleaner, much longer than flooring with a glossy, monolithic grain pattern.

Avoid wide planks unless the substrate is perfect

The directions will tell you the amount of slab or subfloor unevenness tolerated by the brand and type of flooring you buy. Over an uneven floor, wider planks will be harder to snap together, end joints won't stay flush with one another and there will be more gaps beneath the planks that you'll feel when you walk across the floor. So if your concrete or wood subfloor is quite uneven, you're better off selecting a narrower plank style, and being thorough when you apply the floor leveling compound (**photo left**).

Create Your Own Outdoor Room...In Just Seconds!



Motorized & Manual Awnings Available!

LOW Factory Direct Prices!

Introducing The Revolutionary SunSetter Retractable Awning!

If you're tired of having your outdoor enjoyment rained on...baked out...or just plain ruined by unpredictable weather...

At last there is a solution! One that lets you take control of the weather on your deck or patio, while saving on energy bills! It's the incredible SunSetter Retractable Awning! A simple...easy-to-use...& *affordable* way to outsmart the weather and start enjoying your deck or patio more...*rain or shine!*

The SunSetter is like adding a whole extra *outdoor room* to your home... giving you instant protection from glaring sun...or light showers! Plus it's incredibly easy to use...opening & closing effortlessly in *less than 60 seconds!*

So, stop struggling with the weather... & start enjoying your deck or patio more!

For a FREE Info Kit & DVD email your name & address to freedvd@sunsetter.com

Opens at the Touch of a Button!

Protects you from 99% of UV rays

You choose full sun or total protection in just seconds!

FREE! Info Kit & DVD

$200 Savings Certificate Included!

FREE Info Kit & DVD
Call Toll-Free: 1-800-876-8060 Ext. 30415

☑ **Yes!** Please send your FREE Info Kit & DVD...including a $200 Savings Certificate...TODAY!

Name_____

Address_____

City_____ State_____ Zip _____

Email _____

(Important: Be sure to give us your email address to receive our best deals!)

SunSetter® RETRACTABLE AWNINGS

184 Charles Street, Dept. 30415, Malden, MA 02148
Visit us today at www.sunsetter.com

©2015 SunSetter® Products

PRO tips

BY MARK PETERSEN editors@thefamilyhandyman.com

Miter saw tricks

ART DIRECTION ELLEN THOMSON • PHOTOGRAPHY TOM FENENGA

You already know how to use a miter saw, and maybe even some slick tricks, but you probably haven't been using this tool all day, every day for 30 years. So we talked to a guy who has. He showed us how to get the most out of a miter saw and shared great tips on how to cut small pieces, reduce tear-outs and, most important, how to do it all safely.

MEET THE EXPERT

Jerome Worm has worked as a trim carpenter for more than 30 years and has logged a few hundred thousand cuts on a miter saw. In addition to his experience and expertise, we love the fact that he still has all 10 fingers!

StoreMags.com

HARBOR FREIGHT

QUALITY TOOLS AT RIDICULOUSLY LOW PRICES

How Does Harbor Freight Sell GREAT QUALITY Tools at the LOWEST Prices?

We have invested millions of dollars in our own state-of-the-art quality test labs and millions more in our factories, so our tools will go toe-to-toe with the top professional brands. And we can sell them for a fraction of the price because we cut out the middle man and pass the savings on to you. It's just that simple! Come visit one of our 550 Stores Nationwide.

SUPER COUPON

20% OFF

ANY SINGLE ITEM

LIMIT 1 - Save 20% on any one item purchased at our stores or HarborFreight.com or by calling 800-423-2567. *Cannot be used with other discount, coupon, gift cards, Inside Track Club membership, extended service plans or on any of the following: compressors, generators, tool storage or carts, welders, floor jacks, Towable Ride-On Trencher, Saw Mill (Item 61712/62366/67138), Predator Gas Power Items, open box items, in-store event or parking lot sale items. Not valid on prior purchases after 30 days from original purchase date with original receipt. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

12101870

SUPER COUPON

FREE

WITH ANY PURCHASE

LOT 69080 shown
69030/69031/47737

PITTSBURGH

1" x 25 FT. TAPE MEASURE

$6.99 VALUE

LIMIT 1 - Cannot be used with other discount, coupon or prior purchase. Coupon good at our stores, HarborFreight.com or by calling 800-423-2567. Offer good while supplies last. Shipping & Handling charges may apply if not picked up in-store. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one FREE GIFT coupon per customer per day.

12089253

SUPER COUPON!

CENTRAL MACHINERY

4" x 36" BELT/ 6" DISC SANDER

SAVE $80

LOT 62502
97181 shown

$59.99 REG. PRICE $139.99

12065830

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

50" CLAMP AND CUT EDGE GUIDE

PITTSBURGH

LOT 66581

SAVE 40%

$14.99 REG. PRICE $24.99

12039775

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

WOW SUPER COUPON!

3 GALLON, 100 PSI OILLESS PANCAKE AIR COMPRESSOR

CENTRAL PNEUMATIC

SAVE 55%

LOT 61615
60637/95275 shown

$39.99 $59.99 REG. PRICE $89.99

12052232

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

1500 WATT DUAL TEMPERATURE HEAT GUN (572°/1112°)

drillmaster

SAVE 70%

LOT 96289 shown
62340/62546

$8.99 REG. PRICE $29.99

12055771

LIMIT 6 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

WOW SUPER COUPON!

12" x 33-3/8" WOOD LATHE WITH REVERSIBLE HEAD

CENTRAL MACHINERY

LOT 34706

SAVE $120

$229.99 $299.99 REG. PRICE $349.99

12090002

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

ALUMINUM OXIDE SANDING SPONGES PACK OF 10

SAVE NOW

YOUR CHOICE!

COARSE LOT 46751
MEDIUM LOT 46752
FINE LOT 46753

$4.49 REG. PRICE $4.99

Lifetime CARBIDE

12054912

LIMIT 7 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

12" SLIDING COMPOUND DOUBLE-BEVEL MITER SAW WITH LASER GUIDE

CHICAGO ELECTRIC POWER TOOLS

NEW

LOT 69684 shown
61776/61969/61970

SAVE $165

$134.99 REG. PRICE $299.99

12055512

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

WOW SUPER COUPON!

18 GAUGE 2-IN-1 NAILER/STAPLER

CENTRALPNEUMATIC

LOT 61661
68019 shown

SAVE 55%

$15.99 $22.99 REG. PRICE $35.99

WE CARRY A FULL LINE OF FASTENERS

1205143

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

RAPID PUMP® 3 TON LOW PROFILE HEAVY DUTY STEEL FLOOR JACK

PITTSBURGH

- Weighs 77 lbs.

LOT 68049/62326
61282/61253 shown

SAVE $90

$79.99 REG. PRICE $169.99

12053960

LIMIT 4 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

1/4" TRIM ROUTER

drillmaster

SAVE 42%

LOT 61626
44914 shown

$19.99 REG. PRICE $34.99

12056272

LIMIT 5 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

SUPER COUPON!

CENTRAL MACHINERY

10", 12 SPEED BENCH MOUNT DRILL PRESS

SAVE $100

LOT 60237 shown
44836/62408

$99.99 REG. PRICE $199.99

12066276

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

WOW SUPER COUPON!

26", 4 DRAWER TOOL CART

US★GENERAL

SAVE $180

★ WINNER ★ – Truckin' Magazine

- 580 lb. Capacity

LOT 95659 shown
61634/61952

$99.99 $159.99 REG. PRICE $279.99

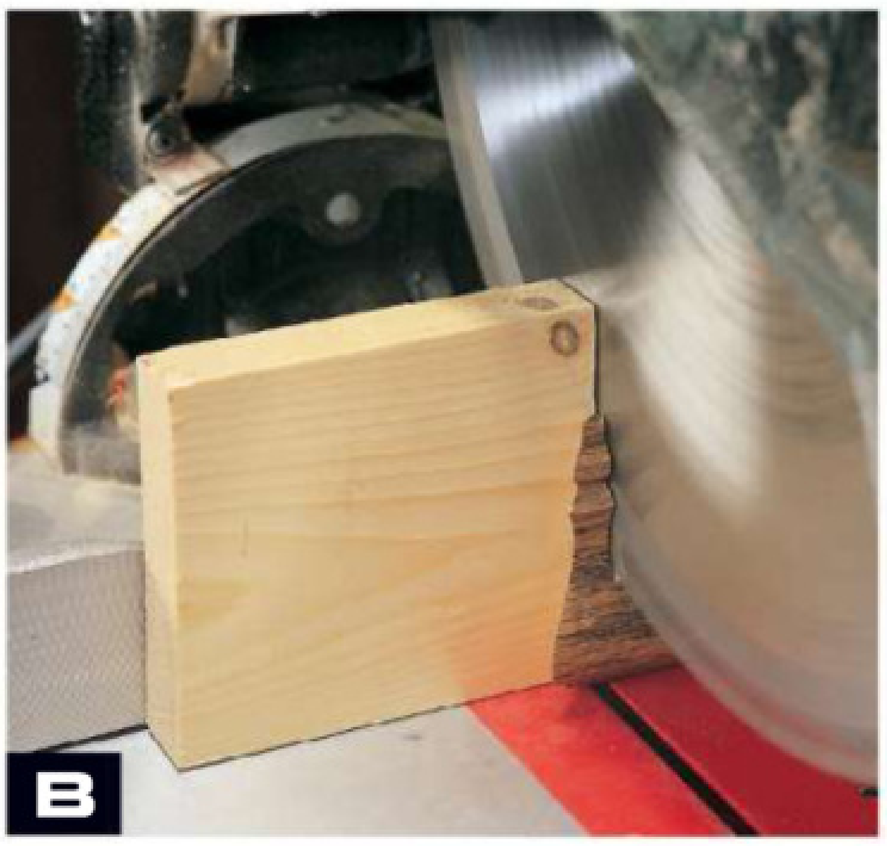
12087215

LIMIT 3 - Good at our stores or HarborFreight.com or by calling 800-423-2567. Cannot be used with other discount or coupon or prior purchases after 30 days from original purchase with original receipt. Offer good while supplies last. Non-transferable. Original coupon must be presented. Valid through 9/12/15. Limit one coupon per customer per day.

- 100% Satisfaction Guaranteed
- Over 25 Million Satisfied Customers
- No Hassle Return Policy
- Lifetime Warranty On All Hand Tools
- 550 Stores Nationwide
- HarborFreight.com 800-423-2567

Patience makes clean, safe cuts

Dropping the blade into the workpiece too fast is dangerous and will likely result in a rough cut or splintered wood. This is especially true when you're cutting thin, narrow pieces. Give the motor a few extra milliseconds to reach full speed, then lower the blade slowly as you cut.



Cut small parts with a sacrificial fence

To avoid launching small pieces across the room, use a sacrificial fence. Build a two-piece fence for tiny material like this cove molding (**Photo A**). Or just use a scrap board to back up small cutoffs (**Photo B**). Hold the saw down at the end of the cut and let the blade come to a complete stop.

Carry the saw by the base

Miter saws are heavy and awkward to carry. Some saws have handles near the top so you can lug them like a suitcase, but get into the habit of carrying them by the base instead. It's easier on your back and won't beat up the side of your leg. It's also easier to get through door openings without banging up the trim.

SEND THE DUST DOWN

Controlling dust created by a miter saw is notoriously difficult. The collection bags do little, and even if you hook up a vacuum, dust is still going to fly. Our expert replaced his bag with an ABS plumbing elbow that fit snugly onto the dust chute. It doesn't control all the dust, but it sends a good portion of it to the floor instead of all over. Dust chutes vary in size, so measure yours before heading to the hardware store. The only surefire way to completely avoid dust indoors is to do your cutting outside.

Mark a guideline on the base

Here's a fast way to cut a bunch of parts to the same length: Position the first one and then mark the location of the end on the saw base with a pencil. Now you have a guideline for the rest of your parts. This method may not be as accurate as a stop block, but sometimes perfection is unnecessary. The pencil mark easily rubs off when you're done.

WEAR HEARING PROTECTION

If you asked Jerome why he never wore hearing protection when he was younger, he would probably give you a blank stare unless he's wearing his hearing aids. Miter saws are loud and will damage your ears unless you protect them. Jerome would be the first to tell you that hearing loss is no joke!

Storey Books

SHAVE OFF JUST A LITTLE

Here's a tip when you need to shave off just a tiny bit: Lower the blade while it's not spinning, and push the material tight up against the body of the blade. Get a firm grip on the material and raise the blade. Next, fire up the saw and lower the blade again. Because the teeth of the blade are slightly wider than the body, you'll end up shaving off just a hair.

The **DR® STUMP GRINDER** uses carbide-tipped cutting teeth (taking 360 "bites" per second) to reduce any stump to a pile of woodchips. Grinds stumps below ground level so they are gone forever!

QUICKLY ELIMINATE ANY STUMP without digging, burning, or chemicals.

NEW, MORE POWERFUL and lower-priced models.

NOW TOWABLE with your riding mower or ATV.

DRstumpgrinder.com

87454X © 2015

STAINLESS STEEL CONSTRUCTION is lightweight, durable, and portable (it folds for easy storage).

PERFORATED LID and sidewalls maximize airflow and trap embers.

1600° TEMPERATURES mean more thorough burning with less ash.

No more **UNSAFE** and **UNSIGHTLY** rusty barrel!

BurnCage.com

87455X © 2015

FREE SHIPPING **0% | 36 mo. FINANCING**

NO FREE SHIPPING, FINANCING OR DVD FOR BURNCAGE

Call for a FREE DVD and Catalog!

Includes product specifications and factory-direct offers.

TOLL FREE **800-731-0414**

Storemags.com

SCREW DOWN GUIDES

Clamping down a temporary guide makes cutting crown molding a lot easier, but sometimes the clamps are difficult to install because of the irregular shape of most miter saw bases. Clamps can also get in the way when you're changing the angle of a cut.

Don't be afraid to screw down a guide right into the base of your saw. A small hole is not going to affect the way the saw performs. Self-tapping screws work great in bases made of aluminum: Just make sure you position the stop so it doesn't interfere when you're changing angles. Install a couple screws on each side if the guide will get cut in half, and save your guides so you can use the same screw holes next time.

SUMMER SALE: April 15 - July 31

Grizzly Industrial

PURVEYORS OF FINE MACHINERY®, SINCE 1983!

14" DELUXE BANDSAW

ANNIVERSARY EDITION

CAST IRON WHEELS

FREE SHIPPING! to lower 48 states

G0555LANV
ONLY $545.00

ULTIMATE 14" BANDSAW

Reviews & Awards

FREE SHIPPING! to lower 48 states

G0555P
ONLY $545.00

6" BENCHTOP JOINTER w/BUILT-IN DUST COLLECTION

FREE PAIR OF SAFETY PUSH BLOCKS

G0725 ~~$245.00~~
SALE $225.00

$49 shipping

6" JOINTER w/MOBILE BASE

Reviews & Awards

G0654 ~~$455.00~~
SALE $425.00

$79 shipping

12½" BENCHTOP PLANER w/DUST COLLECTION

New!

G0790
INTRODUCTORY
$285.00

$49 shipping

12½" PLANER

WITH DOUBLE-SIDED BLADES

G0505 ~~$315.00~~
SALE $295.00

$49 shipping

10" CONTRACTOR-STYLE TABLE SAW w/RIVING KNIFE

FREE 10" CARBIDE-TIPPED BLADE

G0732 ~~$795.00~~
SALE $650.00

$99 shipping

1-1/2 HP DUST COLLECTOR

MADE IN AN ISO 9001 FACTORY!

2.5 MICRON TOP BAG

G1028Z2 ~~$315.00~~
SALE $295.00

$79 shipping

PLEASE VISIT GRIZZLY.COM® FOR COMPLETE DETAILS & SPECIFICATIONS

1-800-523-4777
grizzly.com®

PRICING CODE 15FAMILY
MENTION THIS CODE WHEN PLACING YOUR ORDER
16970R2

FOLLOW US:

PayPal BillMeLater VISA MasterCard AMERICAN EXPRESS DISCOVER

TECHNICAL SERVICE: 570-546-9663 FAX: 800-438-5901

CAUTION:

DON'T DO THIS!

Never cross your arms

Sorry, lefties, but most miter saws are designed for right-handed users, meaning the saw is operated with the right hand and the material held down with the left. But sometimes the material will have to be held down on the right side of the blade. On those occasions, it's tempting to still use your right hand to operate the saw, but doing so will cause your left hand to cross in front of the path of the blade—that's bad. It will feel weird, but in this situation, use your left hand to operate the saw and your right to secure the material. Our expert knows carpenters who have ignored this advice and have the scars on their arms to prove it.

CUT WIDE BOARDS WITH THE BEST SIDE DOWN

Splinters and tear-outs occur where the blade breaks through the wood. That's the bottom side when plunge-cutting narrow boards, so it's best to cut narrow boards with the "show" side face up. But when you're cutting wider material on a sliding saw, you'll pull the blade toward you, lower the blade and then push it forward as you cut. In that process, splintering will occur on the top of the board, so cut with the board face down.

BY RICK MUSCOPLAT editors@thefamilyhandyman.com

Air-condition your garage

ART DIRECTION **MARCIA ROEPKE** • PHOTOGRAPHY **TOM FENENGA**

Wrenching on a car or doing a project in a sweltering garage is no fun. The heat and humidity slow you down, make you grumpy and increase your frustration. Air-conditioning your garage solves those problems and doesn't cost a fortune. You can buy a TTW (through-the-wall) unit for about $700. Window units cost a bit less, so consider going that route if you have a suitable window. Window and TTW units are the same except for installation. A window unit comes with hardware and sealing gear for mounting it in a window, while a TTW unit requires a separate sleeve that fits into a wall opening that you frame into the wall.

If you start the installation in the morning, you'll be enjoying cold air by mid-afternoon. A ceiling fan helps circulate the air and eliminate hot spots, but if the A/C unit keeps you cool enough, you can skip the fan. We'll show you how to pick the right size unit for your garage and how to install it in the wall.

Consider insulating first

If you plan to use your garage A/C only occasionally, you don't have to install insulation. It'll just take longer to lower the temperature to a comfortable level and the A/C compressor will run for longer periods, costing you more in electric bills. However, you can dramatically speed up the cool-down time and increase cooling effectiveness by hanging drywall on the ceiling. That reduces the size of the area to be cooled and helps the cool air circulate. Install a vapor barrier first, in case you decide to add attic insulation later on. But if you plan to frequently use the garage A/C, it's well worth insulating and finishing the entire space.

Then size the A/C unit

Measure the area of your garage (length times width) to determine the total square footage, then consult the chart on p. 68. Apply the adjusting factors at the bottom of the chart. Then shop around for the best price on the A/C unit and a matching through-the-wall sleeve (an additional $100 to the cost of a window unit).

Pick a location and cut the opening

A/C units have weak circulating fans, so don't locate one on the end wall of a large, rectangular garage. Instead, locate it in the middle of the longest wall and aim the airflow toward the garage door. If you're installing a window unit and it's located on the end wall of a rectangular garage, plan to install circulating fans to help move the cold air to the other end.

Next, check the sleeve installation instructions for the rough opening size. Some manufacturers want a 1-in. clearance on the sides and top of the sleeve. Plus, the distance from the ceiling is critical. Don't place the opening directly below the top wall plate.

1 CUT THE STUD
Cut through the center stud, leaving a space 3 in. taller than the rough opening height of the A/C sleeve to allow room for the top and bottom plates. Knock the cut piece sideways to break it loose from the sheathing and siding nails.

2 FRAME THE SLEEVE OPENING
Nail top and bottom plates to the center and adjacent studs. Then add a short jack stud to frame the opening to the proper width.

3 CUT THROUGH SHEATHING
Test-fit the sleeve before cutting out the sheathing with a reciprocating saw.

Other A/C options for your garage

We didn't cover portable A/C units in this story. They're an option but not a very good one. Portable units use cold air from the room to cool the condensing coil and then exhaust that air to the outdoors. The negative pressure this creates inside the garage draws in an equal amount of hot humid "make-up" air from outside. The portable unit then has to cool that make-up air and the cycle repeats over and over, wasting 30 to 50 percent of the rated capacity of the unit. Overall, portable units don't come close to the efficiency of a window unit or a TTW unit.

If you want the very best cooling option and are willing to dig deep (expect to pay about $4,000), contact an HVAC company and get quotes on a split system. Those are heavy-duty units that can quickly cool your garage and maintain the temperature even under the hottest conditions.

Now you can tackle any home project with confidence!

Introducing The Family Handyman DIY University, an on-demand source of online DIY How-To classes.

Each course includes material & tool lists along with step by step video to get you from start to finish.

Starting April 1st, check out the "Master the Art of Trim" class at:

familyhandyman.com/DIYSchool

AT YOUR FINGER TIPS
YOU CAN LEARN FROM
INDUSTRY PROS

THE FAMILY Handyman #1 in DIY Home Improvement

DIYUN01

J-B WELD®
World's Strongest Bond™
Wood epoxy is the best solution for permanent repairs of rotted or broken wood.
Come visit our new website at www.jbweld.com and see all the fantastic adhesive solutions offered by *the brand you trust.*
Proudly
Made in the USA
www.jbweld.com

That'll result in rapid compressor cycling and inefficient cooling. Locate the top of the sleeve opening about 24 in. down from the ceiling (or as shown in the sleeve installation instructions). Then remove drywall (if any) in that location to expose the studs. Cut the center stud to allow for the thickness of the new top and sill plates. The biggest task is reworking the siding. In most cases it's best to remove as much siding as needed before cutting the opening in the sheathing and then to trim and re-side around the opening. Follow the manufacturer's instructions to mount and secure the sleeve to the framing.

Run electrical cable to the location and install the receptacle. Most 120-volt units require a dedicated receptacle on either a 15- or 20-amp circuit breaker (no extension cords allowed). A unit sized from 9,000 to 12,000 Btu will typically run on a 20-amp, 120-volt circuit. But you'll have to install a 220-volt circuit for larger units.

Add circulation fans

A through-the-wall A/C unit will dump most of its cool air right into the center of the garage, creating hot spots around the sides. To get more uniform cooling, add a ceiling fan to suck hot air from the ceiling corners and blow it down to the floor. Use a floor fan on the opposite side to blow the newly warmed floor air up toward the A/C unit intake.

4 INSTALL THE SLEEVE
Secure the sleeve brackets (if equipped), install filler strips and secure the sleeve.

A/C sizing for an insulated garage

Typical garage size	Square feet	Btus for TTW or window unit
2-car (18' x 20')	360	9,000
2.5-car (22' x 22')	484	12,000
3-car (20' x 32')	640	14,000

Adjusting factors:
- Buy the next larger size if your garage isn't insulated.
- Add 10 percent if the garage is exposed to direct sunlight.

FIX A SCRATCHED DVD

Just sliding a DVD across a table is enough to scratch it. You can usually remove light scratches by swirling cream plastic polish around the disc with a microfiber cloth. However, if the disc still doesn't play and you own a drill press, you've got one more chance to save it. Pick up a buffing wheel and bar compound (one example is the Assorted Polishing and Buffing Kit, No. 67259; $8 at Harbor Freight).

Chuck up the buffing wheel and set the drill press to its highest speed. Start the drill press and rub the least abrasive compound onto the wheel. Then lightly buff the disc as shown. Wash the disc with dishwashing detergent and dry it. Then test the disc. If it works, you're all set for movie night. If not, you gave it your best shot.

BUFF THE SCRATCHES
Press the disc against the buffing wheel and rotate it in a circle, not toward or away from the center.

The Ultimate Offroad Trailer!

The DR® VERSA-TRAILER™ is the ONLY trailer for offroad vehicles that—

HAS A SWINGING BOOM for loading and unloading rocks, logs, balled trees, etc. with a back-saving winch.

EMPTIES CLEANLY every time, thanks to steep, boom-assisted dump angle.

CONVERTS TO A STAKE BED trailer (in less than 5 minutes!) for harvesting trees and hauling long loads.

- LIFTS up to 440 lbs.
- DUMPS up to 650 lbs.
- HAULS up to 2000 lbs.

1-Ton Model Shown—
1/2-Ton Model also available.

GALVANIZED BED AND FRAME tows easily behind ATVs, compact tractors and lawn tractors.

PIVOTING, TANDEM WHEELS "walk" over obstacles—haul loads anywhere you can drive

87452X © 2015

FREE SHIPPING
0% 36 MO. FINANCING
SOME LIMITATIONS APPLY
Call or go online for details.

Call for FREE DVD and Catalog!
TOLL FREE **800-731-0414**
DRhaulers.com

PROFESSIONAL POWER DR DONE RIGHT

BY RICK MUSCOPLAT editors@thefamilyhandyman.com

ART DIRECTION **VERN JOHNSON** • PHOTOGRAPHY **TOM FENENGA** • ATV CONSULTANT **JOSH FISCHER, UNLIMITED MOTORSPORTS**

Buy a used ATV worry-free

Buying a used ATV can save you thousands over the price of a new model. But a low price is a good price only if the entire rig checks out. Skip the inspection and you could be in for some pricey repair bills before logging your first 100 miles.

We asked our expert, Josh Fischer, owner of Unlimited Motorsports, New Prague, MN, to walk us through all the pre-purchase inspection steps he performs for his customers. Josh charges $110 to do the full inspection in his shop.

It sure helps to get the unit up on a lift, but you can do most of the checks yourself in the seller's driveway. Take along a flashlight, rags, socket set, Torx and hex bits, mirror, and screwdrivers to remove covers and splash guards. Here's how to conduct the inspection.

StoreMags.com

WeatherTech®

Automotive Accessories

TechLiner®
Pickup Bed Protection

Laser Measured
FloorLiner™
Available for over 900 Applications
in Black, Tan and Grey

COMPLETE COVERAGE FOR YOUR VEHICLE

See our full line of Automotive Accessories at WeatherTech.com

All-Weather Floor Mat

In-Channel
Side Window Deflectors

No-Drill MudFlaps

CargoTech®
Cargo Containment System

Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti
Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan
Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: 800-441-6287

American Customers
WeatherTech.com

Canadian Customers
WeatherTech.ca

European Customers
WeatherTechEurope.com

© 2015 by MacNeil IP LLC

THE WORLD'S TOUGHEST WIPES

BIGGER AND STRONGER

Soaked in our proprietary 9-cleaning-agent formula, these extra large 10" x 12" wipes are built to withstand vigorous scrubbing and your toughest messes.

TOUGHER

Knocks out dried paint, grease, tar, ink, food and drink spills, scuff marks, dirt, and other tough messes.

Look for Tub O' Towels® at leading retailers, including:

O'Reilly. AutoZone. Advance Auto Parts. Pep Boys. MENARDS. Walmart. Save money. Live better. LOWE'S. ACE. Do it Best. True Value.

tubotowels.com

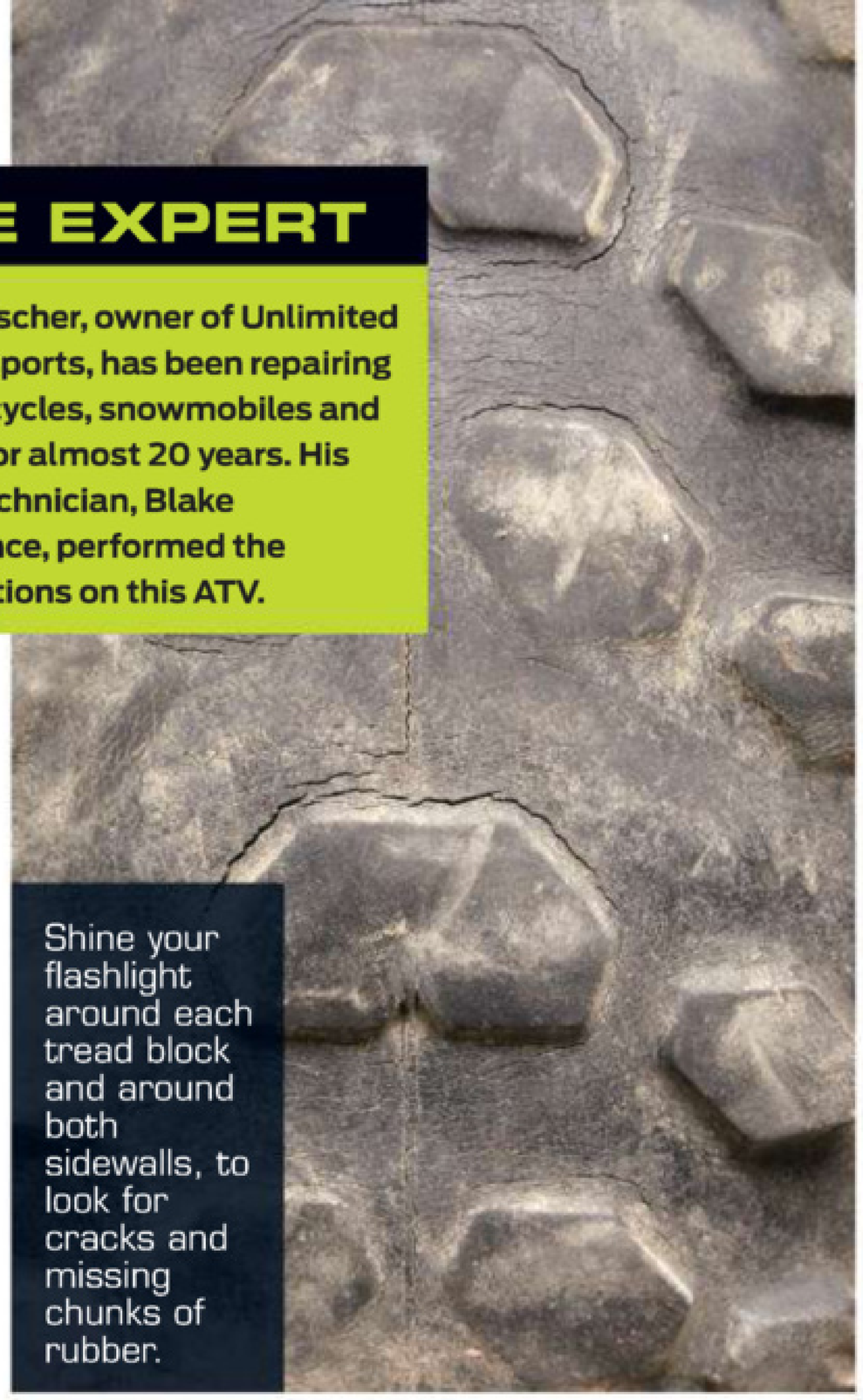
©2015 Federal Process Corporation. All rights reserved.

MEET THE EXPERT

Josh Fischer, owner of Unlimited Motorsports, has been repairing motorcycles, snowmobiles and ATVs for almost 20 years. His lead technician, Blake Lawrence, performed the inspections on this ATV.

Start with the tires

ATV tires age and crack just like car tires. Once they develop cracks, they're dangerous to ride on. If one tire is cracked and has the same wear as the others, plan on replacing the complete set. That can easily cost upward of $480 with mounting labor.



Shine your flashlight around each tread block and around both sidewalls, to look for cracks and missing chunks of rubber.

Jack up one side and grab the tire at the 12:00 and 5:00 positions. Then rock the tire in and out. If you feel any play, you're looking at a bad wheel bearing, a bad ball joint or both.

Check the bearings and ball joints

Severely worn ATV bearings and ball joints can separate in use, causing serious personal injury. Before they let go, you'll notice sloppy steering and instability in turns. If one side is worn, chances are the other side is right behind. Ball joints cost $140 per side (installed), and wheel bearings run about the same.

Inspect the shocks

Worn shocks don't dampen spring oscillations, so your tires spend more time in the air after each bounce. That dramatically reduces the machine's stability. Leakage is a sure sign of wear. Shocks cost $150 each installed.

Look for moist areas around the top of the shock. If you see wet spots, run your finger over the area. If it's oily, the shock is on its way out.

Check the constant velocity (CV) boots

CV boots keep the grease inside the rotating joint. When a boot wears, it tears open between the pleats or at the band clamps. Then it flings the grease out of the joint and lets in water and sand that can destroy the joint. New boots cost $150 each installed. If you find sand or dirt in the joint, it's most likely damaged and must be replaced. New CV joints cost $250 each installed.

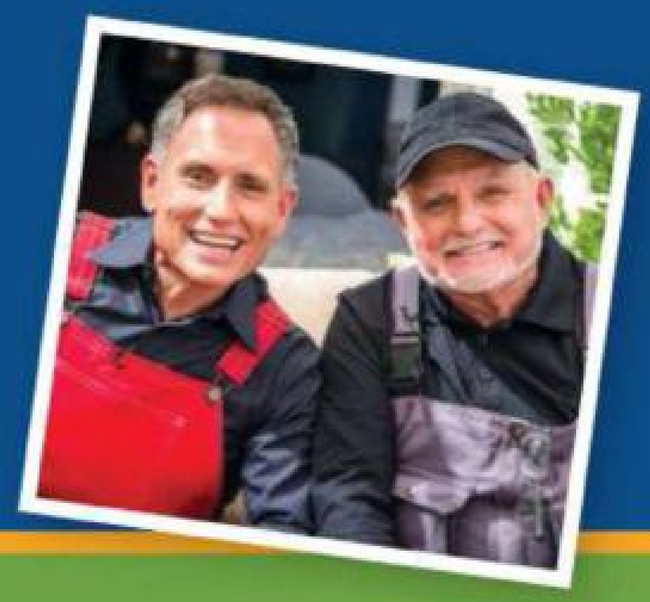
Check out all eight joints. Remove the splash guards (if equipped) and look for signs of grease on the inner and outer CV boot on each axle. Next, separate the pleats and check for small cracks or tears. Check the surrounding area for signs of grease that may have leaked from the clamps.

StoreMags

On the House

With the Carey Brothers

Tips of the Month



As veteran remodeling contractors, we are constantly in search of products that offer our clients the best ROI. For our money (and theirs, too), a product must look good, have longevity and other features and benefits that set it apart in its category. During our recent annual visit to the IBS/KBIS show in Las Vegas, we discovered a couple of products that fit the bill quite nicely.

INCREASE FIRE RESISTANCE & DECREASE STRESS

ROXUL Safe'n'Sound stone wool insulation improves your home's fire resistance and reduces unwanted noise – all in one product! The product is made of a combination of natural basalt rock and recycled slag – a mineral by-product of the steel-making process. The product is lightweight, compact and can be 'friction fit' into walls, ceiling and floors. It's ideal for bathrooms, bedrooms, nurseries, home offices, etc. Thinking of building or remodeling and don't share your teenager's taste in music? Consider ROXUL Safe'n'Sound. ROXUL Safe'n'Sound has excellent fire ratings and can add valuable time for evacuation in the event that a fire occurs. Learn more at **diywithROXUL.com**.

KEEP YOUR TOOTSIES WARM & YOUR UTILITY BILL LOW

Ceramic and porcelain tile have become increasingly popular floor finishes due to their beauty, water resistance, and durability. Since tile can feel cold underfoot, electric floor warming systems have gained popularity. However, the frequent temperature fluctuations caused by floor warming systems can lead to more expansion and contraction of materials, causing gaps and cracks. DITRA-HEAT by Schluter® Systems is an electric floor warming system that directly incorporates uncoupling technology into a floor warming system providing heated floors that are crack resistant. The uncoupling system consists of a single layer membrane between the subfloor and tile that allows the floor to expand and contract without damage. The DITRA-HEAT system can be customized on-site to meet virtually any design challenge. The heating cables are snapped into place on top of the uncoupling mat without clips or fasteners. A digital thermostat controls the floor temperature and is offered in programmable and non-programmable formats. Why crank up the whole-house furnace when you simply want toasty tootsies in the bathroom? For more information visit **schluter.com**.

Ask the Carey Brothers a home improvement or remodeling question on their live radio broadcast every Saturday from 9:00 a.m. to 1:00 p.m. Eastern Time.

Call toll-free at **1-800-737-2474** to ask your question.

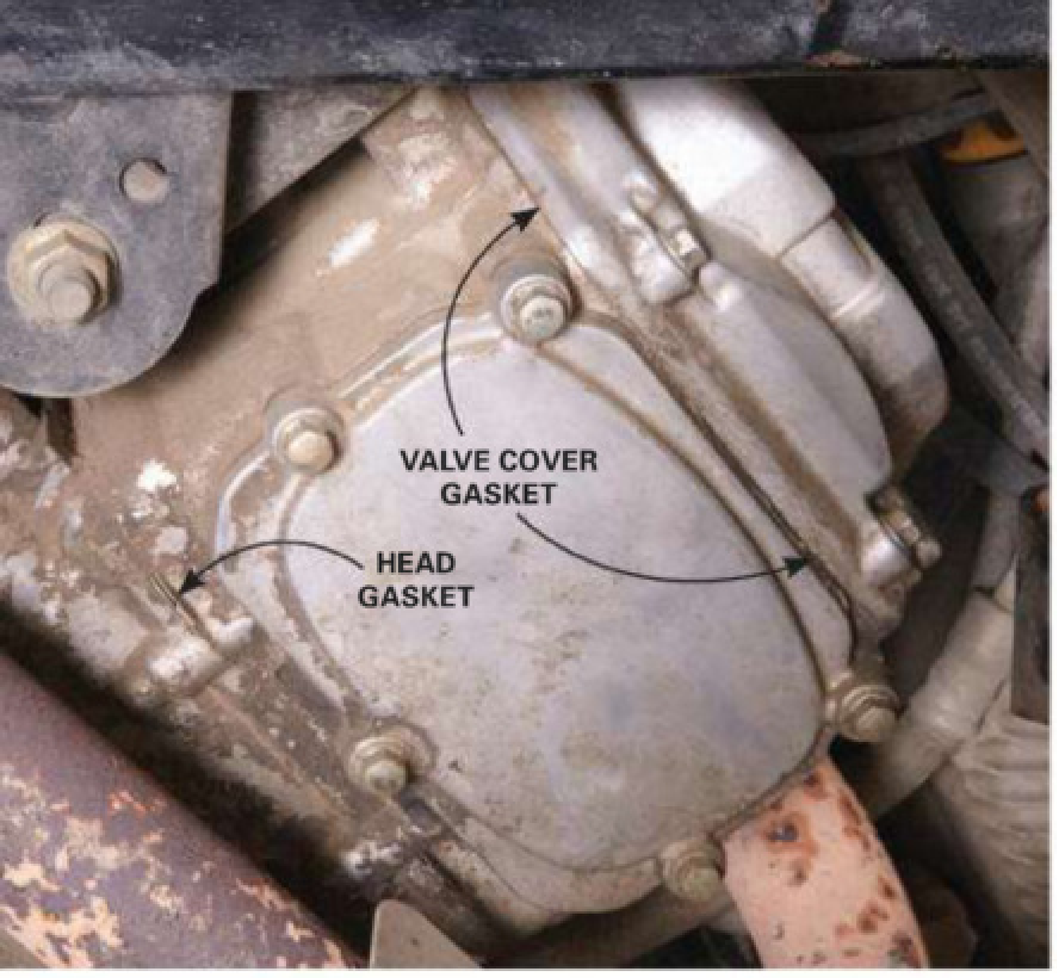
Visit their website at **OnTheHouse.com** for recaps of the show & other helpful info.

DOWNLOAD OUR APP

LIKE US ON

FOLLOW US ON

CHECK OUT OUR VIDEOS ON YouTube



Check for engine leaks

Oil leaks from the valve cover and head gaskets can cost plenty ($150 and $300). So check those areas before you buy. Wipe a clean rag around the head and valve cover gaskets. If the rag shows fresh oil, the gaskets need replacing.

Pull the air cleaner cover

Replacing an air filter doesn't cost much. So if you remove the cover and see large accumulations of dirt, take it as a sign of poor maintenance. Also, if there are signs of mice or other rodents taking up residence, walk away from the purchase.

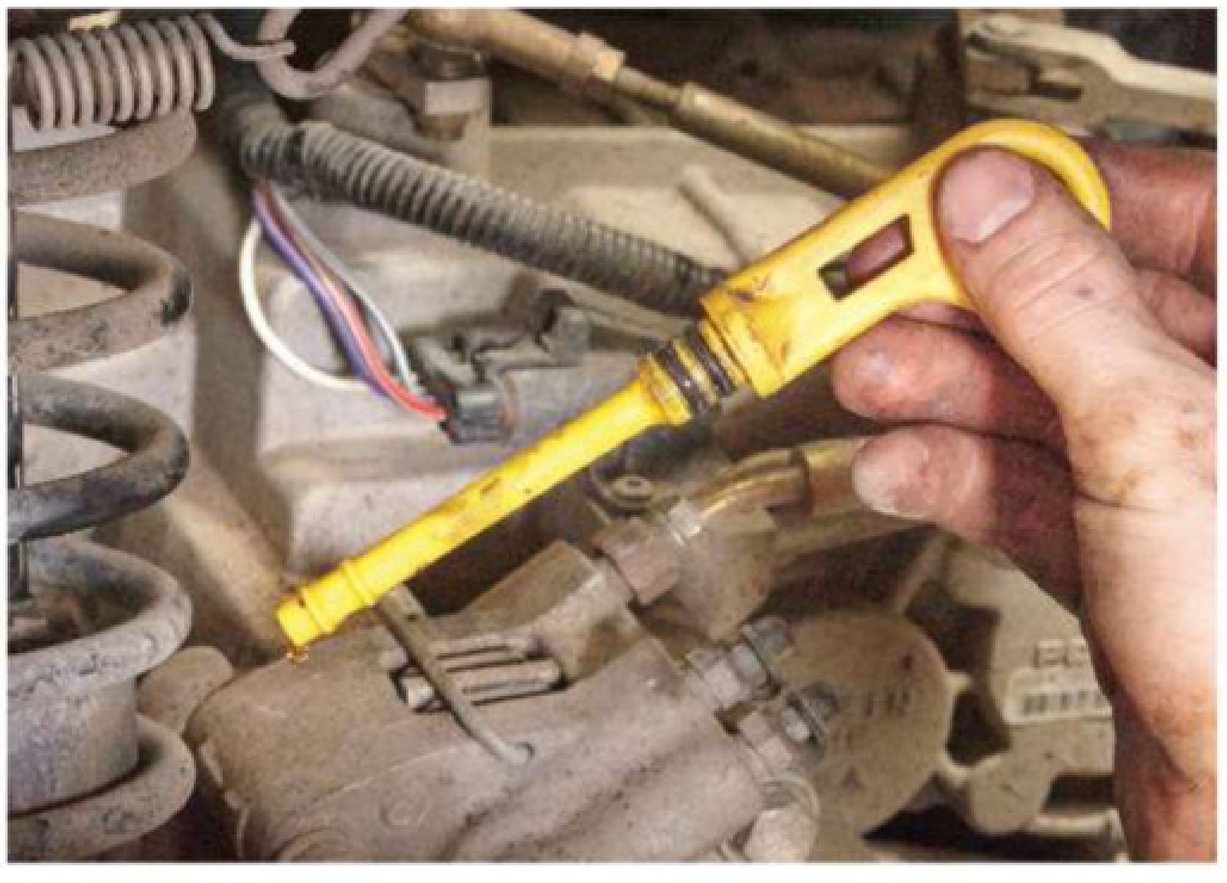
Check the pad condition and thickness. Inspect the rotor for deep gouges. And look for caliper leaks.

Check the brakes

You can check the thickness of ATV brake pads with an inspection mirror and a flashlight, but ATV brake pads are so thin when new that it's sometimes hard to see when they're worn. We disassembled the brakes on this machine so you could see what we're talking about. The new brake pad on the right is about 1/4 in. thick. The used pad below it still has more than the minimum 1/16 in. However, since ATV rotors are so expensive (almost $120 each), it's never good to let them wear down that far and risk metal-to-metal contact.

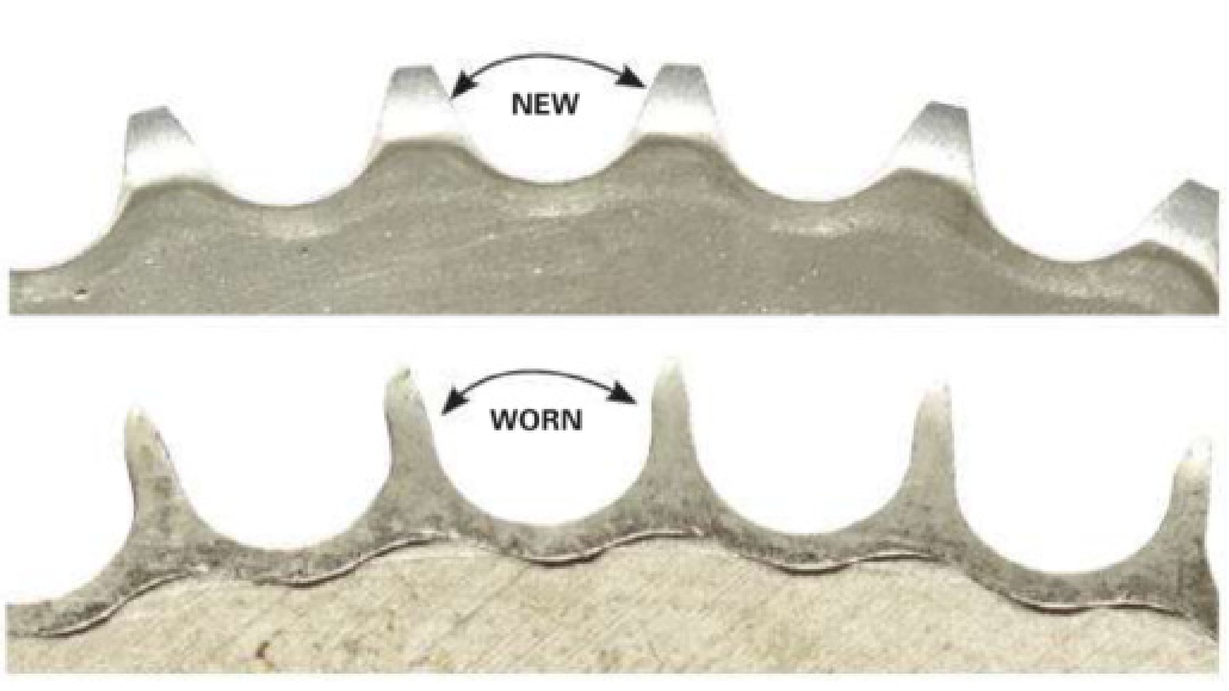
Even if the pads look thick enough, the friction material may be cracked or delaminating from the backing plate. So it's best to jack up each side and remove the wheel, caliper and pads to inspect the entire brake system.

A complete brake job costs about $175.



Check the fluids

Pull the engine and transmission dipsticks and check for the proper level and appearance. Look for metallic particles in the oil. If you see any, don't buy the machine.



Chain and sprocket

If the ATV uses a chain, check for sprocket wear (see "Car + Garage," April '15). Replace the chain and sprocket as a set (about $300 parts and labor).

storemagic.com

If You Were Exposed to, or Harmed by, ASBESTOS or ASBESTOS-CONTAINING Products Made, Distributed or Sold by THE FLINTKOTE COMPANY or FLINTKOTE MINES LIMITED,

Please read this Notice of Voting Rights and Hearing to consider whether to approve Reorganization.

TYPES OF PRODUCTS

During the 1930s to the 1980s, products sold by The Flintkote Company and Flintkote Mines Limited (the "Debtors") may have contained asbestos. These products could have included floor tile, roofing shingles, joint compound, cement pipe, asphalt and other products.

Persons or entities exposed to, or harmed by, the Debtors' asbestos or asbestos-containing products may have personal injury, wrongful death or other claims against the Debtors. You do not need to (i) have been diagnosed, (ii) have symptoms, or (iii) be impaired to be affected by the Plan.

If you believe you may have been exposed to, or harmed by the Debtors' products, you may be entitled to vote on the terms of the Reorganization. You should carefully read this notice and the important documents located at http://www.flintkotebankruptcy.com.

PLAN OF REORGANIZATION

The Debtors have filed for bankruptcy. On February 9, 2015, the Debtors filed a modified Joint Plan of Reorganization (the "Plan") with the United States Bankruptcy Court for the District of Delaware (the "Bankruptcy Court"). The Plan includes the terms of a settlement reached between the Debtors and their former indirect parent company, Imperial Tobacco Canada Limited ("ITCAN"). The Plan has been jointly proposed by the Debtors, the Asbestos Claimants Committee and the Future Claimants Representative (collectively, the "Plan Proponents"). As background, the Plan is a modified version of a bankruptcy plan on which Debtors previously solicited votes in 2008 and 2009, and which was confirmed by the Bankruptcy Court on December 21, 2012 (the "Original Plan").

A document describing the Plan's changes (the "Disclosure Supplement"), which the Bankruptcy Court approved on March 17, 2015, and a copy of the Plan itself and voting materials (a "Resolicitation Package"), has been mailed to known holders of claims against the Debtors or their lawyers.

THE TRUST

The Plan provides for a trust to be established to pay eligible asbestos personal injury claims against the Debtors (the "Trust"). The Plan states that all current and future holders of asbestos personal injury claims will be forever prohibited from asserting claims directly against the Debtors and other parties protected under the Plan, including ITCAN. Such persons can receive money only from the Trust. The Plan and the Disclosure Supplement have important additional details and are available at http://www.flintkotebankruptcy.com.

SUPPLEMENTAL SETTLEMENT BAR ORDER

Under the Plan, ITCAN will also obtain protection from certain claims by a settlement bar order, which is described more particularly in the Plan and Disclosure Supplement.

VOTING PROCEDURES

The Bankruptcy Court has issued an order describing who can vote on the Plan, how to vote, and how votes will be counted. The Disclosure Supplement has information that will help you decide whether and how to vote on the Plan if you are entitled to do so. Votes cast on the Original Plan will be counted as votes on the Plan, unless a holder changes such vote. **If you voted on the Original Plan and do not wish to change your vote, you do not need to submit a ballot.** If you did not vote on the Original Plan, you may obtain and cast a ballot, which would be subject to the Plan Proponents' right to object. **To be counted, a completed ballot must be received by the Voting Agent at the address below by 4:00 p.m. (prevailing Eastern time) on June 2, 2015. Any ballot received after that deadline will not be counted.**

Proof of an asbestos personal injury or wrongful death claim does not need to be filed with the Bankruptcy Court. Special procedures have been established for holders of asbestos personal injury and wrongful death claims to vote on the Plan. Lawyers for holders of these claims may vote on the Plan on behalf of their clients if authorized by their client. If you are unsure whether your lawyer is authorized to vote on your behalf, please contact your lawyer.

THE HEARING TO CONFIRM THE PLAN

A hearing to confirm the Plan will be held before the Honorable Mary F. Walrath, United States Bankruptcy Judge, at the United States Bankruptcy Court for the District of Delaware, 824 Market Street, 5th Floor, Wilmington, Delaware 19801, commencing **on August 10, 2015 at 10:30 a.m.** (prevailing Eastern time). You may attend the hearing but are not required to do so.

OBJECTING TO THE PLAN

Objections to the Plan are limited to changes between the Original Plan and the Plan and must be submitted in writing and received by July 8, 2015 to be considered. All objections must comply with the requirements in the notice of the Confirmation Hearing, available at http://www.flintkotebankruptcy.com.

HOW TO OBTAIN DOCUMENTS

If you would like additional information about the Plan, Disclosure Supplement and the Trust (including copies of the Plan and the Disclosure Supplement), you may contact the Debtors' Voting Agent at (800) 290-0537 or visit http://www.flintkotebankruptcy.com.

For complete information, including all relevant forms, notices and instructions, please consult:

Flintkote Reorganization Website
www.flintkotebankruptcy.com

Flintkote Reorganization Helpline
1-800-290-0537

Write to: The Flintkote Company and Flintkote Mines, Limited, c/o GCG, P.O. Box 10127, Dublin, Ohio 43017-3127

Top Ten TIPS

BY JOE CHURCHILL editors@thefamilyhandyman.com

Most homeowners overapply pesticides and fertilizer to their lawns. Coming from a guy who sells lawn supplies, that may sound strange, but it's true: Homeowners tend to look for a chemical solution to lawn problems when they should be thinking about *healthy grass* instead. When a lawn is healthy, it resists disease. If it isn't sick, it doesn't need "drugs" and extra care.

Here are 10 tips to help you keep your lawn healthy. Whether you want to reduce chemical use or eliminate it altogether, following these tips will help your grass, your wallet and the environment.

1 Adjust your expectations

Lawn chemicals do work, and it's difficult to get that flawless "golf course look" without them. So if you plan to eliminate or drastically reduce chemical use, you may have to accept imperfections. Expect a dandelion or two and areas that will be a little less green at some times of the year. That said, you could still expect your lawn to look good—probably as good or better than most of your neighbors' lawns.

2 Mow regularly

Mowing is a chore that's easy to put off—the grass will still be there in a couple days. But delay is bad for your grass. The taller it gets, the more you'll cut off when you finally mow. And the more you cut off, the more you'll "shock" the grass. That weakens each individual plant and leads to other problems later on. It also opens up the turf canopy and allows weeds to bully their way in.

Rule of thumb: Never remove more than one-third of the leaf blade each time you mow. And keep your lawn mower blade sharp. A clean cut reduces the chance of common lawn diseases making their way into the leaf tissue. Your lawn will look much better too.

3 Remove thatch

Thatch is a layer of slowly decomposing grass stems, roots, clippings and debris that accumulate at the soil surface over time. It can build up in your lawn and virtually choke it to death. Excessive thatch buildup is commonly found in lawns that have been overfertilized or overwatered and have never been aerated. Thatch buildup of 3/4 in. or more will restrict water and nutrient penetration into the soil (think thatched roof) and can harbor disease organisms that can increase the need for pesticides.

Slice open a section of turf. If the thatch is more than 3/4 in. thick, take action.

Regular core aeration (see Tip 9) will slow thatch development. However, it won't do much to remove existing thatch. This can be done by renting a power rake (about $50 for a half day), which will "lift" the thatch from the soil surface. This thatch residue can then be raked by hand and removed. Dethatching is hard work, so it's smart to prevent buildup in the first place. The best way to do that is to avoid overwatering and overfertilizing.

SEAL KRETE
WEEKEND PROJECTS

EPOXY-SEAL CONCRETE & GARAGE FLOOR PAINT
- 3x More Durable than Porch & Floor Paint
- 1-part Epoxy, Easy to Apply
- Resists Peeling, Blistering, Automotive Fluids, Road Salts & Hot Tire Pick-Up

DAMPLOCK MASONRY WATERPROOFING PAINT
- Resists 15 psi of Water Pressure
- 15 Year Waterproofing Warranty
- Resists Mold & Mildew

handyman.seal-krete.com
800-323-7357

HOW TO TREAT CONCRETE®

Keeps Your Filters Clean!
Captures 99% of the waste
BEFORE it reaches your
shop vacuum!
Pays you back in replacement filter costs alone!

Dust Deputy® Deluxe

- Easy empty bucket.
- Portable with casters.
- Wet or dry.

Now Available at these fine retailers.

ACE The helpful place. WOODCRAFT MENARDS® *Dedicated to Service & Quality™*

Like Oneida Air Systems Made in the USA.

Dust Collection Systems & Components Since 1993.

Call for Information!

1.800.732.4065 www.oneida-air.com

4 Add compost

Top-dress your lawn with high-quality compost. Compost can bring depleted or damaged soil back to life, resulting in stronger root systems and happier plants. One teaspoon of compost contains a billion beneficial microorganisms that help create better soil structure and texture, which improves nutrient, water and air retention.

To apply compost, spread it over your lawn with a shovel, aiming for a layer 1/4 to 1/2 in. thick. Then work it into the turf with a rake. It's best to do this after aerating. Most garden centers sell bagged compost. But to cover an entire yard, you're better off buying in bulk from a garden center. Quality compost for a typical lawn will cost $150 to $350. Don't worry about buying too much—any leftovers will benefit your garden and shrub beds.

5 Reseed

Instead of applying costly pesticides, sow quality grass seed. Reseeding your lawn every year will help maintain good turf density and make it very difficult for weeds to take hold and grow. In fact, some grasses actually release a beneficial toxin into the soil that acts like a natural preemergent herbicide, preventing weeds from germinating.

Reseeding with genetically improved varieties will also boost your lawn's performance. Many newer grasses require less fertilizer, watering and mowing compared with the older grasses that are most likely in your lawn. If you haven't reseeded in the past 10 years, you're long overdue. Simply use your fertilizer spreader to broadcast seed immediately after core aerating. Those soil plugs lying on your lawn's surface will dry out while you do this. After you've spread the seed, break up these cores with a rake. The combination of seed and pulverized soil will backfill your aerator holes, creating perfect seed-to-soil contact.

StoreMags

6 Fertilize just enough

Regular composting doesn't replace fertilizing. Your lawn will still require food once in a while. And testing your soil (every two or three years) is the best way to know when and how much fertilizer your grass needs. It will help you determine nutrient deficiencies *and excesses*, so you won't pay for or apply fertilizer you don't need. Don't fertilize because you *think* your lawn needs it. Contact your local university or garden center for help with soil testing.

There's no need to fertilizer more than twice a year. An organic fertilizer applied after core aeration will maximize plant and soil health. Like compost, organic fertilizers help feed beneficial organisms and replace valuable nutrients in your lawn. Most organic fertilizers are very safe to use nearly any time of the growing season. I prefer meal-based organics containing bonemeal, blood meal, fish meal and feather meal; however, organics made with poultry litter and biosolids work too.

7 Water less

One of the biggest mistakes made by lawn owners who have a sprinkler system is overusing it! Too much water is costly, wasteful and bad for your lawn. Water early in the morning, not during the afternoon when it's hot or when it's windy. More of that precious water will make its way to the roots.

Space irrigation cycles as far apart as possible. Let the grass wilt and turn a little blue before watering again. The less you water, the deeper those grass roots will go to look for it. This is a good thing! Overwatering discourages roots from penetrating deep into the soil. They are encouraged to stay close to the surface where the moisture is. A lawn with shallow roots dries out quicker. Not good!

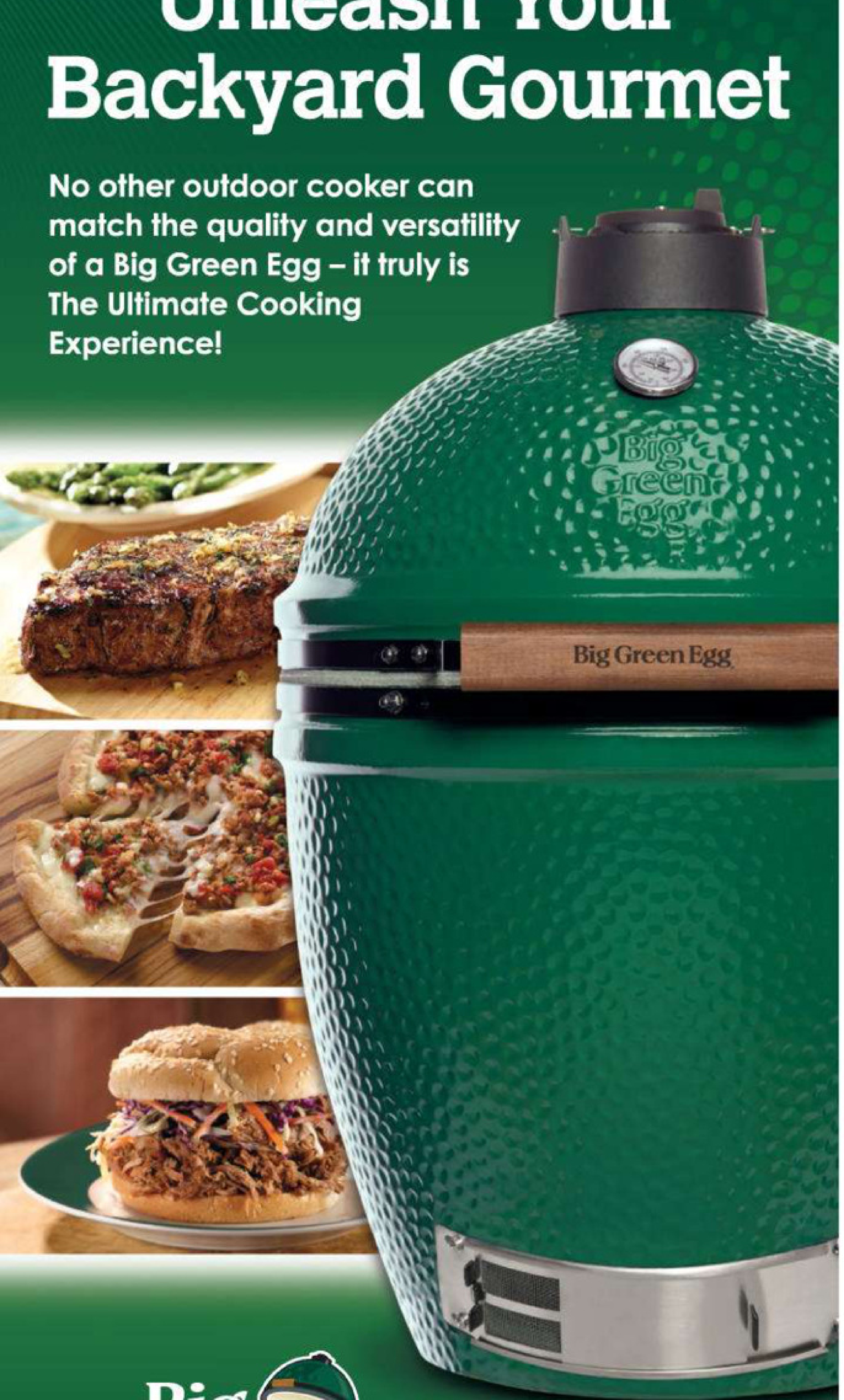
8 Raise your mower

Taller grass means a healthier lawn. It shades the soil surface, keeps the soil from drying out and reduces watering needs. Shaded soil also makes it harder for weeds to get started. If you raise your mowing height, you may even find that the taller grass chokes out existing weeds. For northern lawns, 3 in. is a great target height. For warm climates, 1-1/2 to 2 in. is best.

GRILL | ROAST | SMOKE | BAKE

Unleash Your Backyard Gourmet

No other outdoor cooker can match the quality and versatility of a Big Green Egg – it truly is The Ultimate Cooking Experience!



Big Green Egg

The Ultimate Cooking Experience®

BigGreenEgg.com

© COPYRIGHT BIG GREEN EGG INC. BIG GREEN EGG® AND THE ULTIMATE COOKING EXPERIENCE® ARE REGISTERED TRADEMARKS OF BIG GREEN EGG INC.

9 Aerate the soil

"Aerating" simply means making holes in the ground by removing plugs of soil. And it's the single most important task you can perform to maintain a healthy, good-looking lawn. Nothing else comes close! It relieves compaction caused by foot traffic and creates extra pore space in the soil, allowing air, nutrients and water to enter. All of that helps roots to thrive.

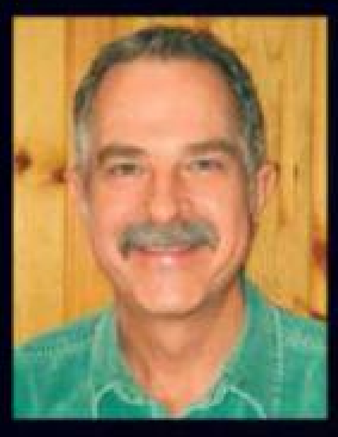
Aerate your lawn at least once a year, preferably in the fall. Do it two or even three times each year if you can. The more, the better. You can rent a lawn aerator at any equipment rental store for about $60 for an afternoon. Get one that will remove plugs of soil rather than one that pokes holes in the ground.

StoreMags.com

10 Trim trees

Grass is a sun-hungry plant. By strategically removing a few branches or carefully trimming lower limbs, you'll give it more sunlight. This can also improve air circulation, which helps cool your lawn during hot, humid conditions and reduces lawn diseases. In many cases, your trees and shrubs will look better too. If you love your trees and shrubs just the way they are, consider replacing grass with shade-tolerant ground covers or decorative mulch. Remember: You can't have both deep shade and lush grass.

MEET THE EXPERT



Joe Churchill is a turf industry veteran. Over the past 35 years, he has helped hundreds of professionals grow better grass on golf courses, sports fields and yards.

The *Original* Trimmer-on-Wheels
Just Got BETTER!

NEW LOW PRICE!

The *NEW* DR® TRIMMER/MOWER

TRIMS, MOWS waist-high grass and weeds.

CUTS BRUSH, SAPLINGS up to 3" thick with exclusive accessories.

THICKEST, LONGEST-LASTING CORD available anywhere (225 mil Sawtooth™).

The *ONLY* Trimmer Guaranteed Not To Wrap!

87450X © 2015

FREE SHIPPING
0% 36 MO. FINANCING
SOME LIMITATIONS APPLY
Call or go online for details.

Call for FREE DVD and Catalog!
TOLL FREE 800-731-0414
DRtrimmers.com

DIY Quiz

BY MARK PETERSEN editors@thefamilyhandyman.com

Put on your thinking cap and take this month's quiz to see just how smart you are when it comes to DIY. Here's how it works:

- There are easy, intermediate and really tough questions all mixed together.
- There may be more than one correct answer!
- Find the answers and get your DIY rating on pp. 90–91. Good luck!

ART DIRECTION **ELLEN THOMSON** • PHOTOGRAPHY **HSP** • ILLUSTRATION **STEVE BJÖRKMAN**

1. True or False? A hot, sunny day is a bad time to stain your deck.

2. Which is an easy way to find a stud?

A. Remove a cover plate from an outlet and look for spacing knobs.
B. Measure over from a handrail bracket.
C. Check the location of picture hangers.
D. There's always one on the right side of a heat duct.

3. True or False? You're supposed to check your smoke alarms once a year.

4. Which of the following is the best way to dispose of oily rags?

A. Crumple them into tight balls before throwing in the trash.
B. Dry them completely before discarding.
C. Seal them in a plastic bag before disposing.
D. Place them in the trash; just make sure they don't touch each other.

5. When is the very best time for extensive tree pruning?

A. Spring
B. Summer
C. Fall
D. Winter

6. How do you check the accuracy of a level?

A. Check bubble orientation on a flat surface; flip the level upside down; check again.
B. Use a plumb bob.
C. Check bubble orientation on a flat surface; rotate the level 180 degrees; check again.
D. None of these will work.

7. **What is the advantage of setting-type joint compound when taping drywall?**
A. It's easier to sand.
B. It shrinks very little.
C. It hardens fast.
D. All of the above

8. **When should you use the clutch on your drill?**
A. Driving in large screws
B. Removing screws
C. Driving in soft metal screws
D. Driving in screws with a hex head

9. **Which color wire connector can join four 14-gauge wires?**
A. Red
B. Yellow
C. Orange
D. Depends on the manufacturer

10. **Which product works best for cleaning shellac-soaked brushes?**
A. Paint thinner
B. Denatured alcohol
C. Mineral spirits
D. Soapy water

11. **What is this tool used for?**
A. Drilling pilot holes for cabinet hardware
B. Creating pocket holes
C. Removing caulking around a tub
D. Installing screws in concrete

12. **What is this type of joint called?**
A. Scarf
B. Butt
C. Finger
D. Dovetail

13. **Which is the best product to free a stubborn rusty bolt?**
A. Coca-Cola
B. General-purpose lubricant
C. Penetrating oil
D. Kerosene

14. **True or False? Packing as many clothes as possible into a washing machine saves wear and tear on the appliance because you'll run fewer loads in the long run.**

15. **Which is the best way to install crown molding?**
A. Right to left
B. Shortest piece first
C. Left to right
D. None of the above

Find the DIY Quiz answers on pp. 90–91.

advertisement

Top

Tools

Worth

FREE

INFORMATION

Circle the numbers for each advertiser or category on the attached card, stamp and mail or visit

WorkShop-FreeInfo.com

AUTO 100

1. **geico.com**
You could save 15% or more. Get a FREE rate quote today. **1-800-947-AUTO**
Geico.com

2. Buy everything from one lug nut to a new fender at reliably low prices. Get your auto parts at **RockAuto.com**

BUILDING & CONSTRUCTION 101

3. AZEK Building Products offers premium, low maintenance exterior building products designed to last beautifully. **AZEK.com**
877.275.2935 877.ASK AZEK

4. Waterproofing Masonry Made Easy. See how easy it is to protect basement walls and other masonry surfaces from the damaging effects of water penetration Fast Plug and DRYLOK Etch. United Gilsonite Laboratories. **1.800.272.3235 ugl.com**

5. Genovations® Deck Flooring & Railing is manufactured to last a lifetime. Genovations® is easy to install, easy to maintain, and easy to enjoy. Lifetime Warranty provided.
1-800-521-7488 GenovationsDeck.com

6. Trust J-B Weld whether you're doing a small repair or tackling a large project, we have all the products you need to get the job done right. You can count on us to perform — World's Strongest Bond. Visit our new web-site to see a full range of fantastic repair solutions.
jbweld.com 1-903-885-7696

7. ProWood® professional grade treated lumber offers a wide selection including color-infused ProWood Dura Color®. **ProWoodLumber.com**

8. SafeRacks is the premier provider of overhead garage storage. Can hold up to 600lbs. Finally, Take Back Your Garage! **SafeRacks.com**

9. TimberTech offers the ultimate high performance decking and railing for low maintenance living. It's our passion. **TimberTech.com**
800-307-7780

KITCHEN & BATH 104

10. Buy a Champion, Be a Champion! Every Champion toilet sold will help improve sanitation in a developing country. **flushforgood.com**
(800) 442-1902

11. For Pocket Door Hardware, visit **johnsonhardware.com**, call **800-837-5664**, or follow on Twitter **@JohnsonHrdware**.

12. Goof Proof Showers: Shower installations made easier with our own unique products. **1-866-771-9470**
Markeindustries.com

13. Moen is dedicated to designing and delivering beautiful products that last a lifetime. By blending innovation and style, our collections can help you create the bathroom or kitchen of your dreams. **1-800-BUY-MOEN**
moen.com

OUTDOOR/LAWN & GARDEN 105

14. FAIRWAY® Vinyl • Composite • Aluminum Porch Deck and Balcony Guard Railing. Visit **FairwayBP.com** or speak to a railing expert at **1-800-598-5245**

15. Husqvarna Group is the world's largest producer of outdoor power products including lawn mowers, garden tractors, chainsaws and trimmers. **husqvarna.com**

16. Hardest working. Smoothest riding. The most powerful, fully featured vehicles for work, hunt and trail. Get the proof at **Polaris.com**

17. PENNINGTON
THE GRASS SEED PEOPLE

From our humble beginnings in Madison, Georgia, to our state-of-the-art NexGen facilities in Oregon, Pennington has bred the finest grass seed in the industry since 1945. Learn more at **penningtonseed.com**.

18. Zoysia Farm NURSERIES
Improving America's Lawns Since 1953

Want a great lawn? Start with a better grass - Amazoy Zoysia Grass!
1-410-756-2311 Zoysiafarms.com

TOOLS 107

19. CRESCENT

The Crescent Pass-Thru™ Adjustable Wrench Set has laser-etched scales for fast sizing. Flip the jaw and it's a pipe wrench with sharp teeth that hold pipes tight. At the other end, a pass-thru ratchet drives 10 combo SAE/metric sockets. Available at The Home Depot. **CresentTool.com**

20. Grizzly Industrial, Inc.

Grizzly Industrial, Inc. Purveyors of Fine Machinery since 1983.
Grizzly.com 1-800-523-4777

21. MEAN GREEN

Mean Green Cleaner & Degreaser works better on tough grease and grime indoors and out. It's TOUGHNESS YOU CAN TRUST.
MeanGreenDegreaser.com

22. greenworks
Life gets easier.™

The G-24 24V DigiPro Brushless Cordless 2-Speed Compact Drill includes (2) 2Ah batteries, one 24V battery charger, 2-sided bit, carrying bag, belt hook and detachable auxiliary handle. **greenworkstools.com**

23. HARBOR FREIGHT TOOLS
Quality Tools at the LOWEST Prices

Factory Direct To You! 330 stores nationwide with over 7,000 products in-stock. Your one-stop shop for woodworking tools, shop equipment, hand and power tools, storage and much more! Nobody beats our quality, service and price!
1-800-657-8001 Harborfreight.com

24. ROCKWELL

Pro-grade power tools packed with innovation. Rock your next project at **rockwelltools.com** or **866-514-7625**

25. Wiss

Why has Wiss been the #1 selling snip with pros for over 50 years? Precision, Performance, and Durability! **wisstool.com**

MISCELLANEOUS 108

IKEA HOME TOUR

IKEA

26. The IKEA® Home Tour Squad is hitting the road helping America with simple design solutions. A team of five IKEA® experts is touring the country and providing everyday families with free makeovers and helping them improve their life at home. Watch or join the IKEA® Home Tour at **IKEA-USA.com/hometour**.

27. SimpliSafe Home Security

SimpliSafe wireless home security systems are easy to self-install, easy to purchase direct online, and don't require a contract or a telephone line. 24/7 Professional Monitoring for just $14.99 a month. That's smarter home security. Get 10% OFF at **SimpliSafe.com/handy** or call **888-799-1859**

ENTER FOR A CHANCE TO WIN A $100 AMERICAN EXPRESS GIFT CARD

WHEN YOU REQUEST ANY OF THIS FREE INFORMATION ONLINE OR WITH THE CARD ATTACHED

No purchase necessary to enter or win. Sweepstakes begins January 10, 2015 and closes January 22, 2016. Open to residents of the U.S., its territories and possessions, ages 21 and over. Void where prohibited. For entry and other details including official rules visit WorkShop-FreeInfo.com.

ADVERTISEMENT

To advertise: Eric Genova, 212-779-7172 x232

BumpStep®

HITCH MOUNTED BUMPER PROTECTION

- Fits any 2" receiver hitch
- Keeps your vehicle's bumper protected
- Helps against unsightly dents and scratches to the bumper
- Creates "step" for easy cargo access
- Molded from a patented composite resin

Accessories Available for

Acura · Audi · BMW · Buick · Cadillac · Chevrolet · Chrysler · Dodge · Ferrari · Ford · GMC · Honda · Hummer · Hyundai · Infiniti
Isuzu · Jeep · Kia · Land Rover · Lexus · Lincoln · Maserati · Mazda · Mercedes-Benz · Mercury · Mini · Mitsubishi · Nissan
Oldsmobile · Plymouth · Pontiac · Porsche · Saab · Saturn · Scion · Subaru · Suzuki · Toyota · Volkswagen · Volvo · and more!

Order Now: 800-441-6287

American Customers **WeatherTech.com**

Canadian Customers WeatherTech.ca

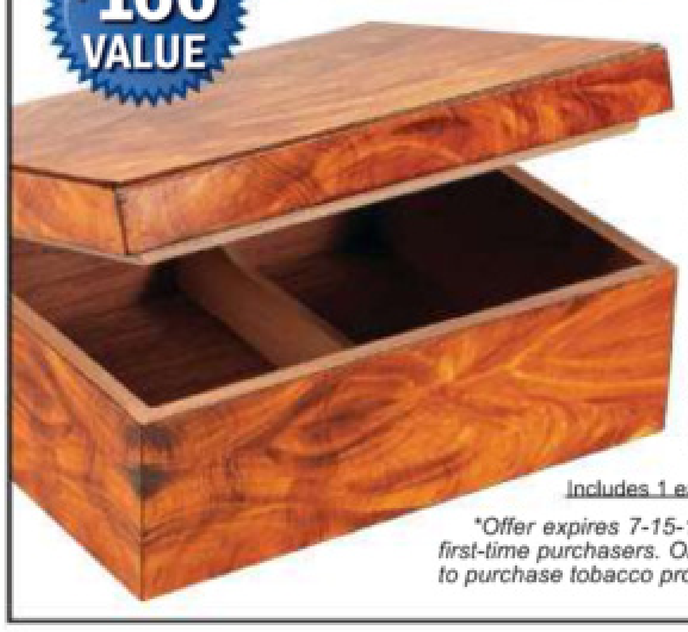
European Customers WeatherTechEurope.com

© 2015 by MacNeil IP LLC

10 CIGARS + HUMIDOR

CIGARS INTERNATIONAL

$160 VALUE



Ultimate Humidor Combo #451

If you're on the prowl for the ultimate cigar deal, look no further. Ten premium handmade cigars from Rocky Patel, Gurkha, Carlos Toraño, and much more. That's worth the price of admission alone. But I'm also including a gorgeous desktop humidor. The whole package is worth $160, but it's yours for just $19.99. I'm losing on this one, because I'm confident that after you experience the quality, freshness, and value we deliver, you'll become a customer for life.

ONLY $19.99*

1-888-244-2790
mention code SA1542

www.CigarsIntl.com/SA1542
You must enter complete web address for special offer

Includes 1 each of: Rocky Patel • Toraño • Amati • Gurkha • Ramón Bueso • Bahia • 5 Vegas • Mark Twain • Arganese • La Perla + **40-Capacity Desktop Humidor**

**Offer expires 7-15-15. Plus $5.99 s/h. PA residents add 6% tax –taxes on orders shipped outside of PA are the responsibility of the purchaser. Offer available to first-time purchasers. One per customer. From time to time substitutions may occur. Cigars International only sells products to adults who meet legal age requirements to purchase tobacco products. For more information please see www.cigarsinternational.com/ageverify.*

UNCLOG DRAINS

with your

Pressure Washer

$10 OFF

GIFT CODE: **FH39**

LIMITED TIME

ClogHog.com

877.992.5644

Made in the USA

INCINOLET®

electric incinerating toilets

PROBLEM SOLVED!

Need a toilet conveniently located? Home, cabin, shop, boat or dock – INCINOLET is your best solution!

SIMPLE to install, maintain. Only electricity needed: 120 or 240 volts

ULTRA CLEAN: waste reduced to sterile ash, as little as a cupful weekly. Dump in garbage.

TOP QUALITY: stainless steel, platinum odor control, quality construction for a lifetime of satisfaction.

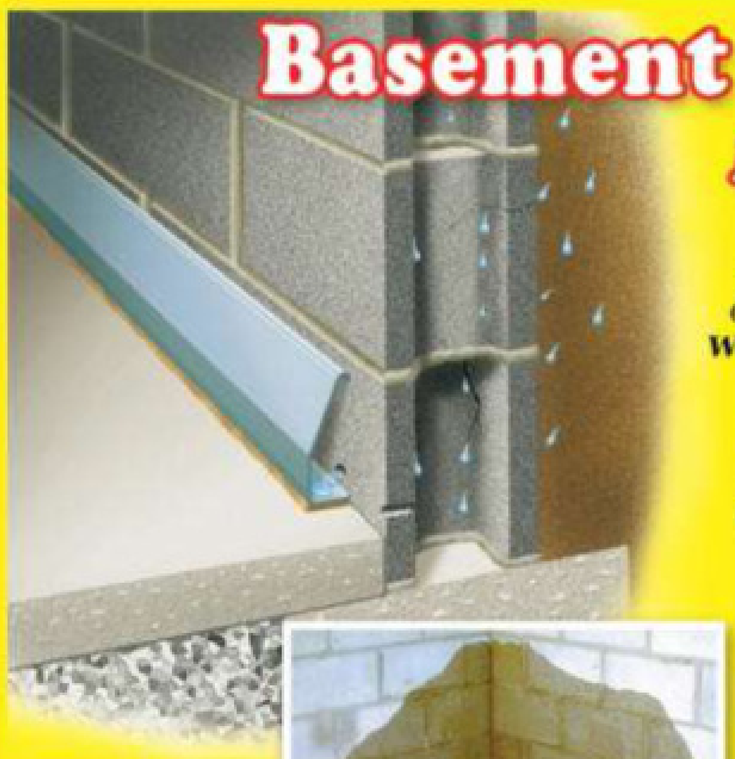
www.incinolet.com

Call 1-800-527-5551 for info, prices and personal attention.

RESEARCH PRODUCTS/Blankenship
2639 Andjon • Dallas, Texas 75220

Basement Waterproofing

Do-it-yourself! It's Easy!



Fast Delivery! Order Online at ***Waterproof.com***

Average cost is *$6.00 per ft Delivered!* (Based on a 100ft)

waterproof.com

Waterproof.com
3419 Osgood Path North
Stillwater, MN 55082
(651) 644-2000

Order Your Kit Today!

Only $24.95

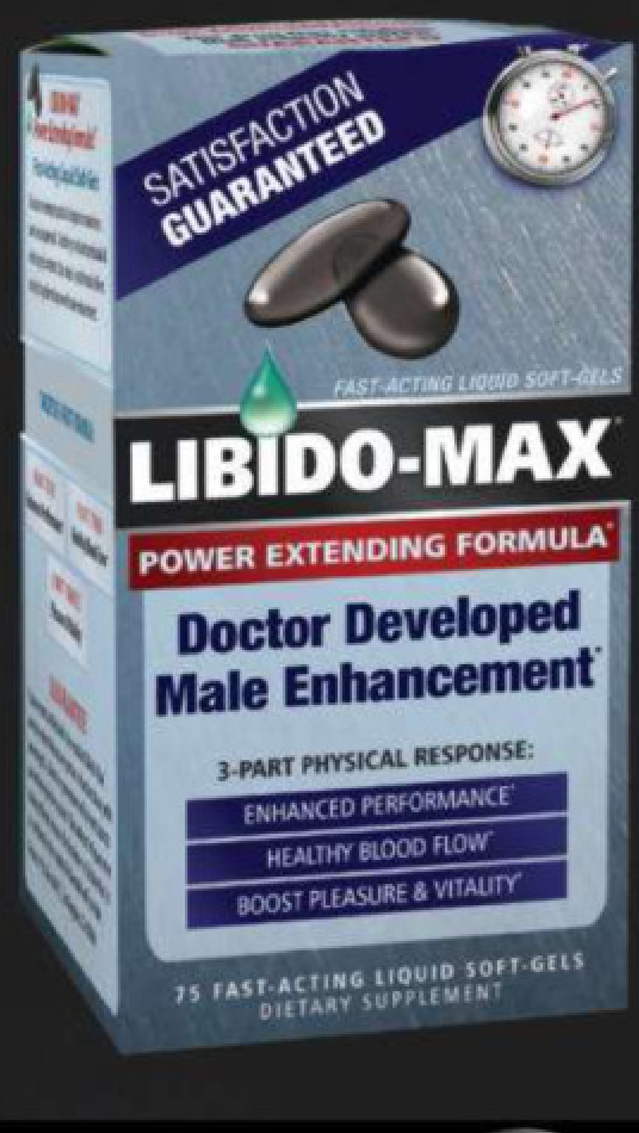
Hydrostatic pressure forces water up through the joint where the floor and walls meet. *SquidGee Dry System* collects the seeping water and quietly drains it to your floor drain or sump pump. The only skill needed for installation is the ability to follow directions. Just seal the pre-molded corners and easy to handle main sections to the floor using the *SquidGee SealOnce Adhesive*. With the *SquidGee Dry System* in place, walls can easily be finished.

Order Online!
Waterproof.com
(651) 644-2000

Drain roof water 8 feet away from your foundation to prevent water problems. Proper water management around the foundation of your home can be very effective at keeping the water from reaching your basement.

WORKS FOR YOU...

OR YOUR MONEY BACK!



Available for purchase with coupon in fine stores everywhere or online at:

www.appliednutrition.com

Enter Coupon Code: 011828

Kmart · Walgreens · Rite Aid · Target · CVS/pharmacy · Kroger

LIBIDO-MAX *for MEN*

75 Count ONLY

SAVE $3

EXPIRES 08/31/15 | MANUFACTURERS COUPON

Consumer: Redeemable at retail locations only. Not valid for online or mail-order purchases. Retailer: Irwin Naturals will reimburse you for the face value plus 8 (cents) handling provided it is redeemed by a consumer at the time of purchase on the brand specified. Coupons not properly redeemed will be void and held. Reproduction by any party by any means is expressly prohibited. Any other use constitutes fraud. Irwin Naturals reserves the right to deny reimbursement (due to misredemption activity) and/or request proof of purchase for coupon(s) submitted. Mail to: CMS Dept. 10363, Irwin Naturals, 1 Fawcett Drive, Del Rio, TX 78840. Cash value: .001 (cents). Void where taxed or restricted. ONE COUPON PER PURCHASE. Not valid for mail order/websites. Retail only.

0710363-011828

5 10363 26387 0

These statements have not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

15 Snow Guard Models

SNOBLOX.com Snow Guards For Metal Roofs

Metal Roof Accessory Attachment

ROOFCLAMP.com Attach Roof Accessories

COLOR Matched Aluminum Snow Rail

SNOBARCOLORBAR.com Year Round Solution

EASY Gutter Leaf Protection

LEAFBLOX.com Keep Leaves Out Of Gutters

STOP Chimney & Vent Pipe Damage

VENTSAVER.com Chimney & Vent Protection

IceBlox Inc., D.B.A SNOJAX BLOX

Toll Free: 800-766-5291
Phone: 717-737-4398

www.SNOJAX.com

Stop Dangerous Snow Slides On Metal Roofs

SnoBlox-Snojax 671 Willow Street Lemoyne, PA 17043

Need more space? Build your own murphy bed.

Piston-lift mechanism kit includes step-by-step construction plans and instructional DVD

Create-A-Bed®

Toll Free 1-877-966-3852

www.wallbed.com

Get Your 3-in-1 Outdoor Room

Covered • Screened • Enclosed

NO permits!
NO taxes!*

SuperPorch®

Get protection from the sun, rain, snow and bugs!

- EasySlide 4 Track System with sliding screen and window panels
- Many size options to fit on existing decks and patios!

www.gosuperporch.com

SAVE 10% SAVINGS CODE 1310

or call 866-557-1772

SuperPorch® by SunPorch Structures, Inc.

FREE Catalogs & Pricing Guide!

*varies by locale.

Weed Razer

Tools for controlling aquatic vegetation

Clears Your Lake or Pond Weeds in Minutes

The most efficient and effective tool made for removing submerged weeds.

Clears a path 48" wide—returns weed free!

Using the Weed Razer is simple:
1. Give it a toss
2. Let it sink
3. Pull it in
4. Repeat

Visit our website to see our Algae control and other pond products!

Toll Free: 877-356-6455

www.WeedRazers.com

ARE YOUR OLD, DRAFTY WINDOWS ROBBING YOU BLIND?

- Build and install yourself, unbreakable interior insulating window panels. NO MIDDLEMAN NEEDED.
- Reduce heating/cooling costs
- Simple tools required
- Materials available at most Home Depot / Lowe's stores
- For complete plans, ***plus*** step-by-step directions, mail a $19.95 check to:

D. Kulka – Dept. HM
P.O. Box 2571
Wichita Falls, TX 76307

MONKEYRACK®

Ladder Stabilization System

Safety 2014 Award Winner

WE HOLD EXTENSION LADDERS

Order online or call 941-747-8697

www.monkeyrack.com

TAKING YOUR GOLF GAME

TO THE NEXT LEVEL

We manufacturer Do-It-Yourself synthetic golf green kits that have the realistic look, feel, and true ball roll as a real golf green.

IT'S NOT JUST A SYNTHETIC GOLF GREEN

IT'S A PUTTING & CHIPPING PRACTICE FACILITY

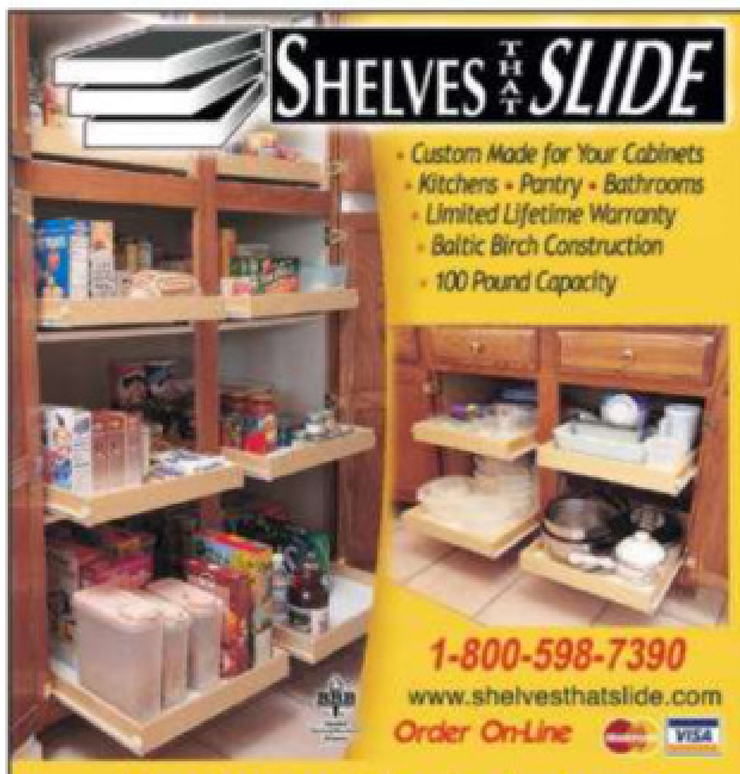
GOLF SMARTER NOT HARDER

FREE DVD

1-800-334-9005

www.allprogreens.com

SHELVES THAT SLIDE



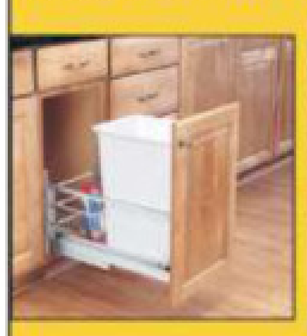
- Custom Made for Your Cabinets
- Kitchens • Pantry • Bathrooms
- Limited Lifetime Warranty
- Baltic Birch Construction
- 100 Pound Capacity

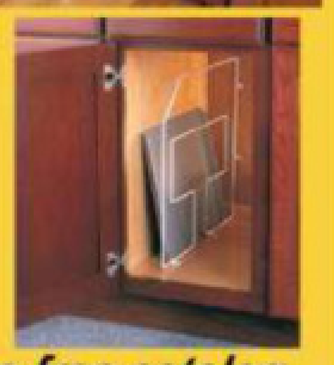
1-800-598-7390

www.shelvesthatslide.com

Order On-Line

Custom pull out shelves and Kitchen cabinet accessories





Call or email for a free catalog

5-Minute Fence Stain

- Stain 100 ft of fence in just 5 minutes!
- Sprayer attaches directly to garden hose.
- No masking, simply hose off over-spray.
- One quart covers 600 square ft.
- Select from three natural wood tones; Natural Cedar, Dark Cedar or Redwood.

FiveMinuteFence.com

Save up to 50% or more on heating costs*

envi™

wall-mounted room heater

energy saving — heats room for as little as 4 cents per hour*

ultra-safe — leave unattended 24/7; cool to the touch

healthy — fanless - doesn't blow dust & allergens or dry the air

effective — 100% Pure Stack Convection; gentle whole room warmth!

silent — fanless design, auto dimming power light

easy install — installs on wall in minutes, no drill; hardwired & plug-in models

stylish — slim space saving design, 19" wide x 22" tall x 2" thin!

eheat.com 1-800-807-0107

(*visit website for details) | 10% OFF Coupon: FHM061510 | 2 or more 15% OFF Coupon: FHM061515 | Free Shipping*

DIY Quiz Answers

1. True. High temperatures and direct sunlight shorten the working time of deck stain, which can result in a blotchy finish (and a miserable worker). Shoot for a cloudy day with temps in the 70s.

2. (A & B) If you don't have a stud finder ($15 at home centers), remove a cover plate and look for the two spacing knobs that are located on the side of plastic boxes. The knobs will be on the side of the box that's attached to the stud. The center of the stud will be 3/4 in. away from the side of the box. In stairwells, you can pull measurements from existing handrail brackets to find other studs.

3. False. The U.S. Fire Administration recommends testing your smoke alarms once a month. Change the batteries once a year. Three out of five fire-related deaths occur in homes without a working smoke alarm.

4. (B) Rags soaked in oil-based products—including paints and stains, linseed oil, varnish and polyurethane finishes and paint thinners—can spontaneously combust. The best way to deal with them is to dry them out, away from other combustible materials. Drape them over a sawhorse, hang them on a metal ladder rung, or spread them out on a concrete floor, and then throw them in the trash. Some solvents can melt through plastic, which is why sealing them in a bag is not a good idea.

5. (D) Most types of trees can be lightly pruned at any time of year. According to the Arbor Day Foundation, the best time for extensive pruning of a tree is in the winter while the plant is dormant. Its experts suggest waiting until the coldest part of winter is over.

6. (C) If you drop your level or doubt its accuracy, the best way to check it is to place the level on a relatively level surface. Shim up the low end until you get a level reading. Once you get a level reading, turn the level around 180 degrees (like a helicopter blade). If the vial still shows level, you're getting accurate readings.

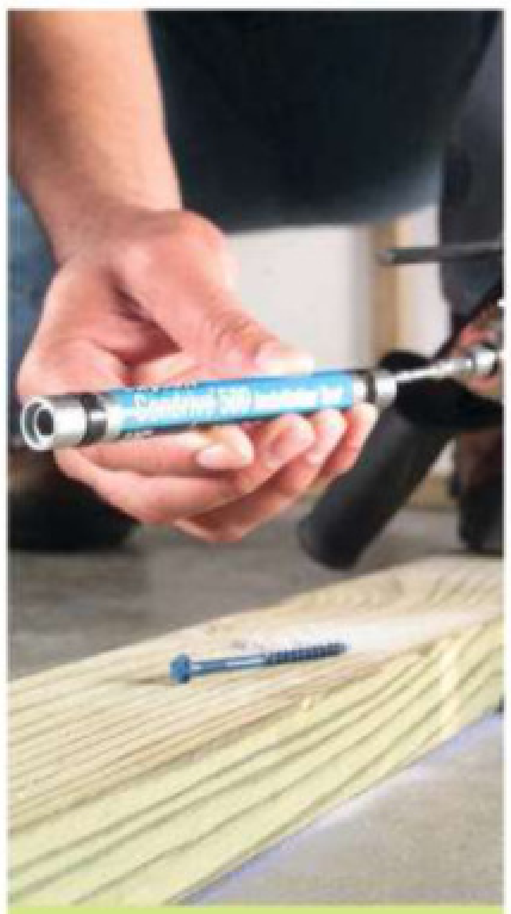
Check the vial that gives you a plumb reading by placing the level against a door frame. Tape paper shims to the jamb until it's plumb, then flip the level upside down (like an airplane propeller), and check for plumb again. Some levels have vials that can be adjusted. But our advice is to buy a new level if yours is out of whack.

7. (B & C) Setting compound hardens fast and shrinks less than regular joint compound. This makes it ideal for filling big holes and gaps, and embedding the tape. Lightweight setting compound is easier to sand than regular setting compound, but neither sands as easily as regular joint compound, so thinner coats are better. It comes in powder form, and the number on the bag indicates how many minutes it takes to set up.

8. (C) At times, drills can provide too much power, causing screw heads to strip out, especially with small brass or aluminum screws. Most newer cordless drills are equipped with a clutch, which can eliminate this problem. Set the clutch by twisting the ring near the chuck to the smallest number. Try driving a screw. If the clutch releases (you'll hear a ratcheting noise) before the screw is fully driven, move the setting to a higher number. Choose a setting that drives the screw fully before the clutch releases.

9. (D) Always check the list on the packaging to make sure the connector is approved for the wire combination you want to join. Even though the connectors appear to be color coded, you can't rely on this. For example, one style of yellow connector joins up to four 14-gauge wires, while another connects a maximum of three. You have to check the label on the package or go to the manufacturer's website to find out. Keep a range of small to large connectors and their packaging on hand so you won't be tempted to make do with the wrong size.

10. (B) Cleaning clear shellac varnish or pigmented shellac paints requires a different solvent than cleaning latex and oil finishes. You must use denatured alcohol or an ammonia household cleaner. Always work in a well-ventilated area when cleaning brushes in solvents such as paint thinner, lacquer thinner, alcohol and ammonia.



11. (D) **Install concrete screws fast with a drill bit/driver combination set like this one. The drill bit is covered by a removable sleeve that contains the driver. That way you don't need to have two drills on hand or keep switching back and forth between drill bit and driver. A combination set costs about $25 at home centers.**

12. (A) When joining two sections of trim, a scarf joint has a couple advantages over a simple square butt joint: First, it provides more surface area for glue and makes a stronger joint. Second, a gap will be less visible if the joint does open slightly.

13. (C) **Penetrating oil contains a solvent to dissolve rust, a lubricant to reduce friction and a surface tension reducer for deep penetration. "Home brews" like Coca-Cola, kerosene and mineral spirits don't have all those ingredients. Those products simply don't work as well or as fast as actual rust penetrants/penetrating oils. Soak the bolt for 15 minutes before trying to remove it.**

14. False. Overloading a top-loading washer can fry the drive belts or break the drive coupler. It can also cause socks and underwear to float over the basket. Then they get sucked into the pump and wreck it. If you overload a front-loading washer or dryer, you can burn out the rear bearing or motor. Consult your owner's manual and find the load limits for your machine. Then grab an armful of clothes and stand on a scale to get an idea of just how much your machine can handle.

15. (C) A long piece of molding is clumsy to handle and hard to measure and cut accurately. Install the longest piece first because the first piece has square cuts at both ends—no coping cuts. With the first piece in place, add the piece to the right next and work around the room in that direction. That way, you'll make most of your 45-degree cuts with the miter saw set to the left. With the saw set to the left, the motor is out of the way, which makes the molding easier to hold and the cutting mark easier to see.

WHAT'S YOUR LEVEL OF EXPERTISE?

Beginner: 0 – 5 correct
Intermediate: 6 – 12 correct
DIY Guru: 13 – 15 correct

Great GOOFS®

FROM OUR READERS greatgoofs@thefamilyhandyman.com

DOMESTIC SITUATION

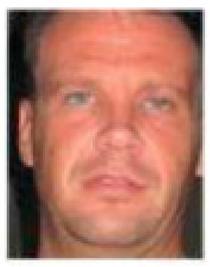
Nighttime is no time for exterior repairs, but I couldn't sleep with that loose piece of trim slapping against the house. So despite the wind and rain, I grabbed a hammer and crawled out the window onto the roof—wearing only my tighty-whitey underwear. Before I could even begin the repair, my wife woke up and closed the window. As soon as I heard it shut, I scurried back to the window and tapped. No response, so I whispered, no response, louder, no response ....

A light went on next door and I could hear our phone ringing. It was the neighbor calling and sheepishly asking if we were having marital problems. (Why else would I be on the roof in my underwear, begging to be let in?) Finally, the window opened and I slipped in, cold and soaked, still tormented by that slapping trim.

Jim Lyle

Panel remover

While I was enjoying a Sunday nap, my overly ambitious girlfriend removed all the kitchen cabinet doors, took them out back and lined them up against the fence. I awoke to the sound of my 3,000-psi pressure washer's engine and reached the backyard just as she squeezed the trigger and almost instantly blasted the panels out of a few doors. I just laughed—hard! Those doors were ugly anyway.



Larry Dullock

Crafty clog

As a young bride, I was always trying to figure out thrifty ways to decorate our home. After one afternoon of crafting, I found the sink drain was clogged and asked my husband to take a look. He spent a few minutes in the basement, then yelled for me to come down. He stood there with a 6-in.-long slug of purple wax in his hand. "Next time you make candles," he said, smiling, "don't pour the leftover wax down the drain."

Robin Johnson

Got your own DIY mistake?
GET A $100 GIFT CARD FOR YOUR GREAT GOOF!
See p. 4.

EDITOR **DAVID RADTKE** • ART DIRECTION **MARY SCHWENDER** • ILLUSTRATIONS **STEVE BJÖRKMAN**

SAVINGS NO MATTER YOUR RIDE.

GET A FREE INSURANCE QUOTE TODAY.

GEICO®

GEICO.COM

1-800-947-AUTO

LOCAL OFFICE

StoreMags

Some discounts, coverages, payment plans and features are not available in all states or all GEICO companies. Motorcycle coverage is underwritten by GEICO Indemnity Company. Boat and PWC coverages are written through Seaworthy Insurance Company, a Berkshire Hathaway affiliate, and through other non-affiliated insurance companies, and are secured through the GEICO Insurance Agency. GEICO is a registered service mark of Government Employees Insurance Company, Washington, D.C. 20076; a Berkshire Hathaway Inc. subsidiary. GEICO Gecko image © 1999-2015. © 2015 GEICO

CRESCENT BRAND

The tool for multi-taskers.

Get three tools in one with the new Crescent® Pass-Thru™ Adjustable Wrench Set. It's a precision adjustable wrench with a reversible jaw that turns it into a tight-gripping pipe wrench. Or flip it to use its pass-thru ratchet to drive 10 combo SAE/metric sockets.

SAE + MM

Crescent lets you Get To Work.™

HEX
SQUARE
12 POINT
E-TORX®
PARTIALLY ROUNDED HEX
SPLINE

3 TOOLS IN 1™

Adjustable Wrench

Pipe Wrench

Pass-Thru™ Ratchet

More Innovation from Crescent Brand Tools.

See videos for all these products at www.CrescentTool.com.

Available at THE HOME DEPOT

Flip and Grip Wrench Multi-Tool

The power of a wrench in a tool that fits in your pocket.

ONE WRENCH GRIPS 40+ FASTENERS™

© 2015 Apex Tool Group, LLC ATG-2006

12-inch Self-Adjusting Pipe Wrench

Compact and lightweight with a grip that won't let go.

2X GRIPPING POWER

NARROW PROFILE