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DIY ADVICE**
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Photographed by Tom Fenenga

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QUALITY MATTERS

WATERING TOOLS THAT DELIVER

I'm not a huge fan of yard work, especially watering grass and gardens. So I pay attention to products that make it easier—and Gilmour has come out with two products that do just that.

The Circular Sprinkler with Spike Base (No. 3203) has all the features you want and need, and its design makes it intuitive to operate. You simply slide collars to adjust the spray pattern or pull up the top for full-circle watering. It has a simple lever for adjusting spray distance and an on/off switch to minimize back-and-forth trips to the spigot. Two sprinklers can be linked in series.

The Thumb Control Watering Nozzle with Swivel Connect (No. 4312) feels solid and has an easy-turn outer ring for adjusting the spray pattern. The volume is controlled by a sliding thumb lever—no squeezing or twisting to adjust the water flow.

The hose connection on both the sprinkler and the nozzle rotate independently, minimizing kinks and twists. They cost about \$15 each. Learn more at gilmour.com.

PHOTOS: GILMOUR



STUFF WE LOVE



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PORTABLE INFLATOR

Air mattresses, inflatable beds, tires, balls, swimming pools—we spend a lot of time fiddling with hand pumps and air compressors. Black & Decker has made life easier with its Multi-Purpose Inflator. This football-size tool can be powered three ways: 120-volt AC, 12-volt DC (via cigarette lighter adapter) or 20-volt rechargeable battery (it's part of the B&D 20V MAX system.) And it's packed with lot of great features:

- Onboard storage for power cords and air hoses.
- A niche for holding a needle valve, tapered nozzle and Presta valve adapter.
- The ability to deflate air mattresses and other inflatables using the hose attached to the end of the inflator.
- A digital gauge for checking the existing air pressure and setting the target pressure (with automatic shutoff).



PHOTOS (2): BLACK & DECKER

It won't win the "Quietest Tool of the Year" award, but it sure is versatile. You can find it for about \$50. Get more info at blackanddecker.com.

MUD-FRIENDLY FOOTWEAR

SHOES FOR THE DIY SOLE

We spend our hard-earned cash for special shoes to help us golf, run and bike. So why not a shoe to help us do yard work?

Kujo Yardwear shoes were developed by a guy fed up with slipping while mowing his lawn, weary of wearing heavy boots for digging, and tired of having wet feet. His goal: a shoe that was light-weight, breathable, flexible and comfortable, yet durable and water resistant with good traction.

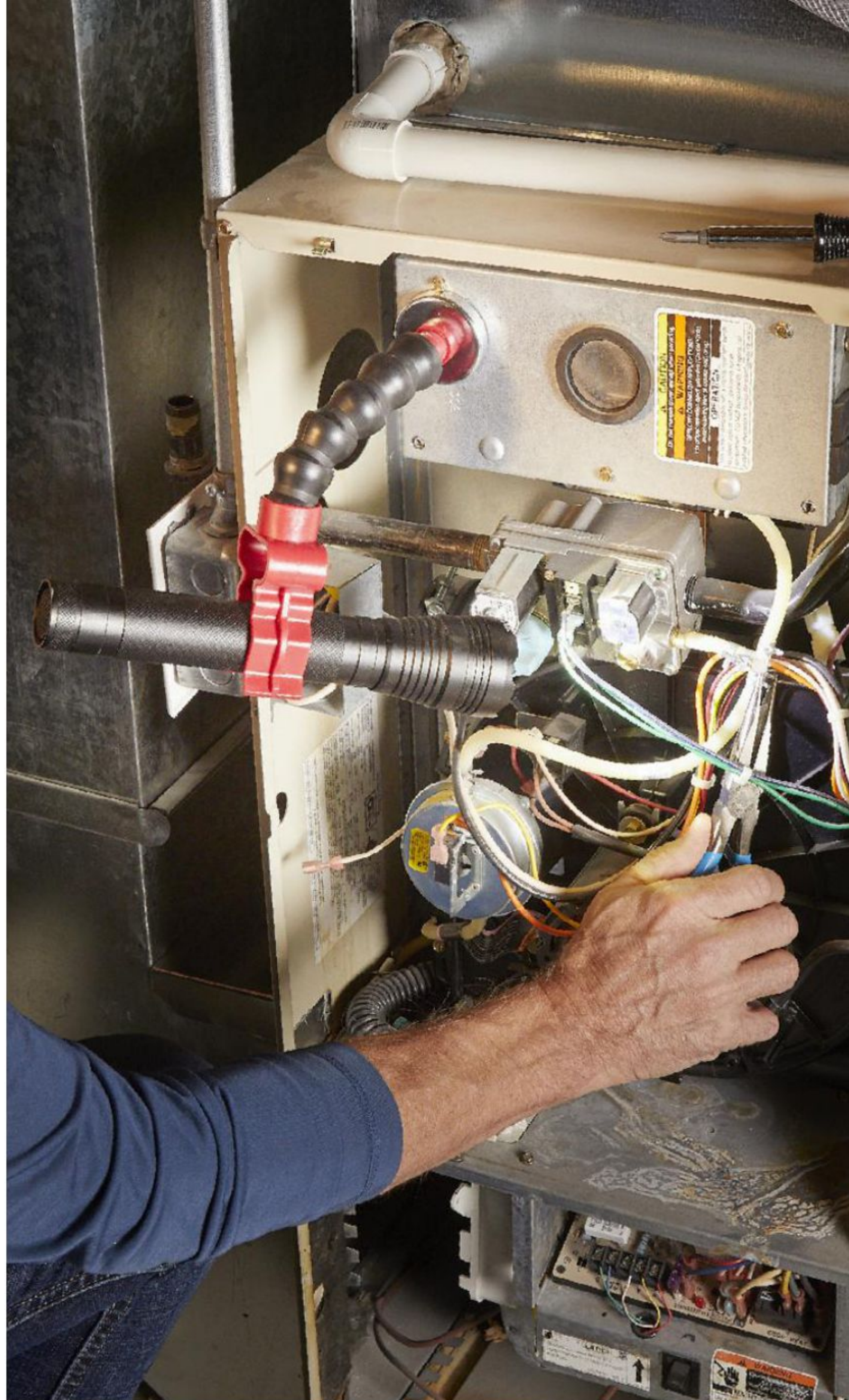
I "test walked" a pair for a week and found them to be functional and comfortable. They offer good support and traction, yet the shoes flex easily. The waterproof sole and lower rim kept my feet dry in damp grass, while the upper mesh let them breathe.

The shoes are available in men's and women's styles for about \$120 (including shipping.) You can order a pair at kujoyardwear.com.

SPIKE CARLSEN, CONTRIBUTING EDITOR



PHOTO: KUJO



LIGHT WHERE YOU NEED IT

Extra Hand, Anyone?

Ever held a flashlight in your teeth to make a plumbing or auto repair? Well, these flashlight holders can save your teeth and your neck. Both holders have a 9-in. flexible neck that bends 90 degrees and rotates 360 degrees. The tapered spring clip firmly grips flashlights ranging from 3/4 in. to 2 in. in diameter.

The spring clamp version can be secured to any object up to 2 in. thick. The magnetic version has a powerful disc magnet that can cling to appliances, vehicles and many flat metal surfaces. You can even stick this version to a drill press table so a flashlight can illuminate your work.

The Lisle holder with a magnetic base (No. 71070) sells for about \$20, and the clamp version (No. 70450) for about \$30 online and at some auto parts stores. Find out more at lislecorp.com.



HAIR'S A SOLUTION

STOP HAIR CLOGS

My daughter has long hair, which means constant drain clogs. So I tried the SinkShroom. Bottom line: It works. The SinkShroom catches hair before it gets deep into the drain. Instead of fishing out clogs, I just lift the SinkShroom out of the drain and yank off the hair. Installing one involves removing the existing stopper, which can involve a little wrench work if it's connected to an operating arm.

There are models in various finishes for bathtubs, showers and sinks. They cost about \$15 each. To find them, as well as other clog-busting solutions, search online for "drain hair catcher."

GARY WENTZ,
EDITOR-IN-CHIEF





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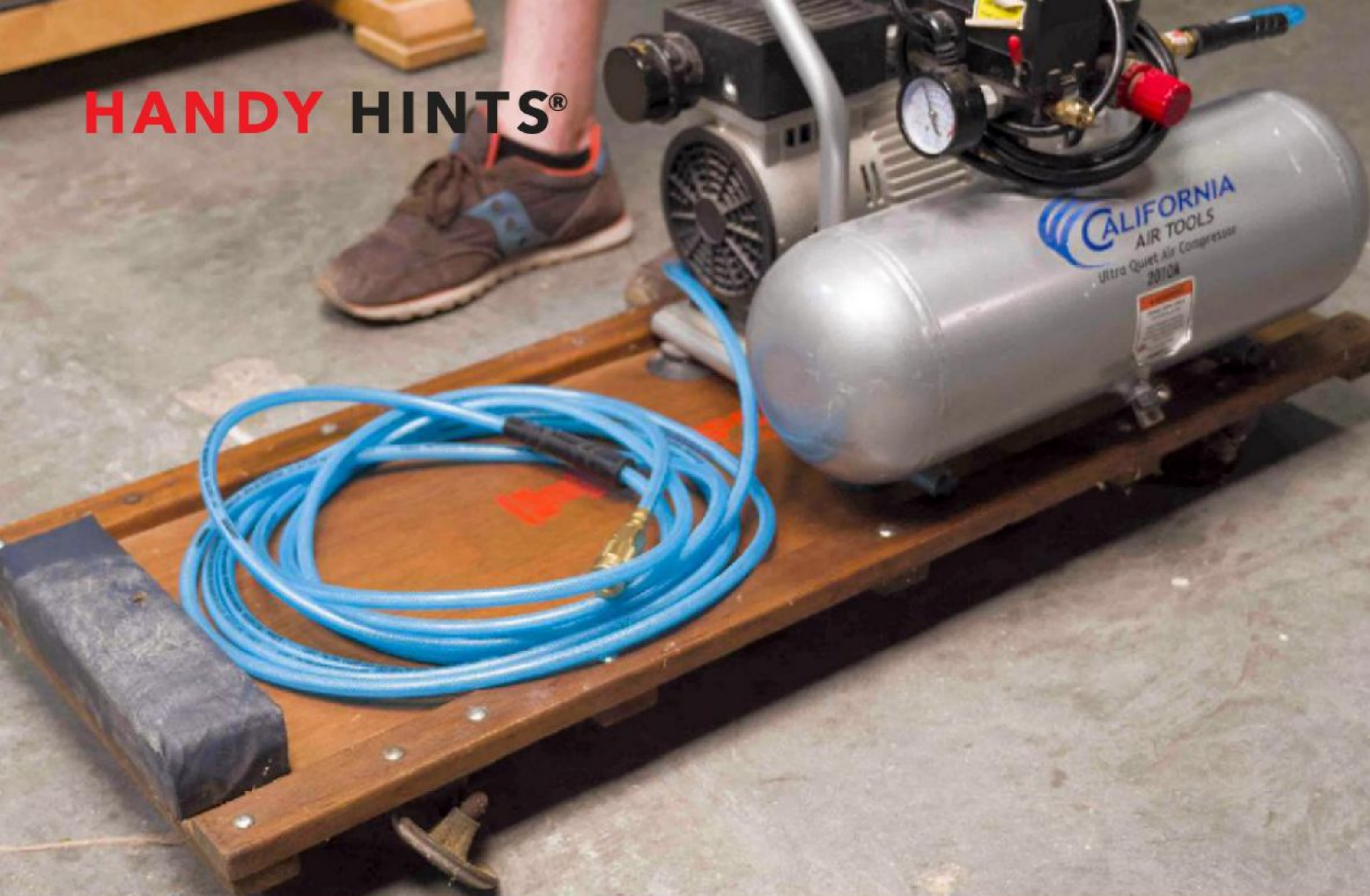
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CHIMNEY FLUE PLANTERS

To make these terra-cotta planters, go to a brick supplier and buy 3-ft. lengths of clay chimney flue liner (\$15 each). Cut them to different heights using a circular saw fitted with an abrasive cutting wheel. You can put them on a deck or patio, or accent your yard wherever you like—just pick your spots and bury the ends in the soil a little.

Fill the liners with gravel for drainage, leaving 8 in. at the top for potting soil. Since the water can drain, the liners won't crack if they freeze. Or just set pots on top of the gravel and bring in the plants for the winter.

NANCY BELMONT



COMPRESSOR CREEPER

Air compressors are heavy and cumbersome to haul around a shop or garage, so I put mine on wheels. I picked up this mechanic's creeper at a yard sale for \$15. Now it's a breeze to roll, rather than carry, my compressor wherever I need it.

NEAL HALSEY



MOTOR OIL SMART SPOUT

I had a hard time pouring motor oil into my snow blower engine without spilling, so I raided the kitchen for a solution. I found that the spout for olive oil and vinegar bottles screws right onto motor oil bottles. Now I can pour without a mess, but I need to buy a replacement before my wife finds out.

RICH GONZALEZ



SELF-DRAINING DEHUMIDIFIER

If you forget to empty the tank on your dehumidifier, it'll either overflow or shut off. That defeats the whole purpose of running a dehumidifier in damp areas. I didn't have a floor drain in that part of the basement, so I bought a condensate pump (\$40 to \$100 at home centers) and tubing and rigged it to my dehumidifier. Then I ran the tubing up to the ceiling, through the joist areas and down to the laundry tub. Now the dehumidifier runs full time, and I never need to empty the tank or worry about it shutting off.

DOUG BALTZER



BERRY BOX SEED SPREADER

If you have just a few small bare spots in the lawn, use a berry container to spread the seed. They have small holes just right for shaking out grass seed. Just clean and dry the container, fill it with grass seed and you're ready to go.

BRAD HOLDEN



GROCERY BAG SHOE COVERS

When I'm working outside, it never fails that I need to go back into the house for something I've forgotten. But I'm too lazy to take my dirty shoes off, so I keep a stash of plastic grocery bags in the mudroom. I just step into the bags to cover my dirty shoes and tie the handle loops around my ankles. I can go into the house without leaving a trace.

LANCE WIIST



PREPAINTING NAIL HEADS

When you're installing prepainted wood or engineered-wood siding, paint the tops of galvanized nail coils the color of the house before loading them into the gun. It's much faster than going back and painting them one at a time later. Use a foam brush and apply the paint sparingly so it doesn't drip over the edges of the nail heads. Let the paint dry completely before loading the coils into the nail gun.

NATE SCHLUTER

DIY Essentials

Our best tips for getting your project done right. By Brad Holden

Get the Best Plywood for Your Buck

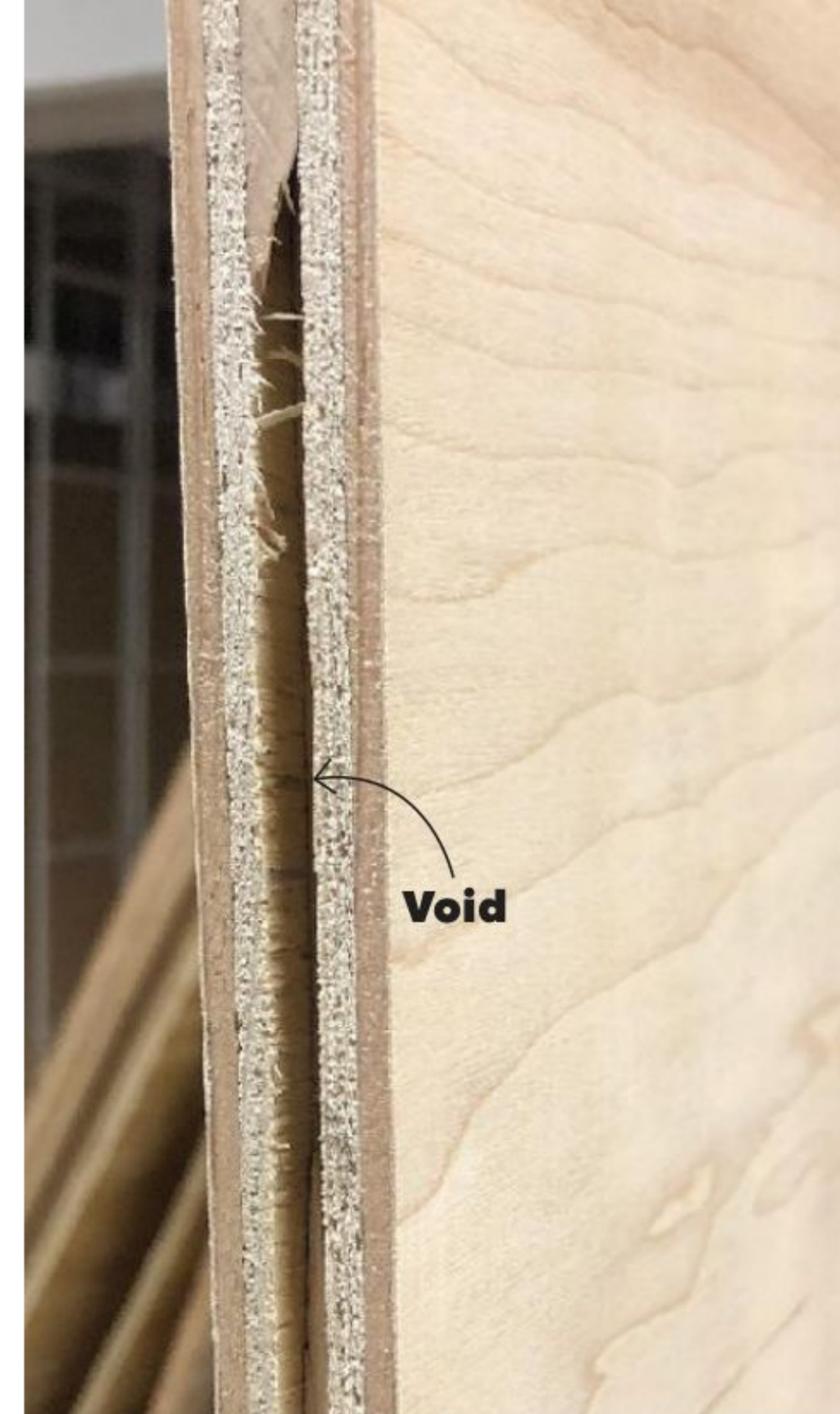
15 tips for better cabinets and furniture

Building furniture and cabinets is an investment of both time and money. So when you're buying plywood for these projects, shop wisely. Your choices will have a huge impact on the building process and the results. This article will help you decide exactly what you need and help you avoid common plywood pitfalls.



MEET THE EXPERT

Brad Holden, an associate editor at *The Family Handyman*, has been building cabinets and furniture for 30 years. In that time, he has absorbed so many slivers and ingested so much sawdust that he's practically made of wood.



2. INSPECT THE EDGES

Look closely at the core veneers on the edge of the sheet. They should be straight and of uniform thickness and have few, if any, voids. If you see a lot of voids and overlapping core veneers along the edge, there will be more throughout the sheet that won't be visible until you cut it. Overlapping veneers cause undulations that aren't visible until after you've applied a finish.

1. CHECK FOR FLATNESS

Don't expect perfection—you probably won't find it. Just try to find the best of the pile. Sight down all the edges just like you'd do if you were buying 2x4 studs. Sometimes, sheets are warped in multiple directions, resembling a potato chip. Leave these for some unlucky, less-informed buyer. If you're buying 1/4-in. plywood, don't worry about flat and straight; it won't be either. But you'll likely fasten it to structural parts, which will keep it flat.

3. BRING A FRIEND

Plywood in 4 x 8-ft. sheets is heavy and unwieldy. Unstacking, inspecting, restacking, loading and unloading are much easier with an extra set of hands.

4. WATCH FOR BURIED TREASURE

The most beautifully figured face veneers will be at the lumberyard. But when I'm at the home center, I like to check out the back faces of the plywood or even plywood that's meant for underlayment. Because most people look for consistency of color and grain, there are some striking veneers that get written off as ugly. Quite often, something catches my eye that could be a really cool design element.



Special Order Product



5. SPECIAL-ORDER FROM THE HOME CENTER

Some home centers will special-order many different species, core options and veneer cuts. But beware: You won't be able to look at the actual sheets before buying, and you probably won't be able to return or reject them unless they're damaged or otherwise unusable. If it's just that you don't like the grain pattern, you're probably stuck with it.

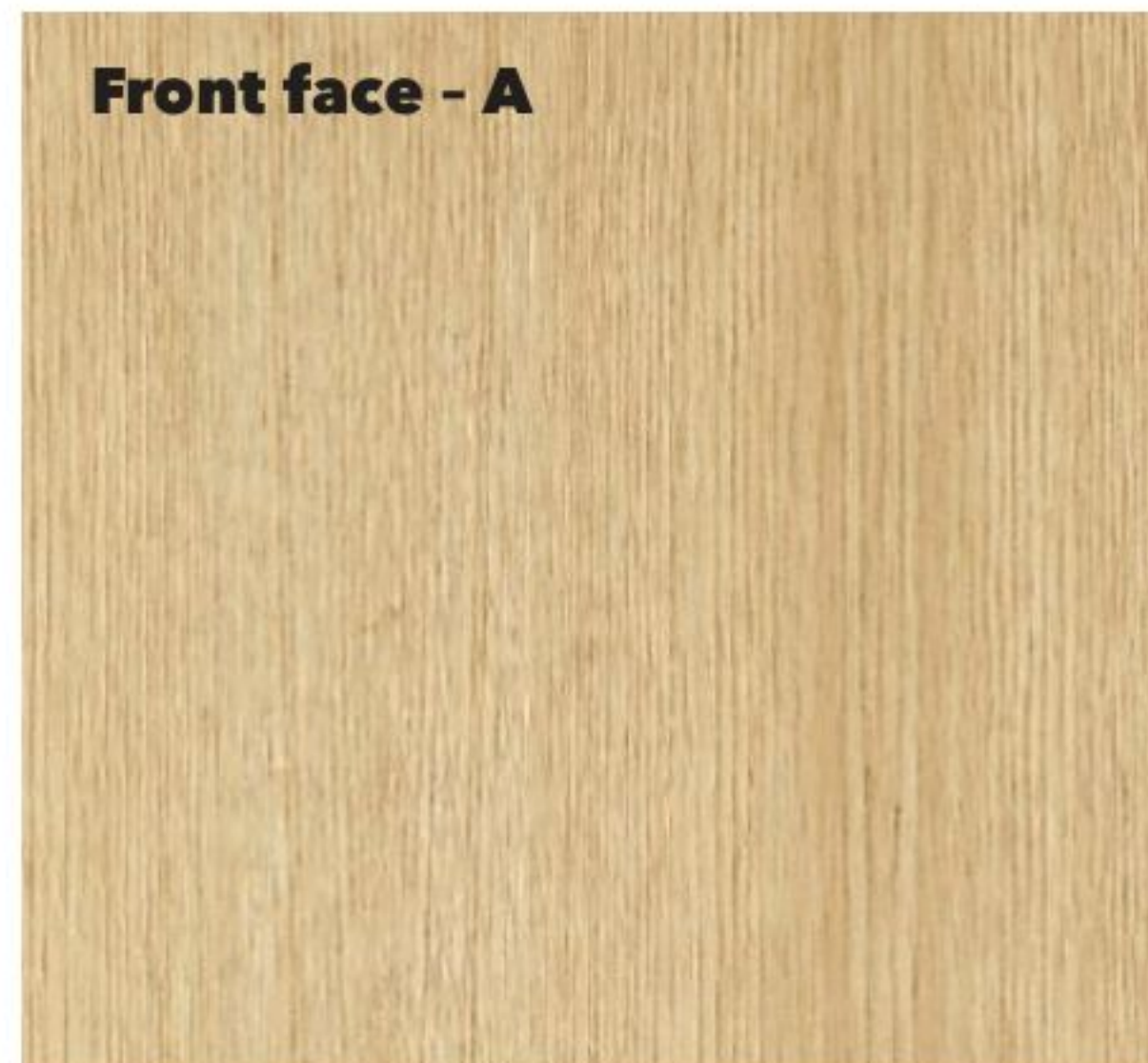
6. USING STAIN? BEWARE OF BIRCH

Any species accepts a clear finish such as polyurethane just fine. But if you're planning to stain your piece, beware of birch, pine and maple. These species take stain very unevenly and can end up looking blotchy. If you're set on one of these species, use pre-stain conditioner, which helps them take stain much more evenly. Even better, look at samples of different species with a clear finish and see if there's one that has the color you like without stain.

7. KNOW THE GRADING SYSTEM

Hardwood veneer plywood has a front and a back face and is graded by the quality of each face. The front face is graded using a letter (A - D), with A being the best. The back face is graded using a number (1 - 4), with 1 being the best.

Front face - A



Back face - 2



8. SHOP THE HOME CENTER FOR CONVENIENCE AND SAVINGS

Baltic birch is a premium plywood found at lumberyards. A 3/4-in., 5 x 5-ft. sheet has 13 core veneers and costs about \$70. Some home centers carry a similar product, called "classic birch." A 3/4-in., 4 x 8-ft. sheet has 10 core veneers and costs \$50 to \$60. It's strong with good screw-holding capability, making it a good, affordable alternative. It's perfect for less visible cabinet parts, drawers and shelving. As for other plywood, home centers have a more limited selection, carrying mostly veneer core (maybe MDF core), grade B2 and lower. Face veneer cuts are typically rotary cut or plain sliced, and in-stock species will usually be red oak, birch and maple. But the home center is a good option to save a little money.

9. DON'T HAVE PLYWOOD DELIVERED

If you have a way to haul sheets of plywood yourself, do it. The person pulling sheets for delivery isn't going to hand-select the nicest sheets for you. If delivery is your only option, inspect the sheets before the delivery truck leaves and reject any that are damaged or unusable. You may not have the option of rejecting a sheet because you don't like the grain pattern.



10. USING PAINT? CHOOSE MDF OR BIRCH

For projects I'm going to paint, I like MDF (medium-density fiberboard) or birch. B-grade birch or lower is fine. Sometimes, you'll even see plywood classified as "paint grade." Birch is close-grained with a smooth texture that doesn't show through paint. With an open-grained species like oak, the grain is visible under paint. MDF, of course, has no grain pattern, making it a good choice for painted projects. But for structural parts, I like birch veneer. For tips on building with MDF, search for "MDF" at familyhandyman.com.



11. SAND AT YOUR OWN RISK

All plywood needs at least light sanding before finishing. Sometimes, the face veneer on home center plywood is so thin that the pink veneer adhesive shows through. On several occasions, I've had birch veneer turn translucent after light sanding with 220-grit paper. If you suspect that the veneer is ultra thin, don't use a power sander. Just sand by hand.

12. SHOP LUMBERYARDS FOR QUALITY AND SELECTION

For a large selection of the best-quality hardwood veneer plywood, visit a lumberyard. A lumberyard that caters to cabinetmakers will give you enough options to make you dizzy. A 4 x 8-ft. sheet will cost anywhere from \$80 to \$120 or more depending on the species and the cut of the face veneer. Some lumberyards also stock 10-ft. sheets.



Can You Get the Bow Out?

Admit it: You've tried flattening sheets of plywood. I have too. I've tried weights, clamps, wetting down the concave side, sun-drying the convex side and gluing opposing bowed sheets together. Nothing seems to work with any reliability. If the core veneers weren't in a perfect state of equilibrium and all in harmony when they were bonded together, the sheet has little chance of flattening out. The only recourse is to save the flattest sheets for the largest parts and use the worst sheets in smaller components, minimizing any curvature.

13. DON'T JUST GRAB THE TOP SHEET

Be picky and dig through the pile for the best sheets. Spending extra time to find the flattest undamaged sheets with appealing grain pattern is well worth the effort. But be kind and restack! And take heart; the bottom sheet is usually a bad choice anyway because it's most prone to forklift damage.



14. WATCH OUT FOR DAMAGE

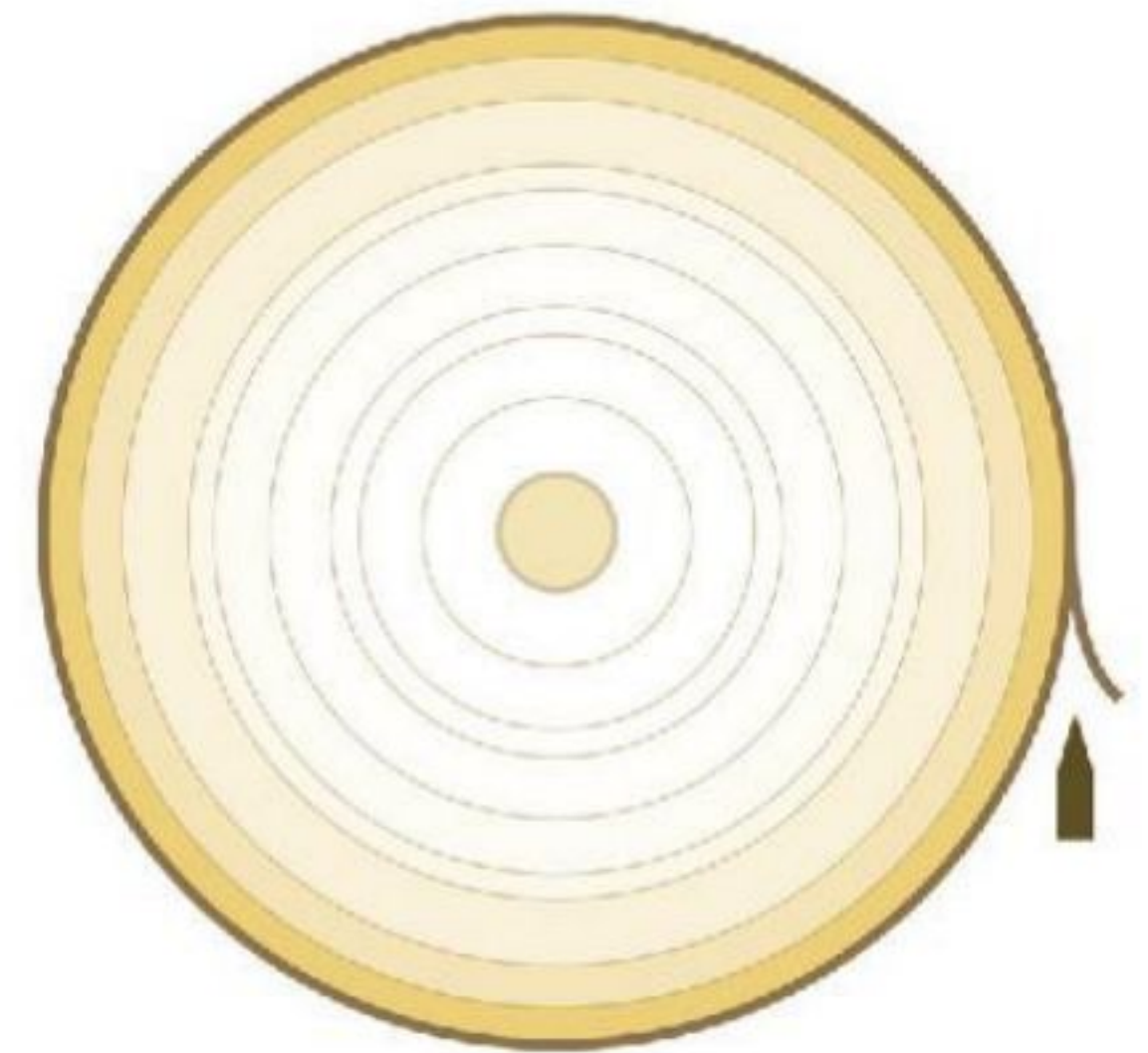
You can often cut around minor damage in an otherwise good sheet (if you can, you might even be able to get a discount). But sanding out deep dents (above) isn't an option. You may not be able to sand out stains either. The purple stains shown result from a reaction between oak tannin and steel.

15. LOOK AT THE FACE VENEERS

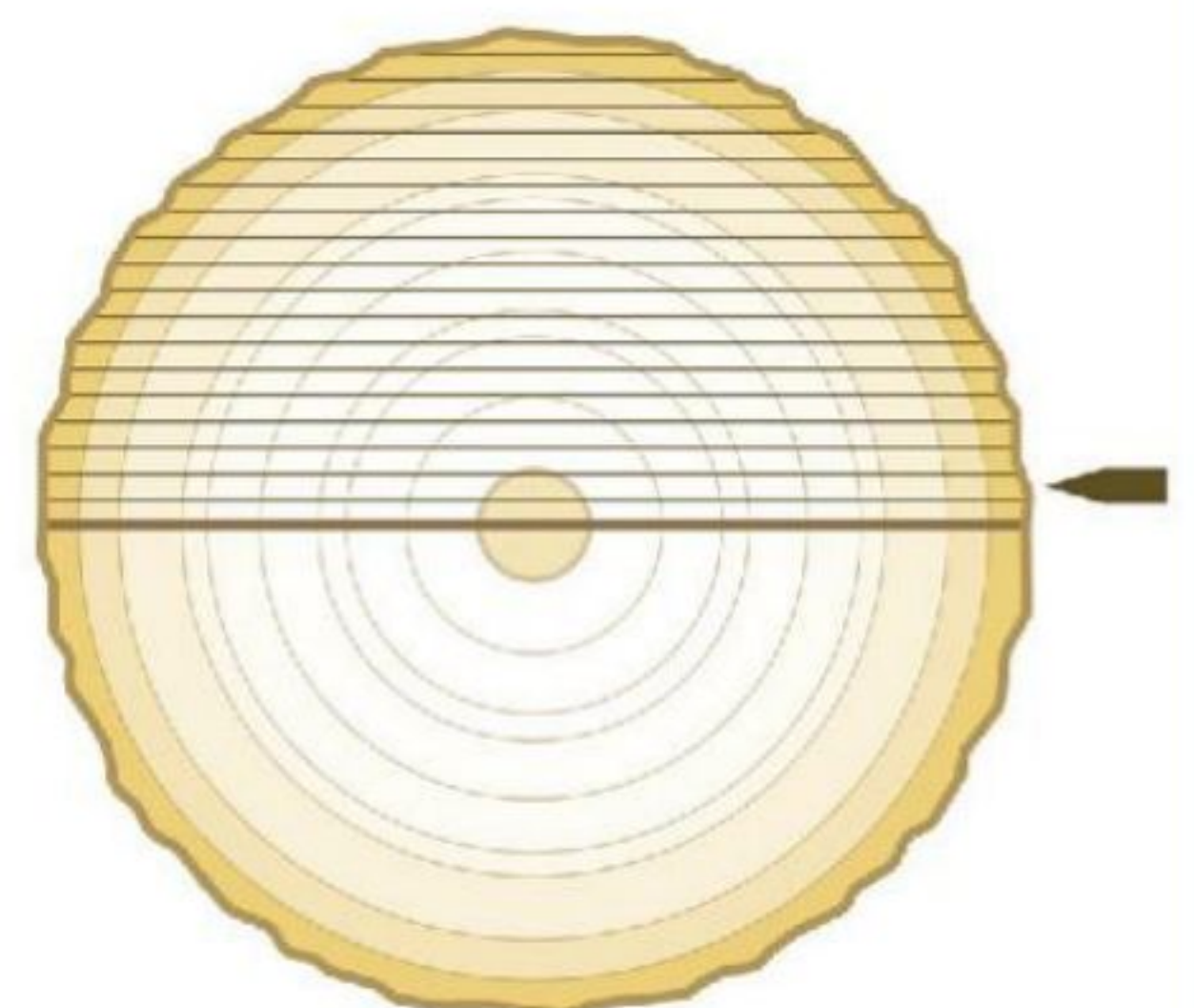
If only one side of your project will be visible, like a closed cabinet, don't worry about the back face. If you're building an open bookcase where both faces are visible, make sure you like the look of both faces.

How Veneer is Cut

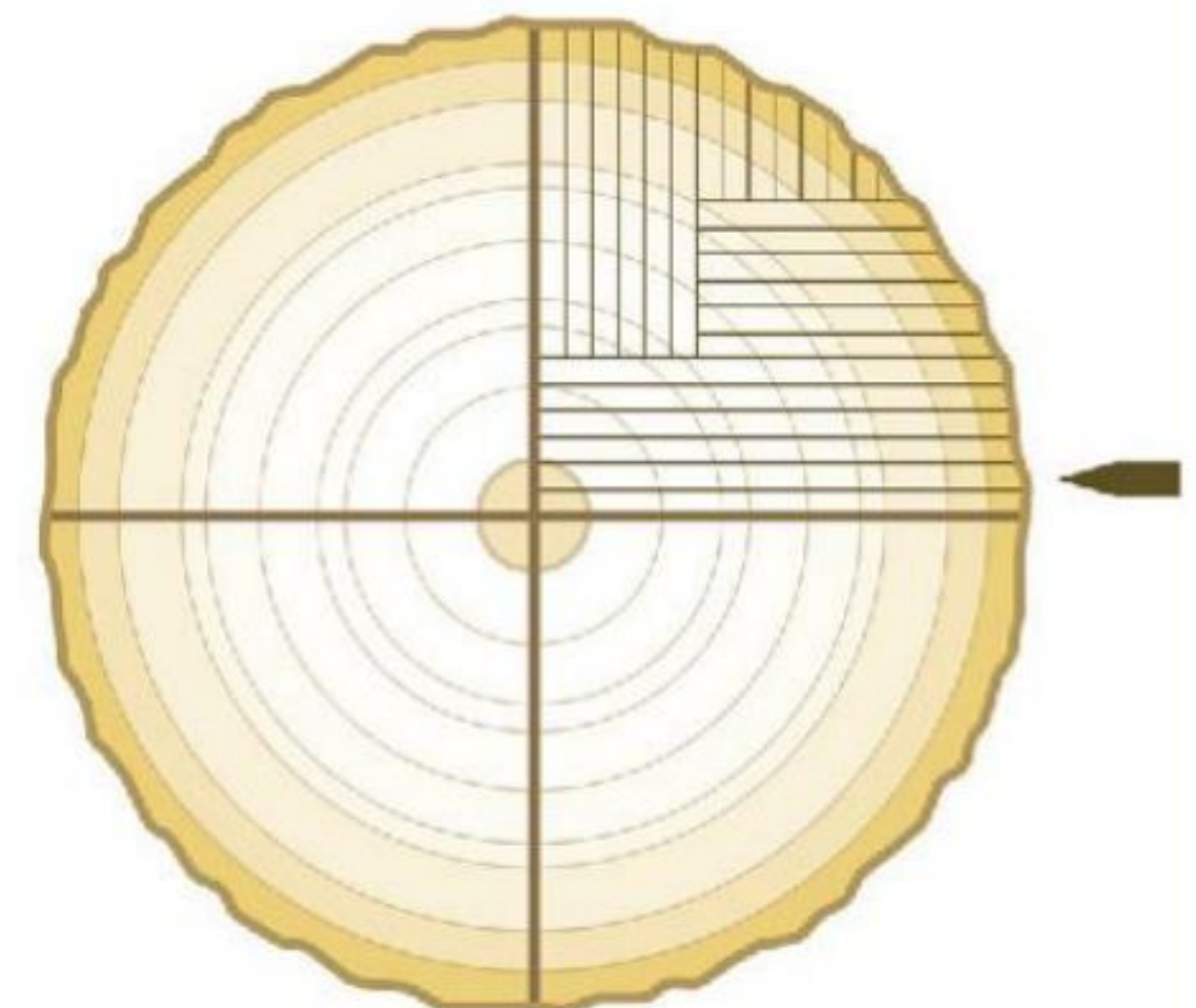
The way the veneer was sliced from the log determines its look. The more common cuts—rotary and plain—are also the least expensive. Quarter-sawn and rift-sawn are more labor intensive to cut and are considered more attractive by most people.



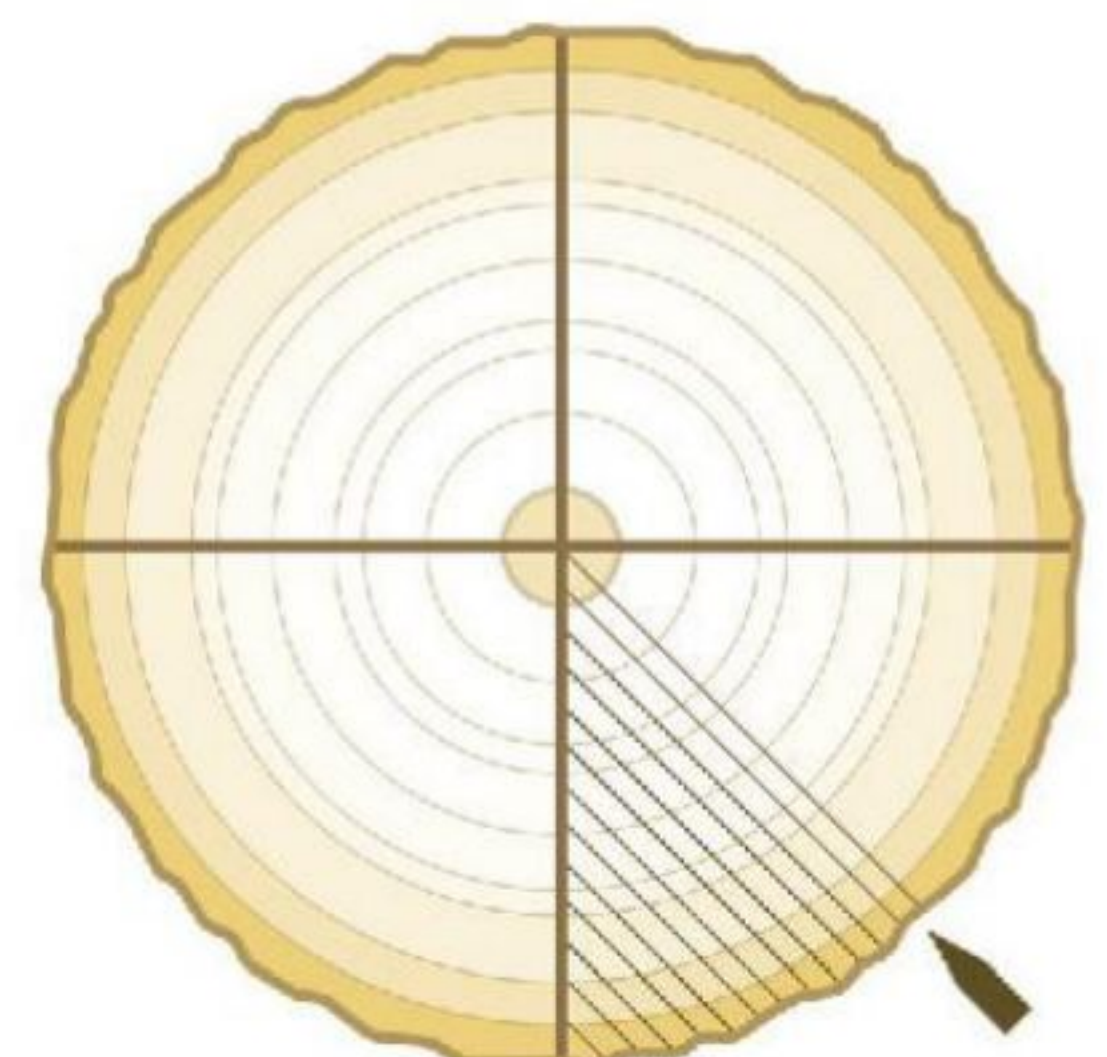
ROTARY-CUT veneer is peeled from the log like paper towels from a roll. It produces a wide, "loud" grain pattern.



PLAIN-SLICING produces a repeating pattern, typically showing large "cathedrals" in the grain.



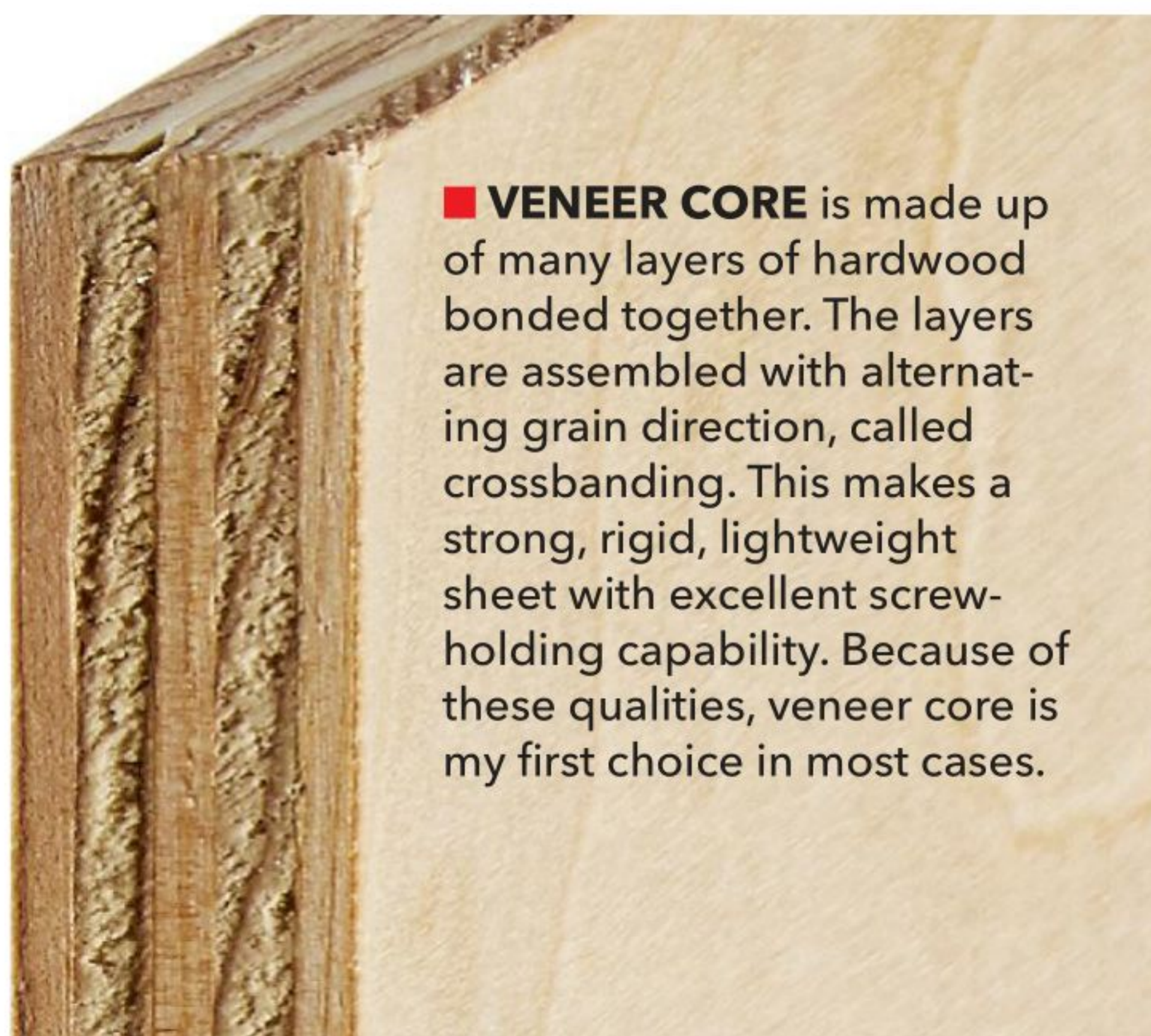
RIFT-SAWING produces veneer with tight, straight lines.



QUARTER-SAWING produces veneer with the same tight, straight lines as rift-sawing but includes the signature "ray flecks."

CORE OPTIONS AND OPINIONS

The materials used to make plywood's inner core affect several important characteristics: weight, strength, rigidity, stability, flatness, screw-holding capability, consistency of thickness, and evenness of the veneer.



■ **VENEER CORE** is made up of many layers of hardwood bonded together. The layers are assembled with alternating grain direction, called crossbanding. This makes a strong, rigid, lightweight sheet with excellent screw-holding capability. Because of these qualities, veneer core is my first choice in most cases.



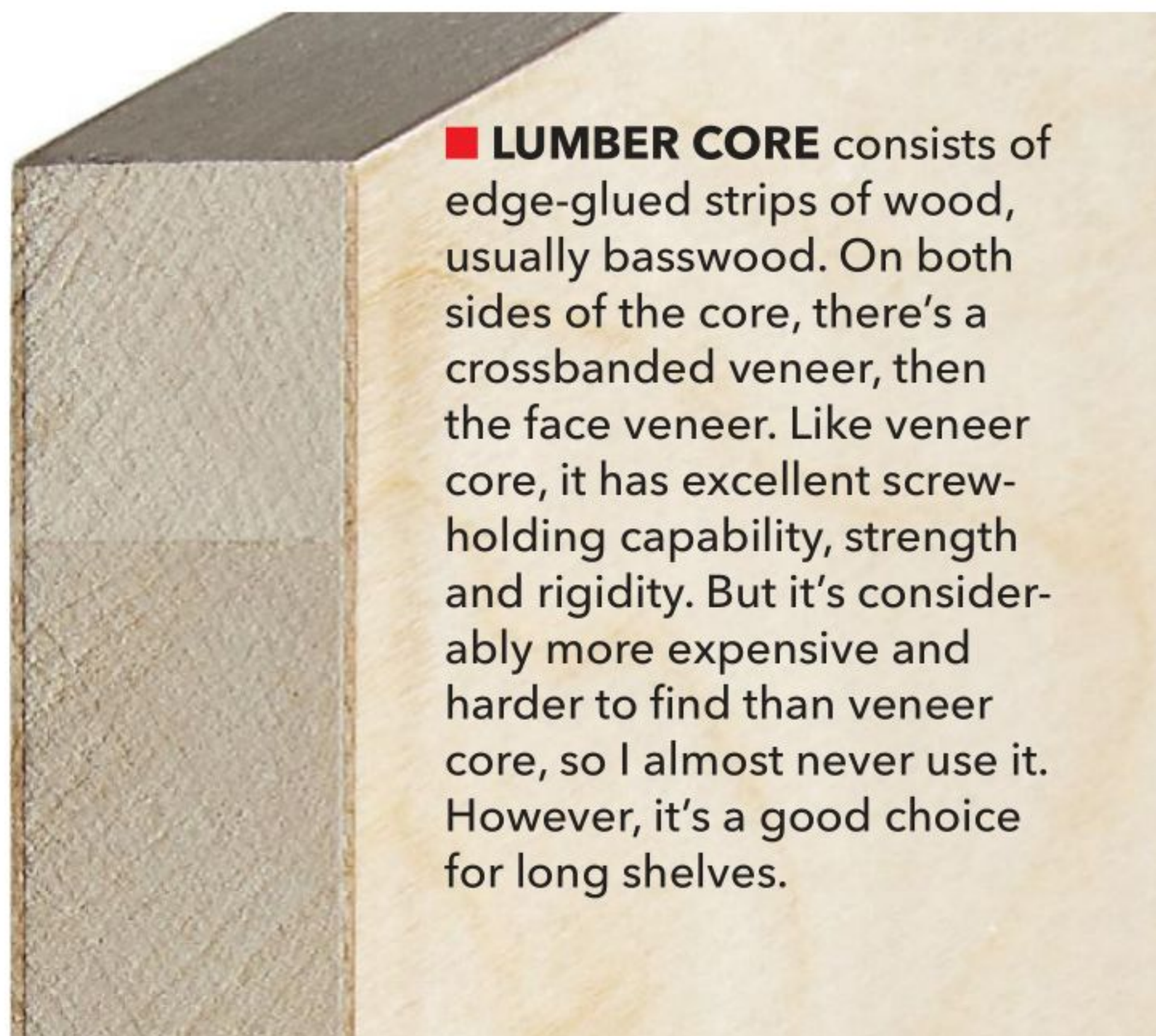
■ **MDF CORE** has a few advantages over veneer core. The thickness is more consistent, and MDF gives a smooth, even surface for the face veneer. It's also more stable and it's typically flatter. However, MDF core isn't as strong as veneer core, it doesn't hold fasteners as well and it's heavy. But if I'm making one-piece doors, I'll choose MDF core every time because of its flatness and stability.



■ **PARTICLEBOARD CORE** is the least expensive option. Like MDF core, it's flat and stable with consistent thickness. But particleboard core is a bit worse in the screw-holding category. Also, it's a special-order product, at least from my lumberyard, whereas MDF core is readily available.



■ **COMBINATION CORE** weds the best attributes of MDF core and veneer core. The center cores are crossbanded hardwood, providing strength, light weight and screw-holding capability. The outer cores are MDF, giving a flat, uniform surface for the face veneers. However, combination core is a compromise: It doesn't have the screw-holding capability and rigidity of veneer core, or the flatness and stability of MDF core.



■ **LUMBER CORE** consists of edge-glued strips of wood, usually basswood. On both sides of the core, there's a crossbanded veneer, then the face veneer. Like veneer core, it has excellent screw-holding capability, strength and rigidity. But it's considerably more expensive and harder to find than veneer core, so I almost never use it. However, it's a good choice for long shelves.



■ **BALTIC BIRCH AND APPLEPLY** are top-notch veneer core plywoods, which you'll only find at a lumberyard. Their 1/16-in.-thick core veneers offer better stability than typical plywood with 1/8-in.-thick core veneers. The raw edge is attractive when finished and often used as a design element. Baltic birch or ApplePly is my first choice for drawers and shop jigs. ApplePly is available in thicknesses from 1/4 in. to 1-1/2 in., and in many face veneer species.

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Best Pro Tips

Expert advice from the job site. By Brad Holden

FIRE BLOCKING BASICS

Holes and gaps in wall and ceiling cavities allow a fire to spread rapidly. They also allow airflow, which feeds a fire. Sealing these gaps slows or may even stop the spread of flames, smoke and gases.

Fire blocking aims to prevent or at least slow the vertical movement of flames, smoke and gases by sealing off concealed spaces like stud cavities and soffits. Smoke and gases readily travel horizontally as well, so preventing horizontal air movement, such as within a dropped ceiling, has its own name: draft stopping.

Code requirements for adding fire blocking and draft stopping apply mainly to new construction. But if you're finishing a basement, putting on an addition, remodeling a room, or just running pipes or wires through a plate, you'll need to include fire blocking.

We'll show you the most common fire blocking applications on the following pages so you can apply the principles to your project.

THE PROBLEM

Flames spread easily through holes and gaps in wall or ceiling cavities. The airflow through the gaps adds more oxygen to feed the fire.

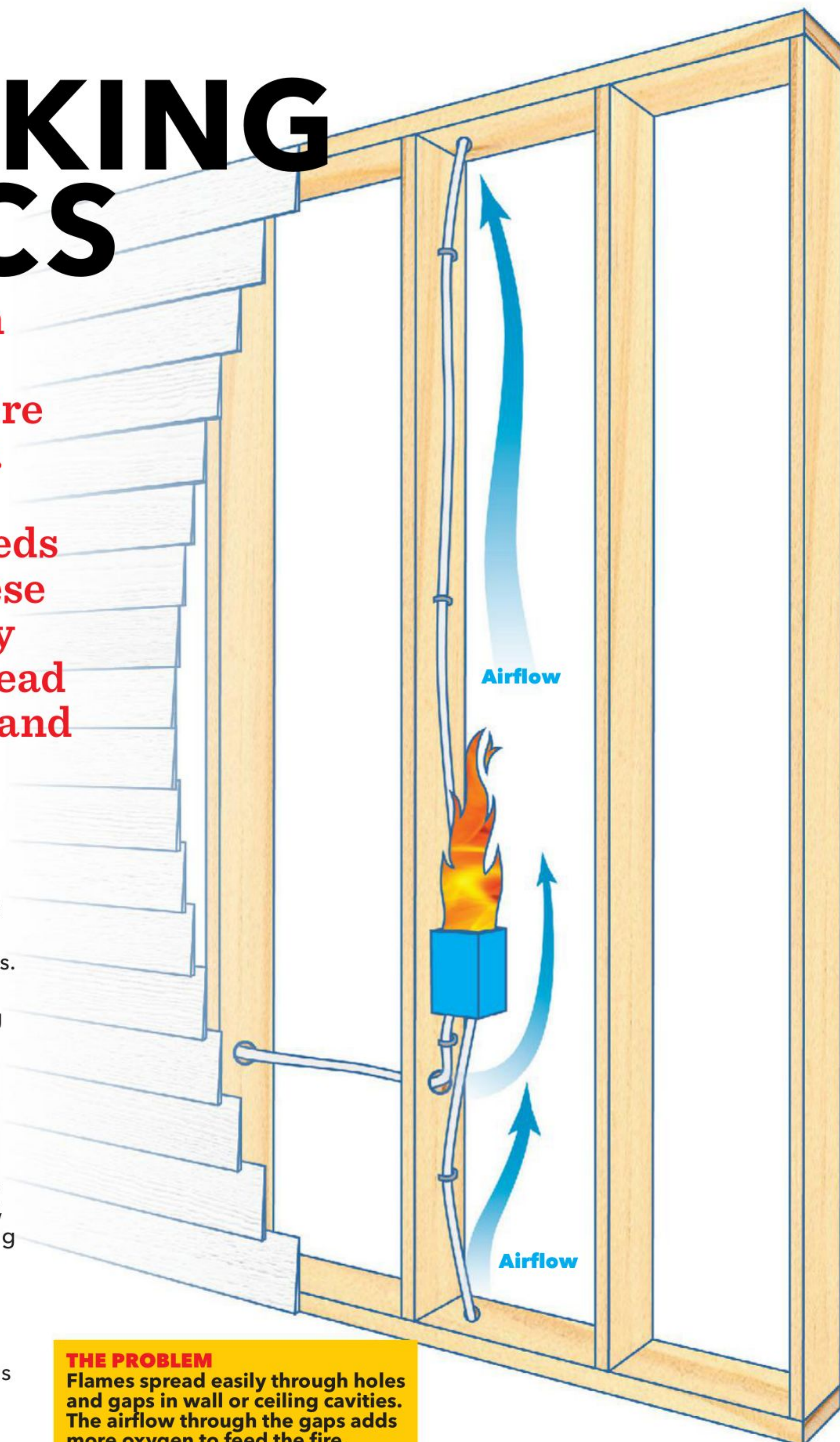
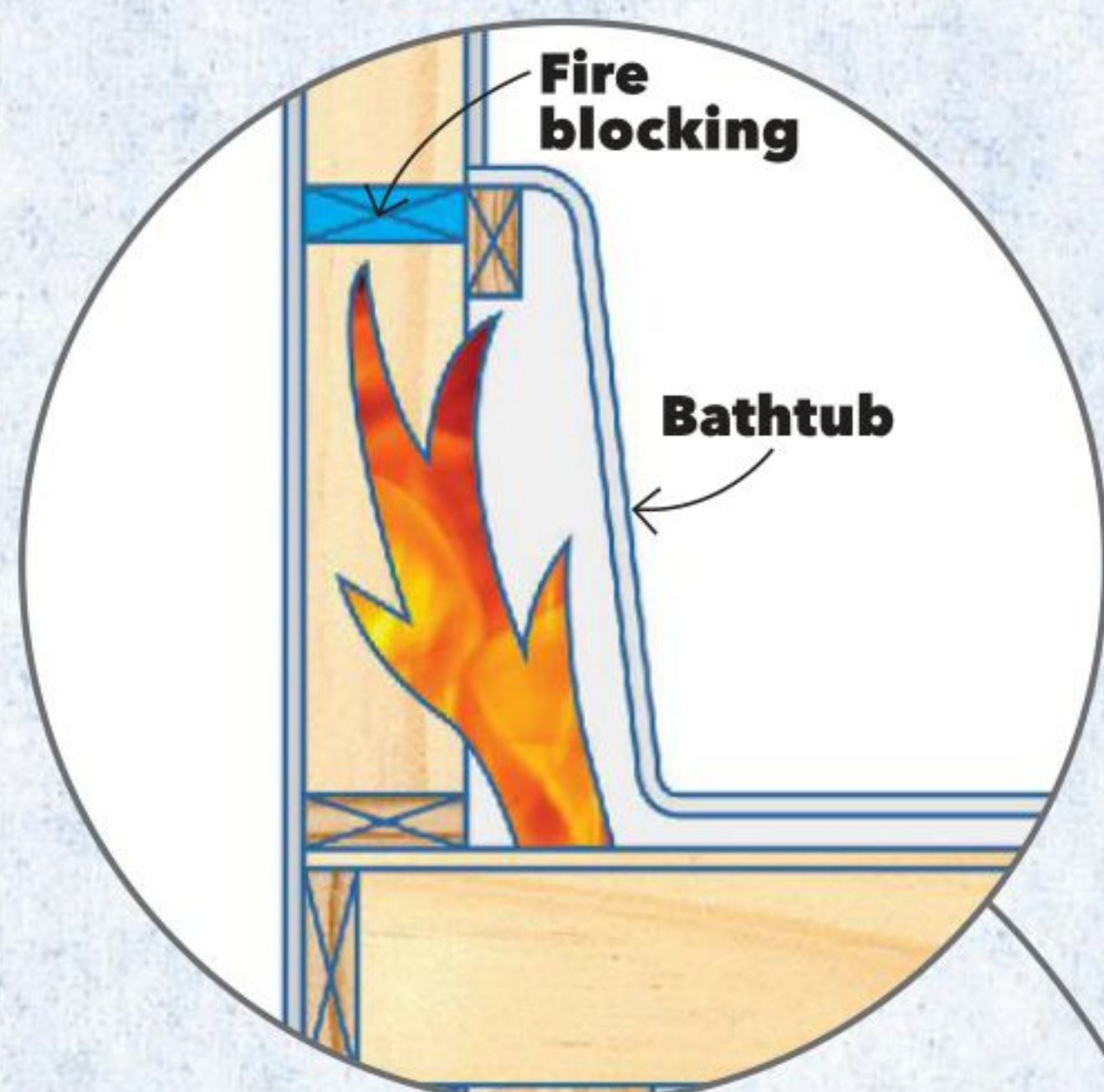
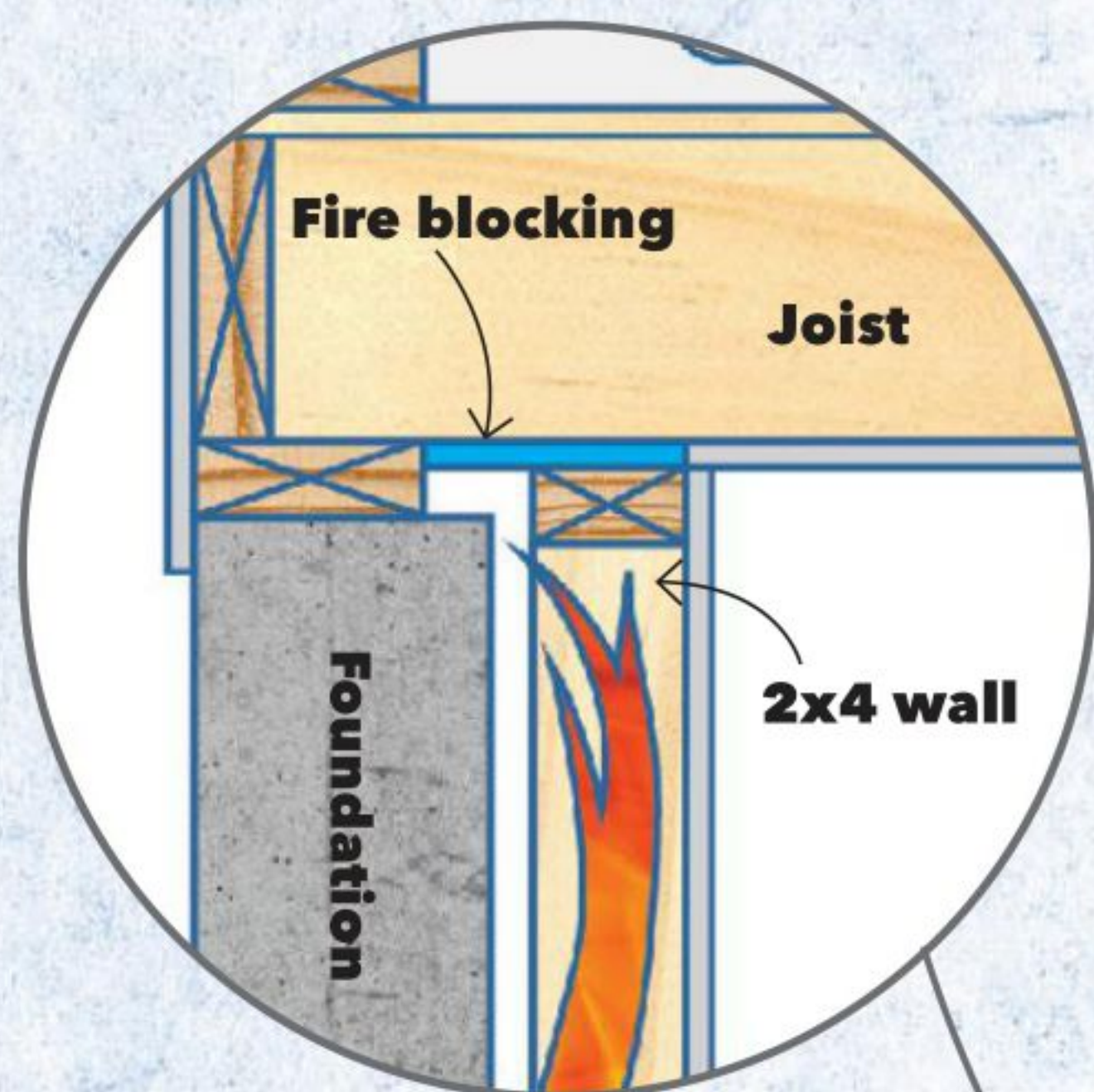


Figure A Whole-House Fire Blocking



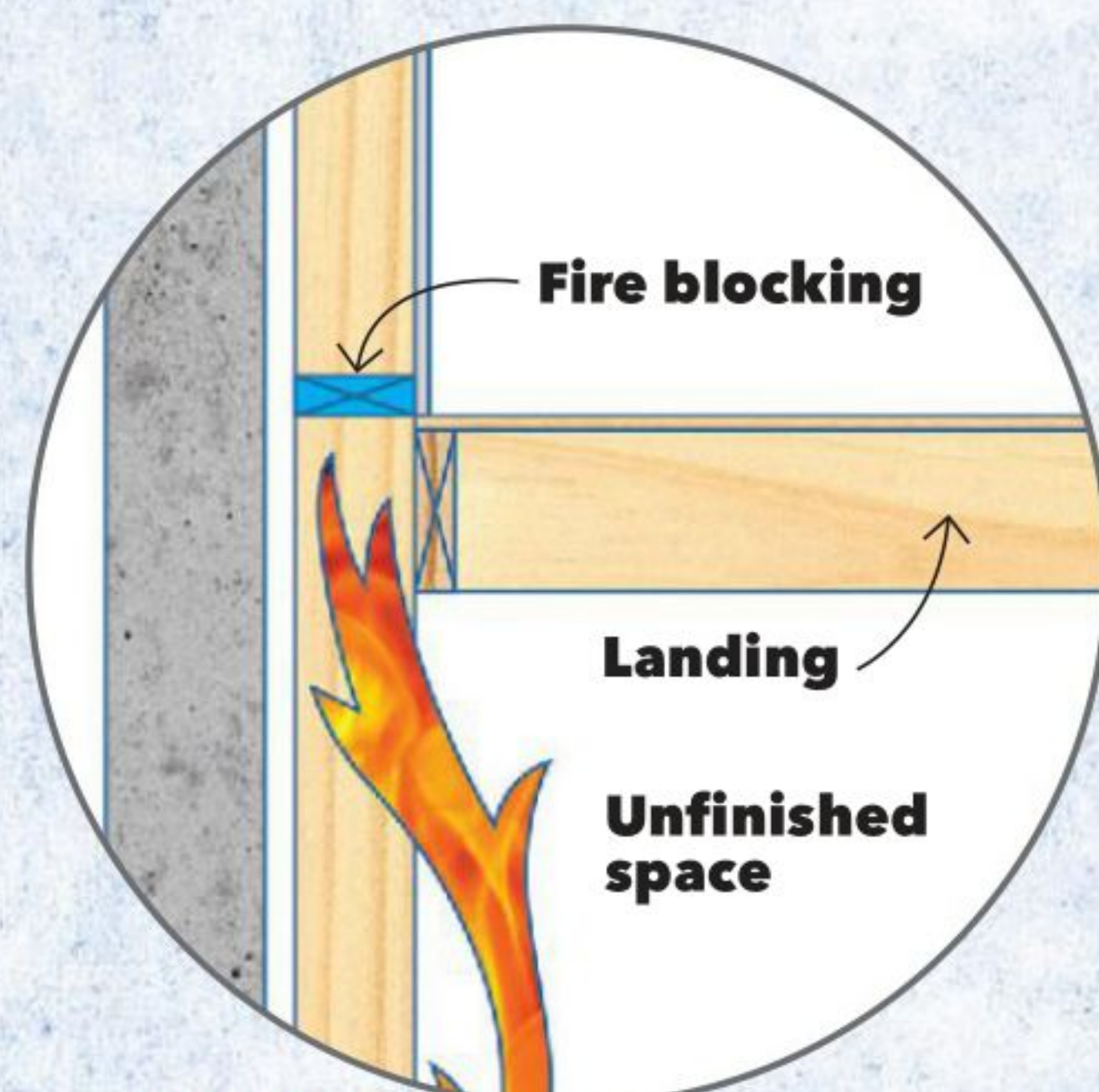
DROP-IN TUBS

If the wall behind a drop-in bathtub is finished, no blocking is required. If the wall isn't finished, install 2-by material between the studs, flush with the top of the tub. Insulation batting in the wall extending at least 16 in. above the tub is also sufficient.



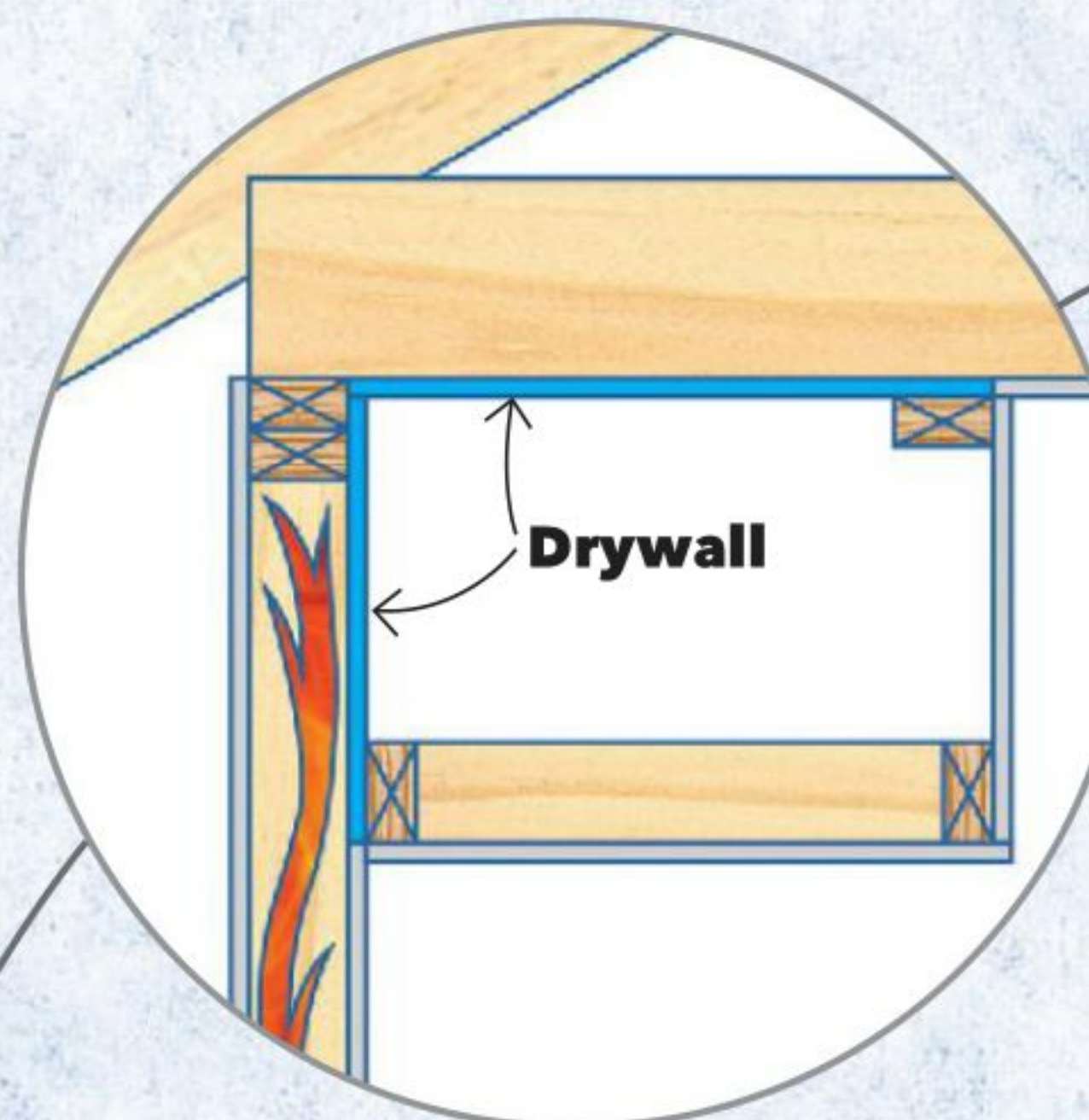
BASEMENT WALLS

The gap behind a 2x4 wall has to be sealed off from the joist bays above the wall.



LANDING

Install blocking in stud cavities above a landing over an unfinished space.

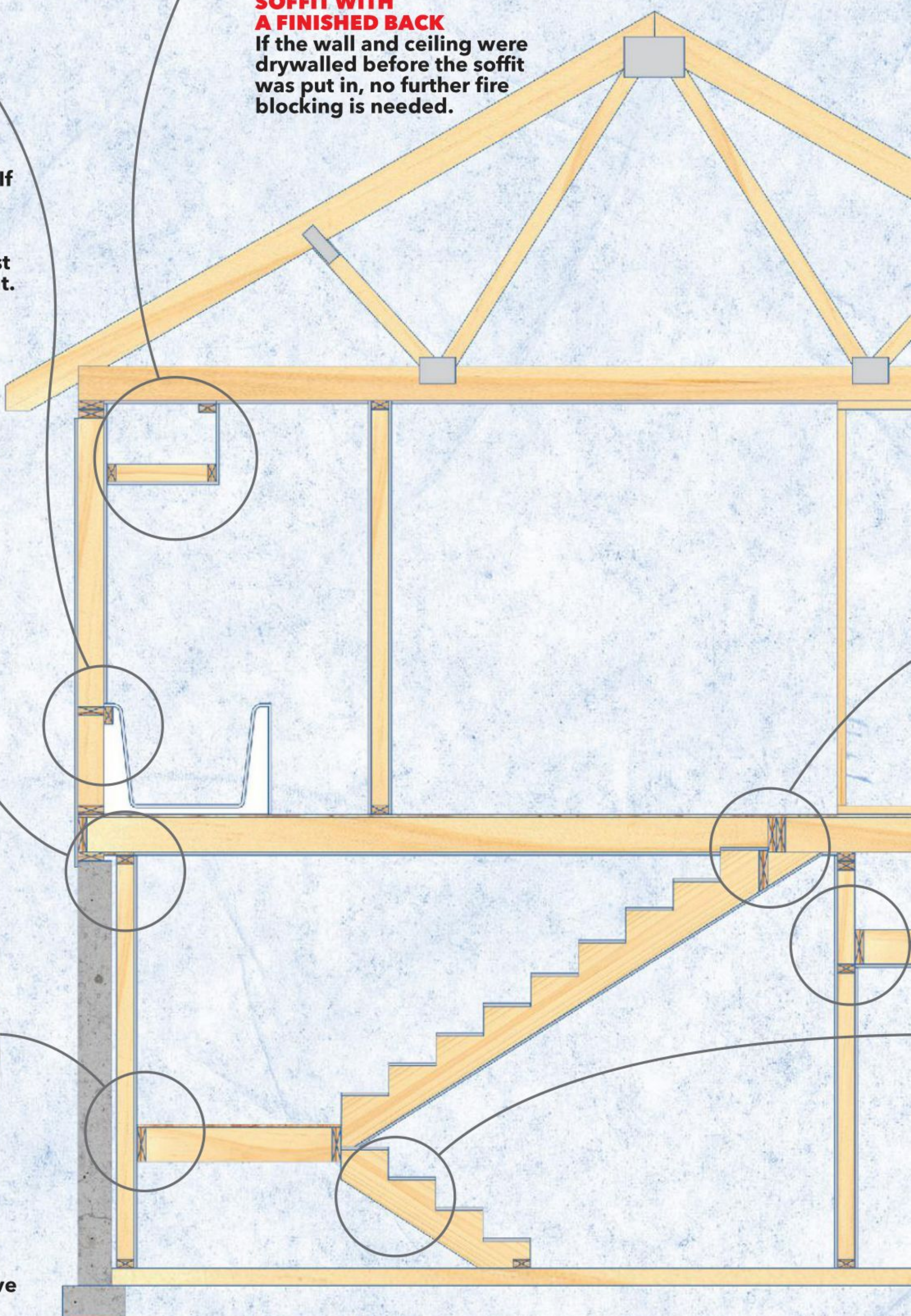


SOFFITS

Soffits provide an easy path to floor and ceiling joist bays if they're not fire blocked. Without a soffit, the top plate provides the fire blocking.

SOFFIT WITH A FINISHED BACK

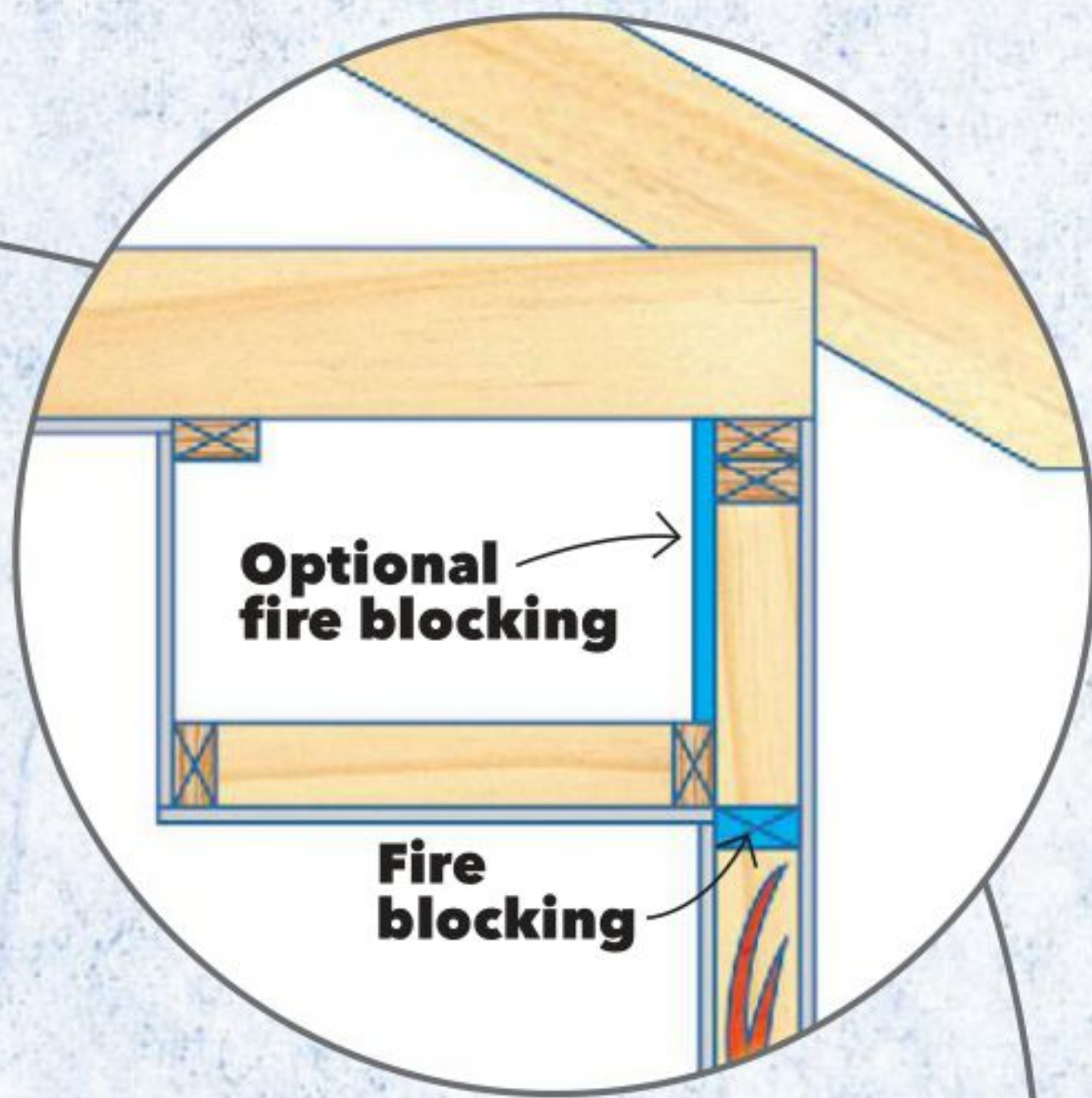
If the wall and ceiling were drywalled before the soffit was put in, no further fire blocking is needed.



Materials for fire blocking

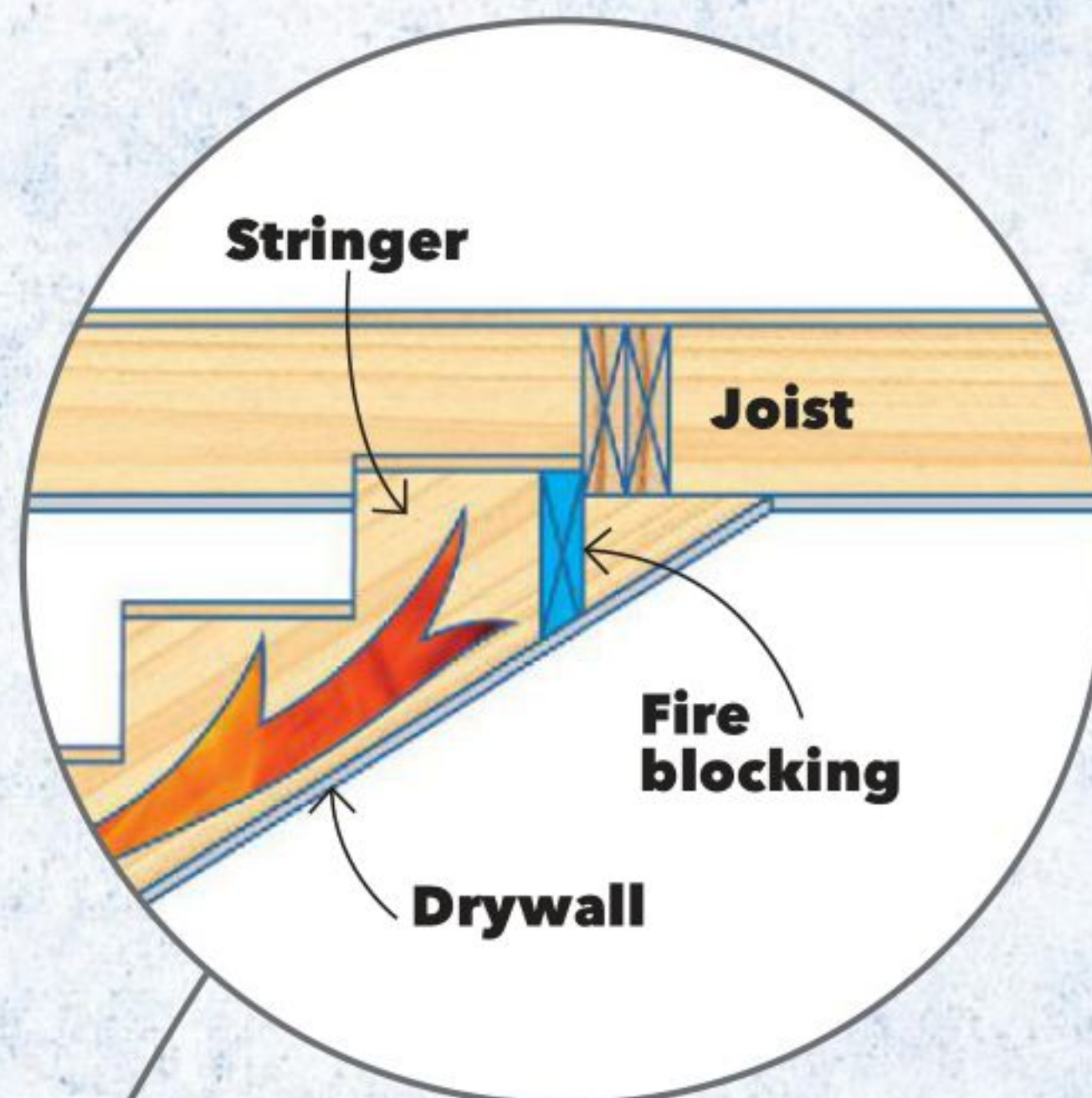
Materials approved for fire blocking are just common building materials.

- 2-by (1-1/2 in. thick) lumber.
- Two layers of 1-by lumber.
- One layer of 3/4-in. plywood with 3/4-in. plywood covering any seams.
- One layer of 3/4-in. particle-board with 3/4-in. particle-board covering any seams.
- 1/2-in. drywall.
- 1/4-in. cement board.
- Batts or blankets of mineral wool or fiberglass insulation secured in place.
- Cellulose insulation installed as tested for the specific application.
- Approved spray foams and caulks.



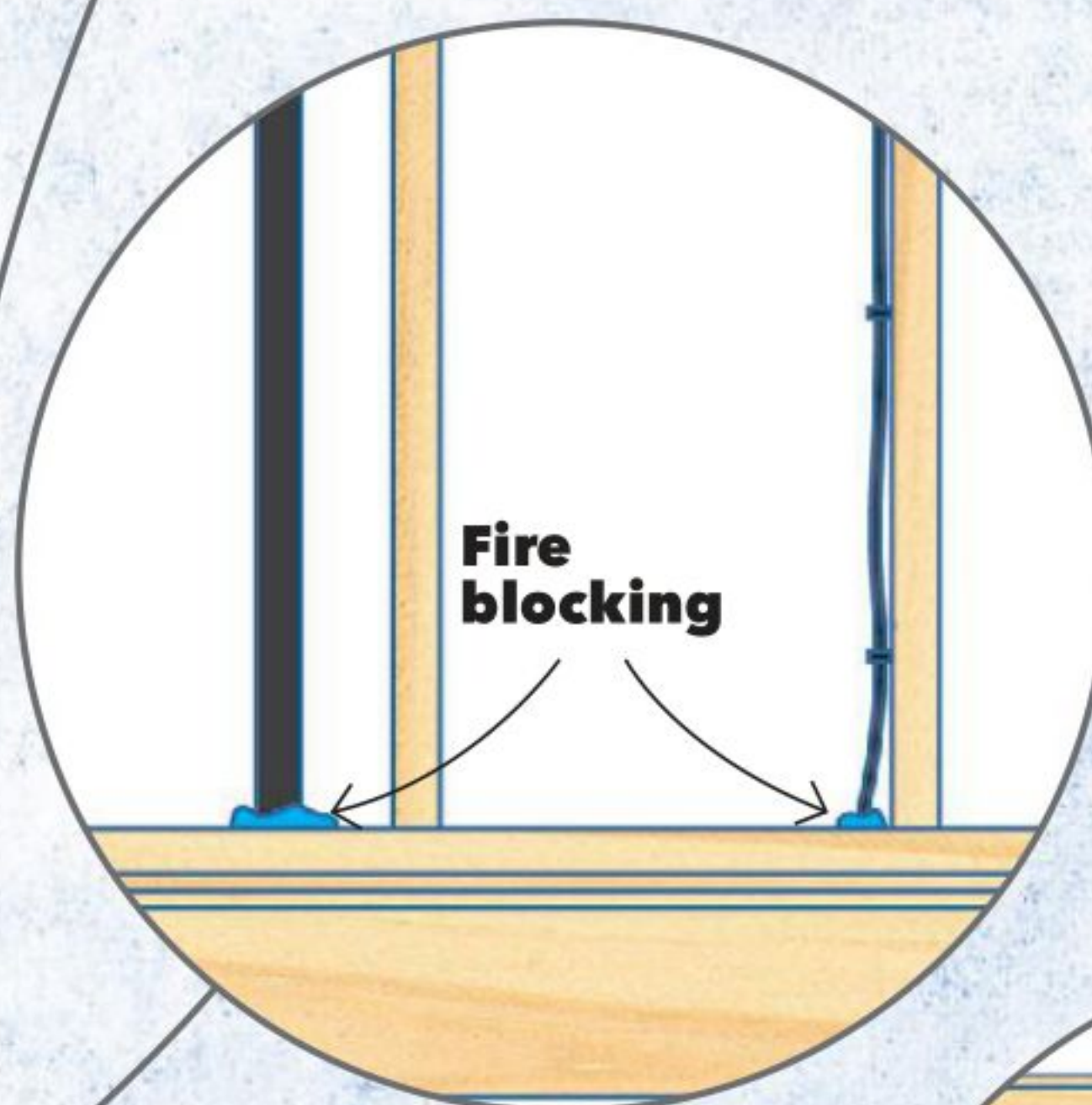
SOFFIT WITH AN UNFINISHED BACK

Block off the stud bays at the base of the soffit with 2-by material. Or install 2-by blocking or approved sheathing along the back of the soffit.



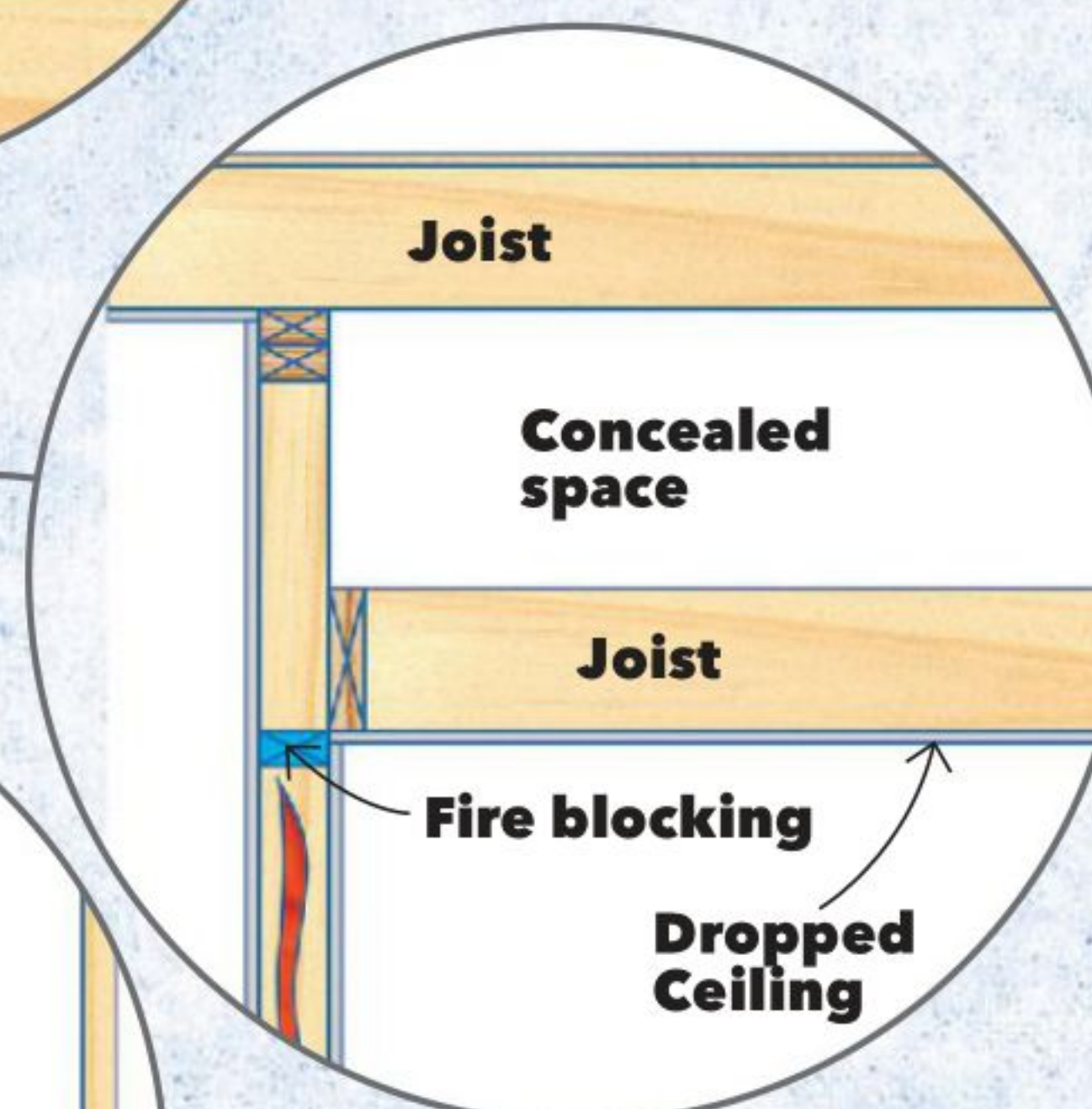
STRINGERS

Install 2-by blocking between stair stringers to prevent fire from entering the joist bays. Cover the underside of stair stringers with drywall.



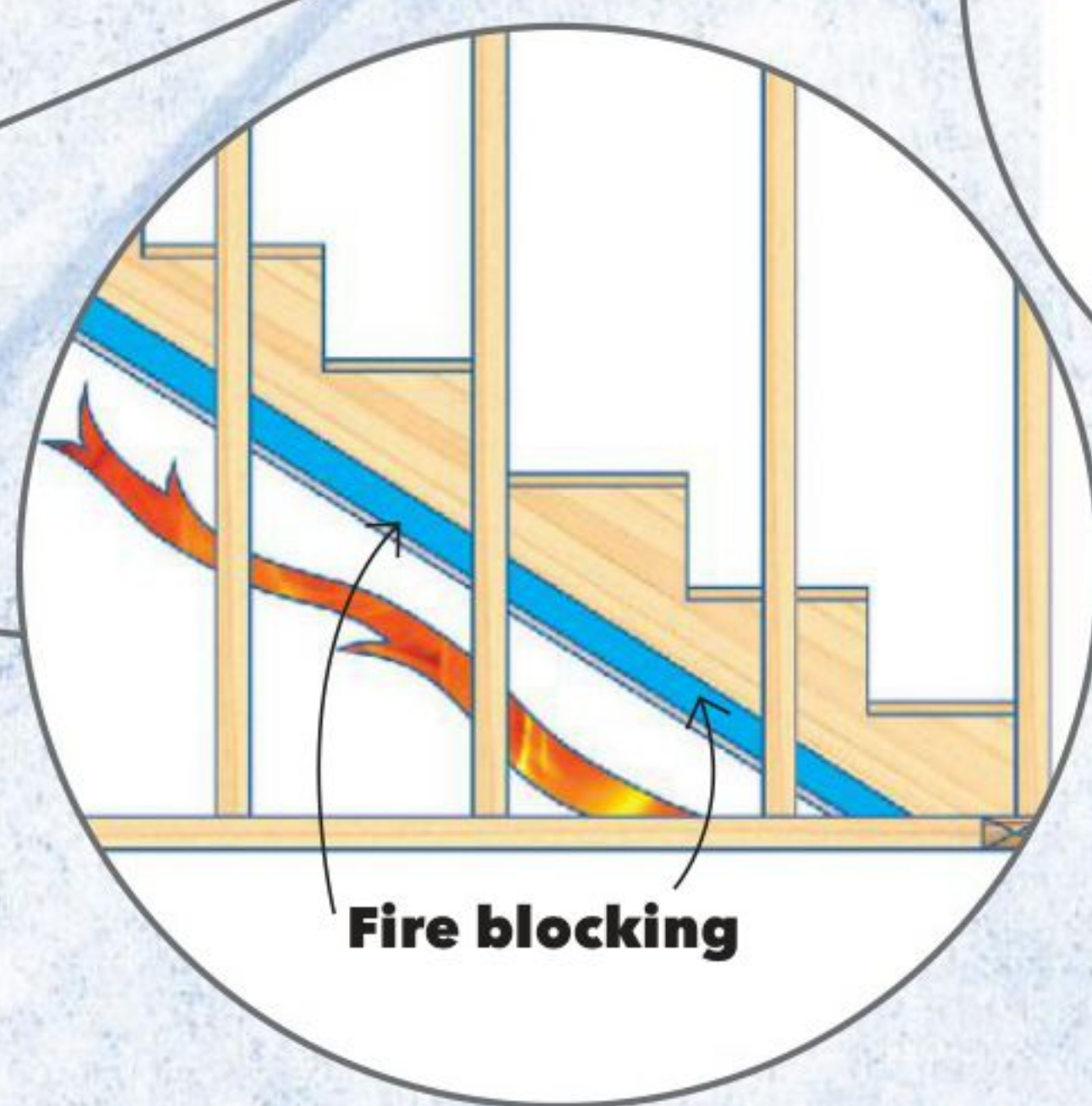
PLUMBING AND ELECTRICAL

Where plumbing pipes or electric cables pass through wall plates, fill any resulting gaps with an approved fire-blocking material.



CONCEALED SPACES

A dropped ceiling needs fire blocking where the joists meet the wall.



STAIRS ABOVE UNFINISHED SPACE

Angle-cut 2-by fire blocking to fit between the studs on the outside of the stair stringers.

MEET THE EXPERT



Don Sivigny, with decades of experience as a construction manager, contractor, inspector and code educator, has seen his fair share of framing errors and code violations.

BEST PRO TIPS

Materials for draft stopping

Draft stopping prevents the horizontal movement of smoke and gases by limiting concealed spaces to 1,000 sq. ft. or less.

- Minimum 1/2-in. drywall.
- Minimum 3/8-in. structural panels such as plywood or oriented strand board (OSB).

Joist

Drywall

FLOOR JOISTS

If ceiling finish material is attached directly to the joists, no further draft stopping is necessary, as the joist bays are likely less than 1,000 sq. ft.

Draft stopping

Truss joist

TRUSS-STYLE JOISTS

If ceiling finish material is applied to truss-style joists, apply draft-stopping material to cover only enough trusses to limit unfinished concealed spaces to less than 1,000 sq. ft.

Draft stopping

Dropped ceiling

DROPPED CEILING

Install draft-stopping material to limit unfinished concealed spaces to less than 1,000 sq. ft.

FINISHED BASEMENT

Break up the space behind the studs into smaller compartments with full-height pressure-treated 2x4s sistered to a stud every 10 ft.

Draft stopping

Foundation

Studs

Drywall

Foundation wall shown in cross section from above.

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GAME DAY SHED

A wide-open design perfect for work and play
By Jeff Gorton

The large door opening on this shed gives you expandable indoor-outdoor space. Just open the overhead door so your party can spread onto the patio. Or roll your workbench outside during dusty jobs. And if storage is what you need, you can't beat the easy-access convenience of a big door.

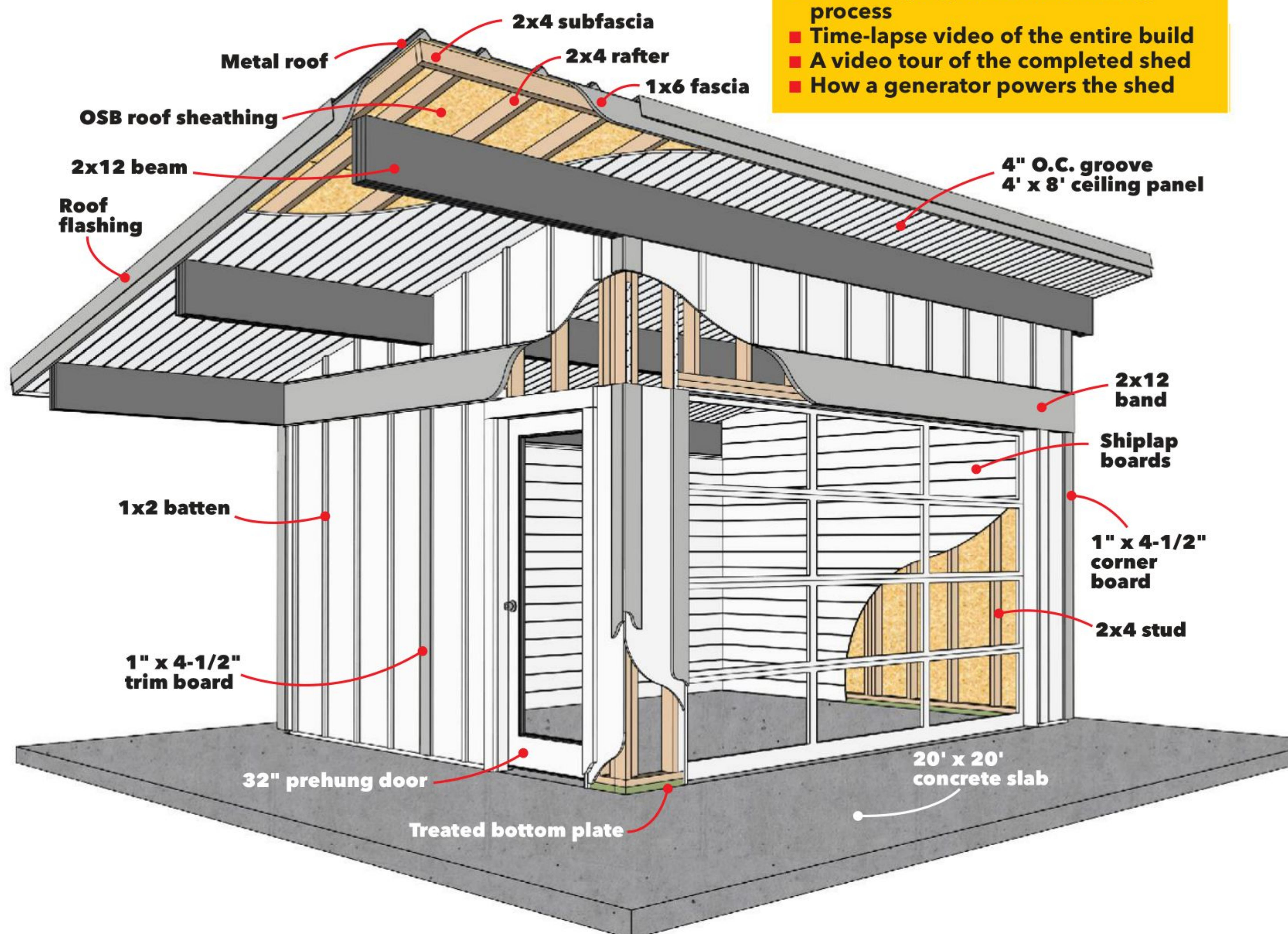
Aside from the large beams and heavy roof panels that require a bit of muscle to hoist up, the simple design and plain detailing on this shed make it relatively easy to build. Our online plans provide all the information you need to reproduce this shed exactly, or you can modify the plans to suit your needs. For example, it would be easy to build the front wall to accommodate windows instead of the garage door.

LANDSCAPE DESIGN: KATHIE NEWBERRY, NEWBERRYLANDSCAPE.COM

Figure A Shed

OVERALL DIMENSIONS:

15' 9" Deep x 20' 1-1/2" Wide x 11' 4" Tall



GET MORE AT:

gamedayshed.familyhandyman.com

- Downloadable, detailed plans
- Video highlights of the building process
- Time-lapse video of the entire build
- A video tour of the completed shed
- How a generator powers the shed

Tools, time and materials

Most of the materials for this shed are available at home centers. We special-ordered the 2x12 beam material, the LP SmartSide panels and the outswinging doors for the storage locker.

As shown, this shed could cost you \$16,000 or more. But there are ways to cut costs. Our bill for standard materials like lumber, siding, doors and paint was less than \$6,000. Hiring contractors to provide and install a concrete slab (\$5,000) and a metal roof (\$3,000) drove up the bill. If you want to tackle these jobs yourself, get information by searching familyhandyman.com. A glass garage door costs about \$4,500.

Expect to spend a weekend building the walls, and then about 10 or 15 more days to finish construction. You'll need strong helpers if you plan to prebuild the roof panels as we did, and to help lift the beams into place.

Check with your local building department to see if a permit is required to build this shed. Call 811 to locate buried utility lines a few days before you dig.

Pour the slab

We built our shed on a 20 x 20-ft. concrete slab (**Figure B** online), but you could substitute a wood foundation. If you want to pour your own slab, start by placing forms for the 12 x 14-ft. footprint and pouring the concrete. Then if you want

the concrete to extend beyond the edges of the shed as ours does, build another set of forms and pour this section with a slight slope to the outside for drainage. For more on pouring a slab, search for "concrete" at familyhandyman.com.

Build the roof panels

To save time, we built the roof framing in two 10 x 16-ft. sections (**Figures G** and **H** online and **Photo 1**). The resulting panels required a crew of six to hoist onto the roof (**Photo 9**). If you build your roof like this, take extra care to make

Products were installed by *The Family Handyman* independent of LP Building Products Application Instructions.

sure the two sections are exactly the right size and perfectly square before you install the ceiling material.

Start by cutting the rafters and top and bottom subfascias to length. Then mark the rafter locations on the subfascias using **Figure G** (online) and **Photo 1** as a guide. Nail the subfascias to the rafters and square the assembly. Rest the frames on 2x12s and tack them down to hold them square while you install the ceiling panels. After assembling the two frames, connect them with temporary cleats to create the 20 x 16-ft. roof. Next, install the grooved LP SmartSide panels that will become the shed ceiling (**Figure H** online). Start the panel installation along the center seam, carefully aligning the edge of the panels with the intersection of the two frames. Then work out in both directions.



WHY START WITH THE ROOF?
A concrete slab is the perfect surface for assembling the roof panels. So we built the panels before we framed the walls on the slab.

1. BUILD THE ROOF

Nail the subfascias to the rafters. Measure diagonally from opposite corners to square the frame. Tack the corners to the 2x12 to hold the frame square. Build and square the second roof frame.



OPTIONAL OUT-BACK STORAGE

We added a lockable, critter-proof storage locker with double doors, as well as two tall, narrow spaces that are just right for storing firewood, lawn furniture or gardening equipment. If you choose this option, you won't regret it!





2. BUILD AND STAND THE WALLS

Stand and brace the front wall. Then build the side walls and stand them up. Nail the corners together. Then anchor the walls with concrete anchors, making sure to keep the bottom plates aligned with the chalk line.



3. PLUMB AND BRACE THE CORNERS

Hold a long level against the corner and push or pull the wall until the corner is perfectly plumb. Screw a diagonal brace to the inside of the wall to hold it plumb. Repeat this on all four walls.

Doing it this way ensures that the seam between the two roof panels will align properly when you connect the panels on the roof.

If you don't have access to a crew, build the roof in a more conventional manner. To do that, get the beams up, then build the roof frame over them. Then cut the ceiling panels to fit around the beams.

Build the walls

After you assemble the roof panels and set them aside, it's time to build and stand the walls. But first, snap chalk lines on the slab to locate the outside edge of the walls. Using **Figure B** as a guide, mark the four corners of the shed on the slab. Measure diagonally from opposite corners. The two diagonal measurements should be equal. If not, adjust the marks until they are. Then snap chalk lines.

Using dimensions from **Figures C, D and E** (online), cut the wall plates to length and mark the stud locations on them. Cut the studs to length and nail the walls together by driving two 16d nails through the plates into each stud. Because the siding material must be held 1 in. above the slab, we added a treated bottom plate for better nailing support at the bottom of the siding panels. Add this plate after you build the walls.

Build and stand the front and back walls, using temporary braces to hold them up. Then build and stand the two side walls (**Photo 2**). Nail the corners together. Then line up the outside edges of the walls with the chalk lines and drill holes for anchor bolts.

Check that the top plates of the walls are straight and level. If they're not, drive plastic or treated lumber shims under the plates to correct for irregularities in the slab before you tighten the nuts on the anchor bolts. Finally, use a long level to plumb the corners and a temporary diagonal 2x4 to hold them plumb until after the siding panels are installed (**Photo 3**).

Assemble the beams

The 2x12s for your beams will most likely be slightly longer than 20 ft., allowing you to cut the ends



4. ASSEMBLE THE BEAMS

Screw temporary support blocks to 2x4 spacers. Rest the first 2x12 against the supports, making sure it overhangs 5 ft. Add the next 2x12 and nail it to the first one. Complete the beam by nailing the third 2x12 to the first two.

perfectly square. Use a framing square to mark the cuts, and cut all nine 2x12s to exactly 20 ft. long. You'll install the front and back beams first, and use them as a reference for aligning the center beam. The front and back beams overhang the top plate 1-1/2 in. to provide a nice reveal after the siding and trim are installed (**Figure F** online).

To help hold the beams in the

right spot while we installed them, we nailed temporary beam braces to 2x4 spacers at the corners and middle of the front and back walls (visible in **Photo 4**). To avoid having to hoist a heavy beam into place, we lifted the 2x12s into place one at a time and nailed them together while they were in their final position.

Nail the three 2x12s together, making sure to keep the edges



5. MEASURE FOR THE BEAM POST

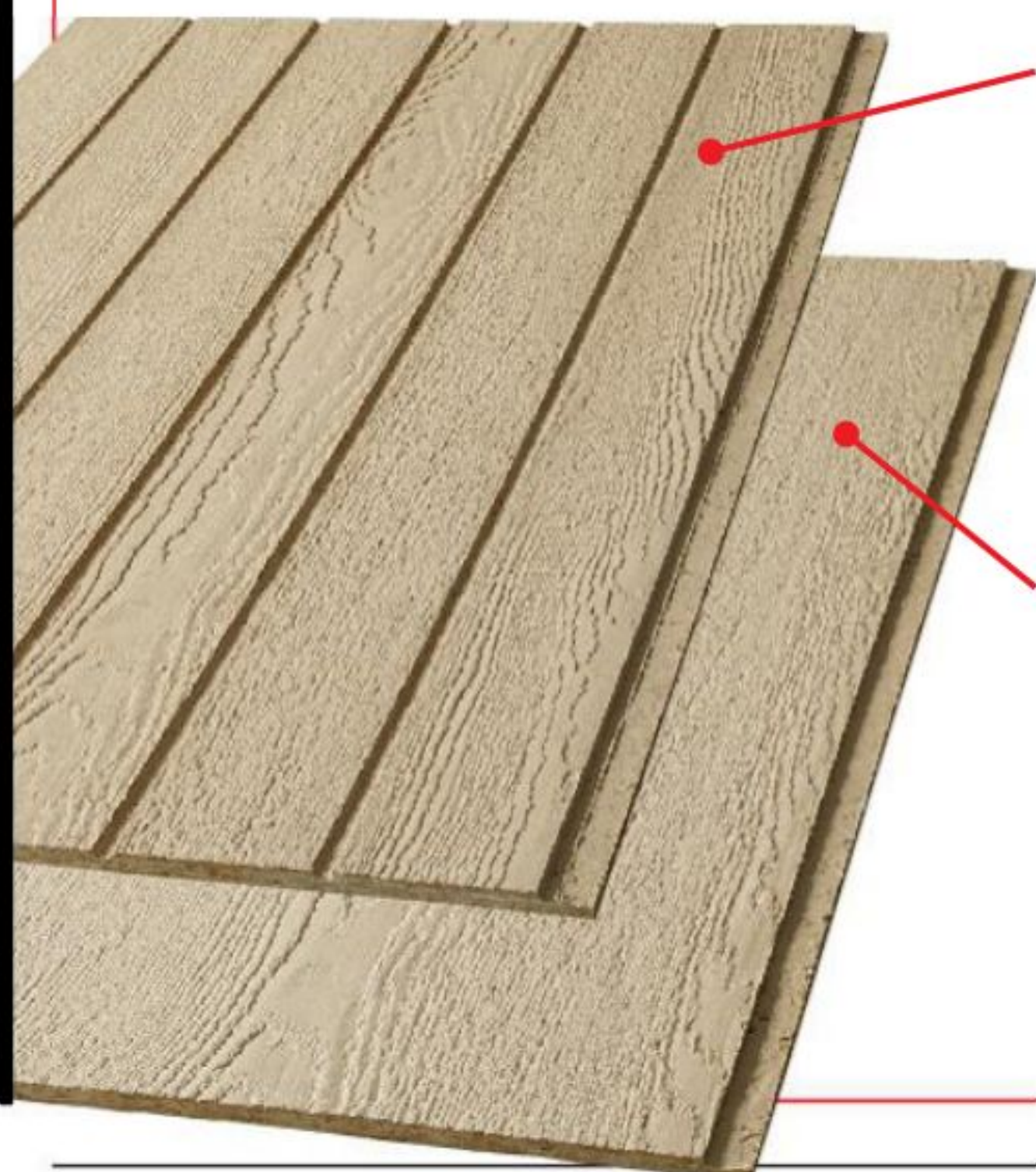
Choose a straight 2x4 and attach it on edge to the front and back beams. Hold a scrap of the 2x12 material against this 2x4 and measure from the top plate to the bottom of the 2x12 scrap to determine the height of the center post.

aligned. Mark the assembled beams 5 ft. from the end on the side with the large overhang. Then press the assembled beams against the beam braces, line up the 5-ft. mark with the outside edge of the wall, and secure the beams by driving 4-in. structural screws through the top plate into the beams.

The next step is to determine the height of the center beam. **Photo 5** shows the setup and how to

LONG-LASTING EXTERIOR

We used several kinds of engineered wood products from LP Building Products on this shed, ranging from roof sheathing to trim. For more information on all LP products, visit LPshed.com.

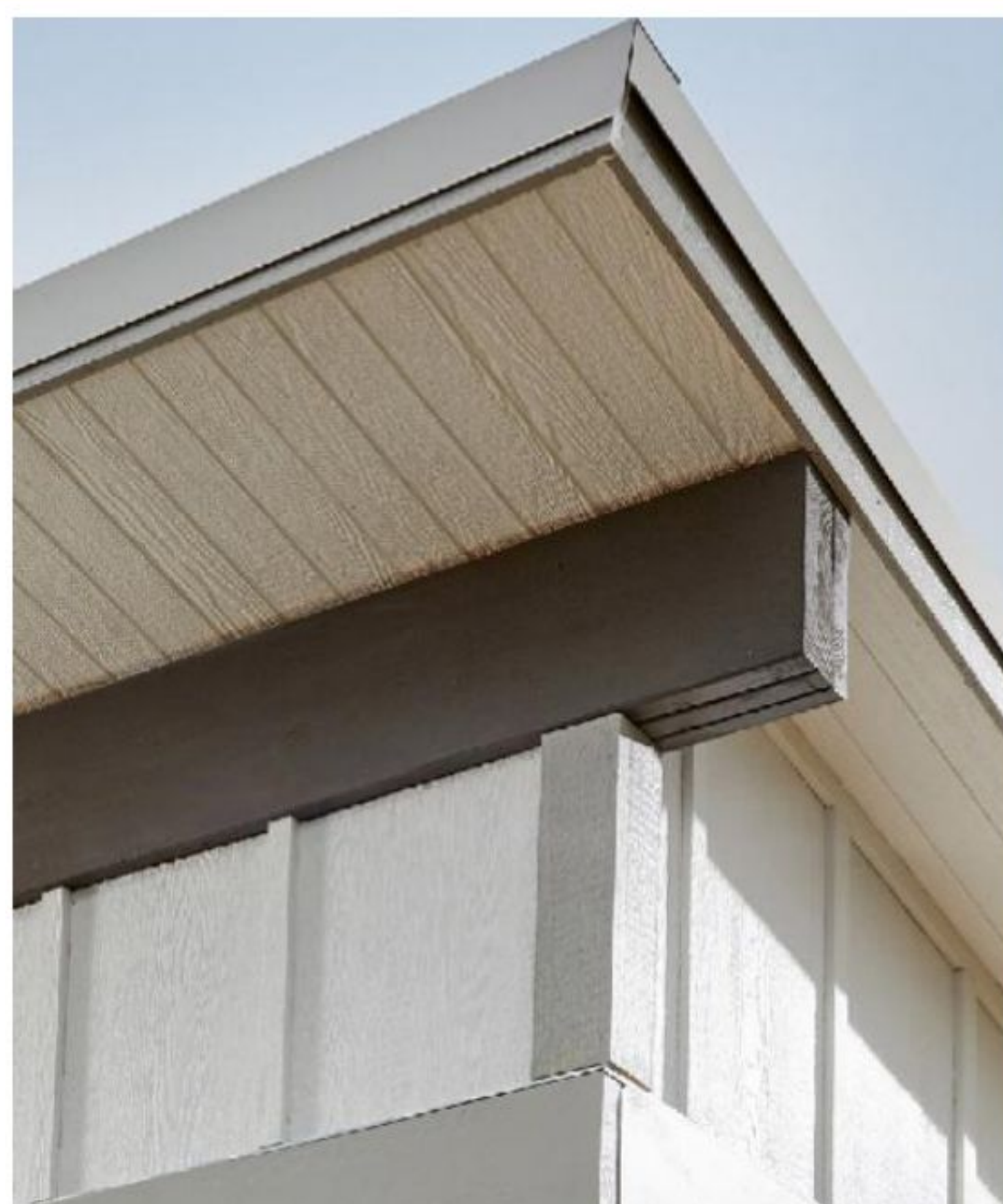


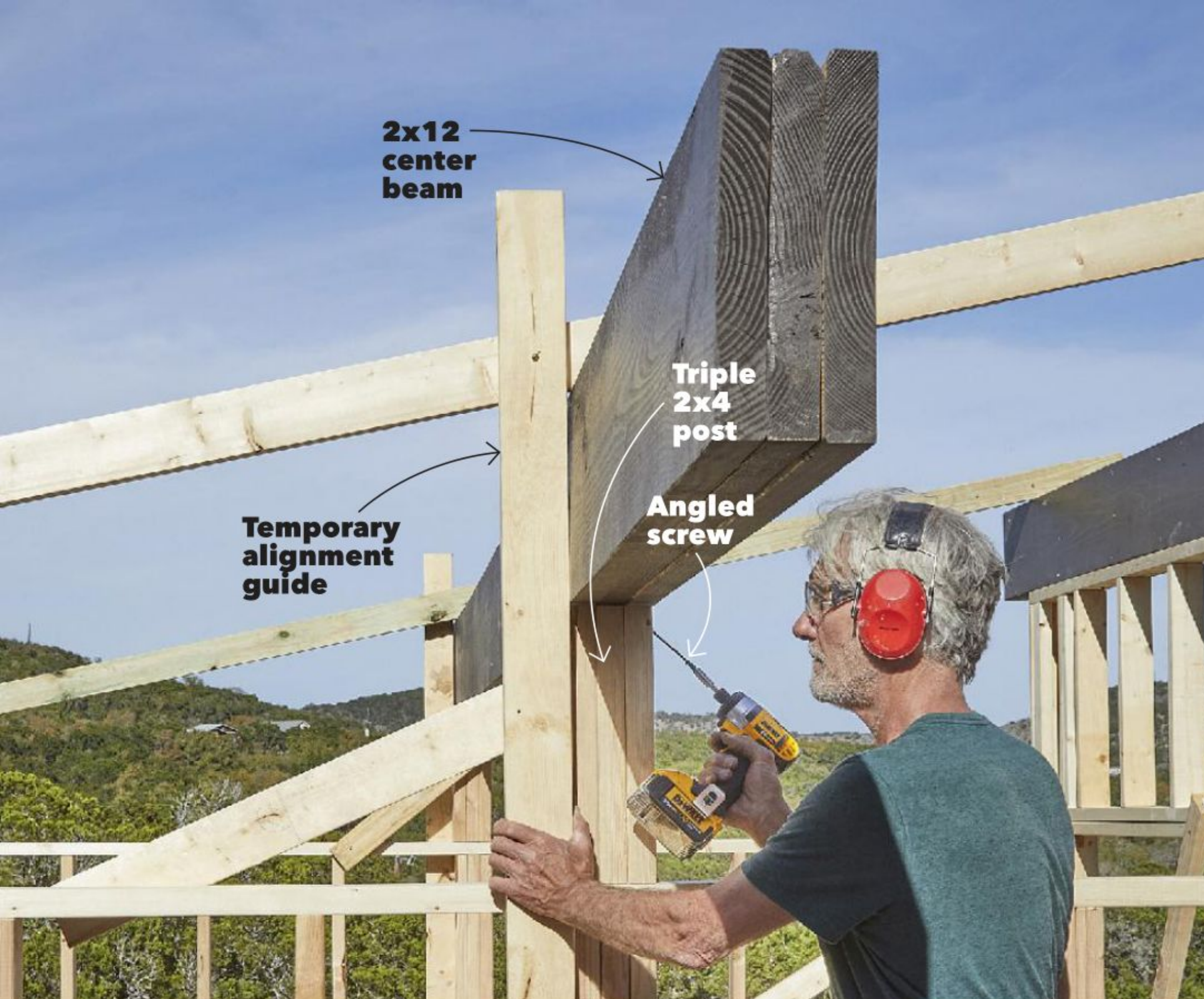
LP SMARTSIDE GROOVED PANEL SIDING

We covered the shed ceiling and exterior soffits with a grooved version of Cedar Texture siding panels. The panels are available in different thicknesses, and with grooves 4 in. or 8 in. on center.

LP SMARTSIDE NO-GROOVE PANEL SIDING

We used no-groove Cedar Texture siding panels for the exterior siding. Covered with battens, these panels give the appearance of board and batten siding at a fraction of the cost of the solid lumber alternative.





6. ANCHOR THE CENTER BEAM
After cutting and installing the short, triple 2x4 posts on each end, build the center beam in place. Then screw through the posts into the beam to hold it in place.



7. COMPLETE THE WALL FRAMING
Nail the short studs to the plates to complete the framing on the upper part of the side walls.

measure for the triple 2x4 post that supports the center beam.

Here's another tip: Nail a 10-ft. 2x4 vertically to the top and bottom plates of the end walls, aligning one edge with the downhill side of the triple stud (beam post). This temporary 2x4 will support the center beam as you tip it up into position, and provide a guide for positioning the short triple beam post (visible in **Photo 6**). Build the center beam and mark as you did for the front and back beams. Lift it onto the posts and attach it (**Photo 6**).

Complete the side wall

Cut 12-degree bevels on the ends of the angled top plates, fitting them between the beams and lined up with the temporary 2x4. Anchor the ends of the plates. Then mark the stud positions. Measure for the studs, cut them to length with a 12-degree bevel on one end and nail them into place (**Photo 7**).

Install the siding and band

Cut the siding for the lower wall sections to 83 in. long. Then cut a panel 2 ft. wide and use this half sheet to start the siding on the end wall (**Figure J** online). Use the other half of the sheet to finish the same wall. Rest the sheets on 1-in. blocks while you nail them to the studs. Use 2-in. hot-dipped galvanized siding nails to install the siding and trim. Make sure the top edge of each sheet is aligned 1/8 in. below the top plates to allow room for the drip cap flashing between the beam and the siding (**Figure L** online).

When you've completed the siding on the lower part of the walls, nail the 1-1/2-in. metal drip cap flashing to the studs to cover the top edge of the siding. Then screw the 2x12 bands to the studs (**Photo 8**) and cover the top with another piece of metal drip cap (**Figure L** online). Finally, cut and install the siding that goes above the 2x12 band.



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8. ADD THE BAND

The first step is to nail a 1-1/2-in. metal drip cap flashing along the top edge of the siding. Then nail the 2x12 band to the studs, keeping it aligned with the back beam.

Add corner boards and battens

The corner boards are 1 in. thick. One is 4-1/2 in. wide and the other is 3-1/2 in. wide. When nailed together, they form a corner that's 4-1/2 in. wide on both faces. The 4-1/2-in. width aligns with the beams to simulate corner posts. Cut the parts for the corners and nail them together. After you seal all the cut ends with paint, nail on the corners (**Photo 12**). Then cut battens, seal the ends and nail them on, centering them over the studs. The wall framing was planned so that the 1x2 battens would look nice when aligned over the studs. See **Figure K** online for trim placement.

Because the LP SmartSide trim must be held 1 in. above the concrete, we used 1x6 boards for the garage doorjamb to avoid the gap at the bottom. If you've followed the plan carefully, you should be able to nail the top garage doorjamb directly to the wall framing, leaving 1/4 in. exposed below the 2x12 band.

Ours didn't work out perfectly, so we shimmed the top jamb down about 1/4 in. to create the reveal.

WATCH IT HAPPEN

To see how we wrestled the huge roof panels into place, watch the video at gamedayshed.familyhandyman.com



9. HOIST THE ROOF PANELS

Round up some strong friends to help lift the roof frame. Tip a frame up and lean it against the back wall. Lift the bottom and push the frame onto the roof. Press with 2x4s to position the frame. When both frames are in place, adjust them until they're even with the beams and the front overhang is 18 in.



SUPER-COOL GARAGE DOOR

This aluminum-framed garage door from Wayne Dalton cost about \$4,500, including installation. These garage doors are custom made for each project, and you can choose from dozens of finishes and glass options. We kept it simple with plain aluminum frames and clear glass. Custom-sized glass garage doors like this are available from several manufacturers. Go online and search for "glass garage doors" to find a dealer.

STORAGE UNIT OR ART STUDIO?



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We also ripped the 1x6 to 4-7/16 in. so the interior edge would be flush with the interior paneling. Nail on the top jamb, then add the sides. Keep the bottom ends of the side jambs about 1/4 in. above the slab to prevent water from soaking into them. Finish the garage door opening with trim boards on each side.

Build the back storage area

The storage area on the back of the shed is optional, but the open sections are a great place to store firewood, and the locker is perfect for lawn equipment and tools. Given that the concrete slab may be sloping in this area, it's easier to build these walls in place than to build them and then fit them in.

Start by marking the position of the treated bottom plates and securing them to the slab with concrete anchors. Use **Figures C** and **M** online as a guide. Plumb up from these plates to locate the top plates. Cut the angled top plates with 12-degree bevels on the ends and nail them to the ceiling. Then cut studs to fit and nail them in. Finally, cover the sides with siding material (**Photo 13**). Cap the ends of the two outside walls with a 5-1/2-in.-wide trim board. Wait until after you've installed the double doors to install the trim over the center walls.

Install the doors

The prehung exterior doors for the side and back of the shed must be installed before you can add the exterior trim pieces on the top and sides of the doors. Go to familyhandyman.com and search for "door installation" to find detailed instructions. After you shim the frames and secure the door frames to the framing with screws, cut the trim to fit on the top and sides.

Finishing up

You can see from the photos that we painted the ceiling panels, beams and wide band before installing them. Then we painted the siding panels before installing the corners and battens. If you do

10. ANCHOR THE ROOF

Drive 8-in. structural screws down through the 2x4 rafters into the beams. Place screws 32 in. apart along each beam.

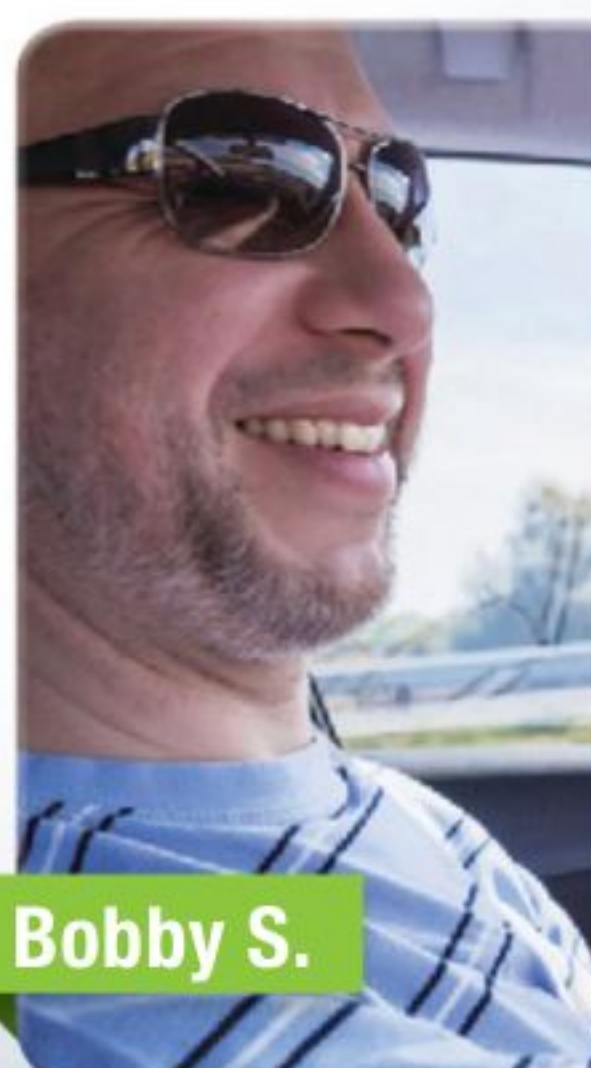


11. INSTALL THE ROOF SHEATHING

Starting with a 6-ft. sheet on one end, nail the sheathing to the rafters. Leave a 1/8-in. space between the sheets to allow for expansion. Start the second row of sheathing with a 2-ft. cutoff from the first row.

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Bobby S.

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12. ADD CORNERS AND TRIM

Cut the corner boards to length and nail them together. Nail the corners to the shed. Cut the battens, center them over the studs and nail them on. Nail a 1x6 fascia to the roof frame.



13. BUILD THE STORAGE LOCKER

Anchor the treated plates to the concrete. Then plumb up to locate the top plates. Fill in the studs and cut the siding panels to fit.

the same, you'll have very little painting left to do after construction is done. We finished up by caulking the spaces between trim boards and touching up scuffs and caulked areas with matching paint.

We finished the interior of the shed with shiplap boards. You'll get a neater job if you finish the interior before the garage door is installed. Also, if you want outlets or wall lights in the shed, install the wiring before you finish the walls.



OFF-THE-GRID SHED

This shed stood a long way from any power source, so we opted to use a Honda EU2200i inverter generator for all our electrical needs, along with the EU2200i Companion unit when we needed more power.

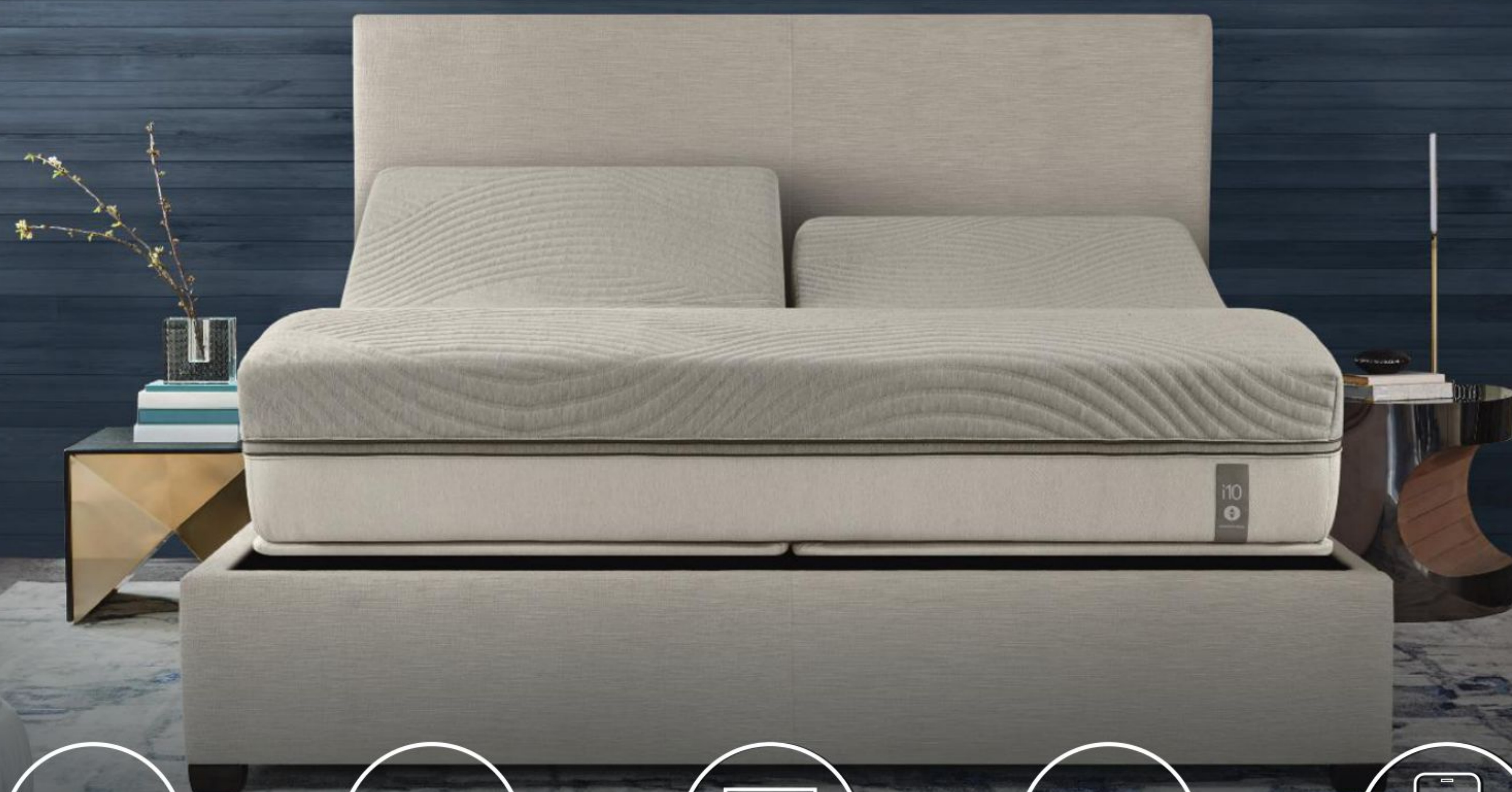
These small, light and powerful 2,200-watt generators had no problem running our circular and table saws and charging our cordless tool batteries. Because they generate super "clean" power, they could also handle our delicate electronic gear like cameras and computers. After the construction was done, the Honda generators provided the power for the shed itself. For more information on Honda generators, visit gen.honda.com.

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DIGGING HOLES

Smart tips for a dumb job

By Gary Wentz

Digging is bonehead simple. But as with any other job, a little know-how lets you do it smarter and faster and with less strain.



Electrical line

Mark excavation site with white paint

1. CALL BEFORE YOU DIG

Cutting into a buried utility line can kill or cost you—yes, you're responsible for damage to underground lines on your property. To avoid that risk, call 811 three or four days before you dig. It's a good idea, though usually not mandatory, to mark the area you plan to excavate with white spray paint before utility lines get marked.

COLOR CODE FOR BURIED UTILITIES

- Proposed excavation
- Electric power lines, cables, conduit, lighting cables
- Gas, oil, steam, petroleum or gaseous materials
- Telecom, alarm or signal lines, cables or conduit
- Drinking water
- Sewers and drain lines



2. SHARPEN YOUR SHOVEL

A sharp edge makes all the difference when you're slicing through hard soil or roots. A file will do the job, but a grinder equipped with a metal-grinding disc is the fastest way to sharpen. A knife-sharp angle will dull instantly, so grind a blunter edge, about 45 degrees or so.



Sod folded back

4. FOLD BACK THE SOD

When you're digging a trench, slice the sod along one side of the trench's path and fold it over. Then, after refilling the trench, you can just flip it back into place.

3. TRENCH WITH A MATTOCK

A mattock is designed for digging narrow trenches—just right for running cable or pipe. Swing it like an ax to cut into hard soil, and then lift out the dirt with the wide blade. The chopping blade slices through roots. Wrap tape around the shaft to gauge the depth of your trench.

Chopping blade

Tape



Knock block

5. KNOCK OFF STICKY SOIL

Soil clinging to your posthole digger makes progress almost impossible. To knock off the sticky stuff, keep a "knock block" within reach and slam your digger against it. It can be a stone, a brick or a face-down shovel.

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Drivers' Alert: Driving can expose you to more dangerous glare than any sunny day at the beach can... do you know how to protect yourself?

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Not all sunglasses are created equal. Protecting your eyes is serious business. With all the fancy fashion frames out there it can be easy to overlook what really matters—the lenses. So we did our research and looked to the very best in optic innovation and technology.

Sometimes it does take a rocket scientist. A NASA rocket scientist. Some ordinary sunglasses can obscure your vision by exposing your eyes to harmful UV rays, blue light, and reflective glare. They can also darken useful vision-enhancing light. But now, independent research conducted by scientists from NASA's Jet Propulsion Laboratory has brought forth ground-breaking technology to help protect human eyesight from the harmful effects of solar radiation

light. This superior lens technology was first discovered when NASA scientists looked to nature for a means to superior eye protection—specifically, by studying the eyes of eagles, known for their extreme visual acuity. This discovery resulted in what is now known as Eagle Eyes®.

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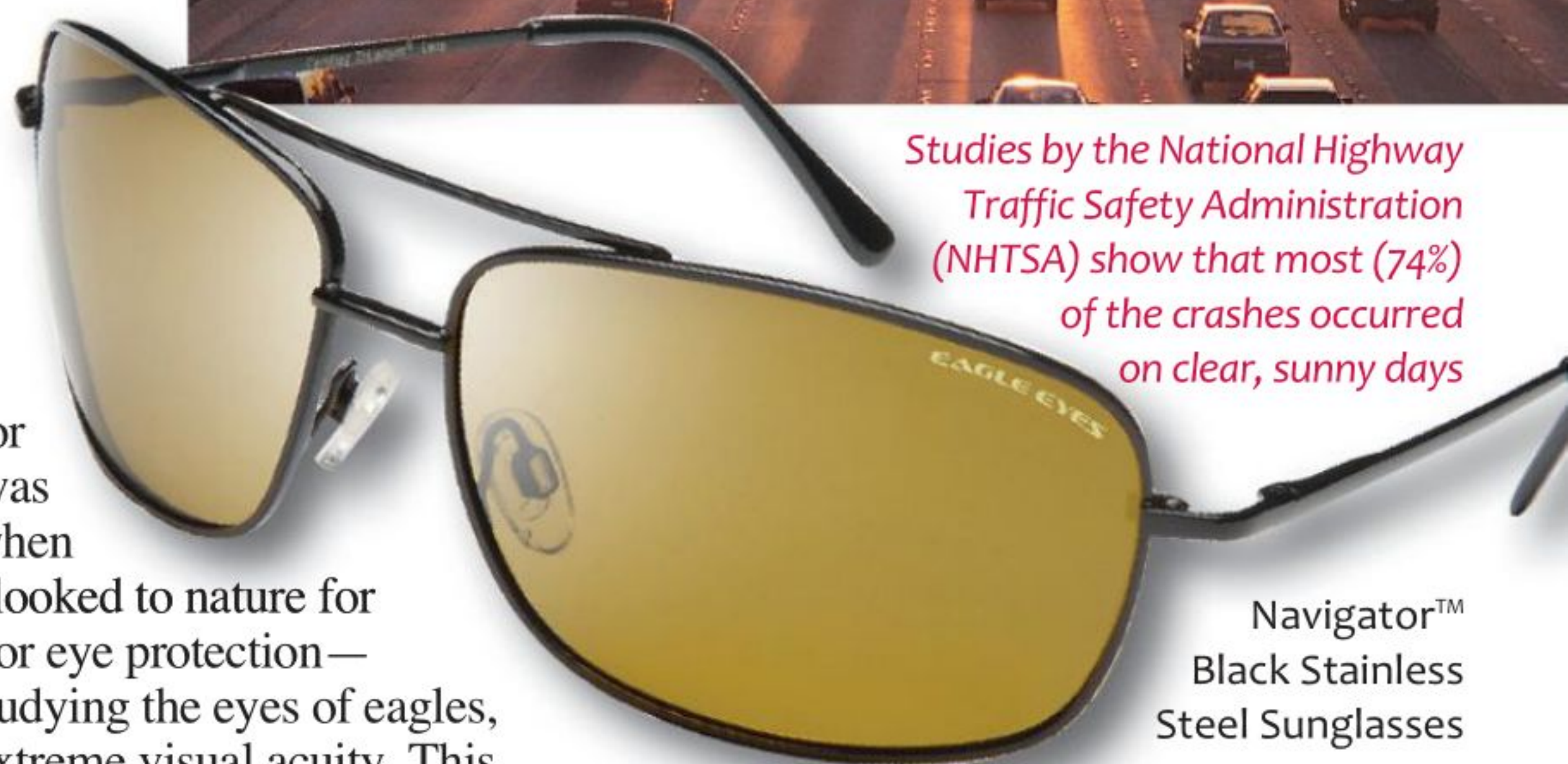
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Power
sod
cutter

6. SAVE THE SOD

Digging a hole is an opportunity to harvest some sod and patch up bad areas of your lawn. With a square spade, you can neatly slice up small pieces of sod, but it's slow going. For larger areas, rent a manual kick-type sod cutter. For major sod harvesting, rent a power sod cutter (about \$80 for a half day).



8. GET A TILE SHOVEL

The long, narrow blade is great for trenching. It also works well for breaking up tough soil and enlarging postholes. Prices start at about \$20 at home centers.



9. GET TOUGH ON TOUGH SOIL

A long, heavy digging bar is the ultimate tool for loosening rock-hard soil and dislodging rocks. A 5-ft. version costs about \$50 at home centers. That may seem like a crazy cost for a simple steel bar, but you won't regret it when you're in tough digging conditions.



7. RENT A POSTHOLE AUGER—OR NOT

Gas-powered augers can make deck footings or fence-post holes fast and easy, but only in some types of soil. In hard clay, an auger is slower than a spade. In rocky soil, you'll have to stop occasionally to pull out rocks with a clamshell digger. Because of these frustrations, some deck and fence contractors don't bother with power augers and simply hand-dig every hole.



10. COVER YOUR GRASS

To avoid raking soil out of the grass later, pile soil on cardboard or plywood. They work well because you can scoop dirt off them when refilling the hole. Tarps are fine too, but they're easily punctured by a shovel.

the family
handyman

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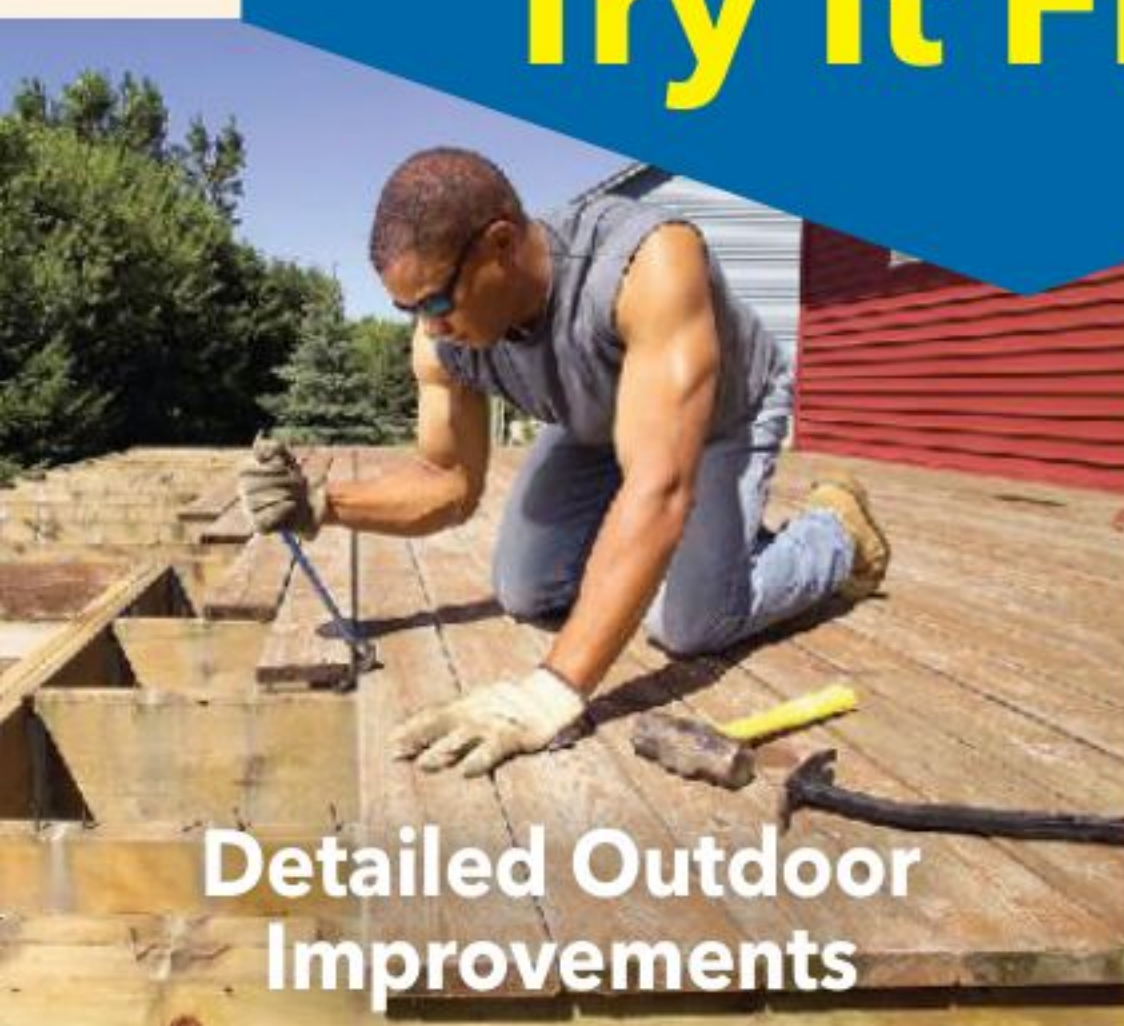
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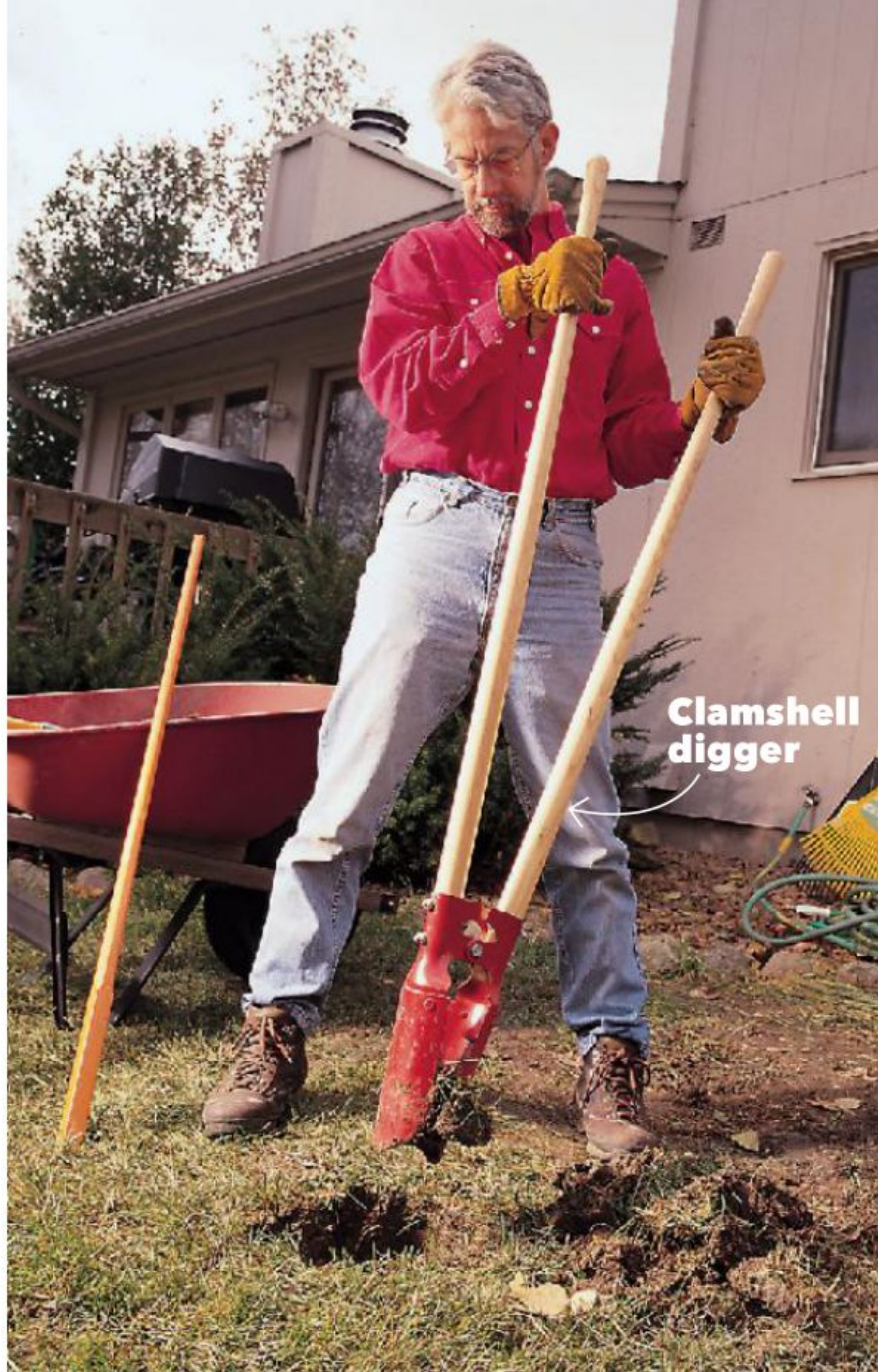


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Clamshell digger

11. DIG POSTHOLES WITH A CLAMSHELL DIGGER

A clamshell digger (\$20 and up) is best for most jobs. Just plunge it into the ground, spread the handles and pull out the dirt. As your hole gets deeper, you have to enlarge the top of the hole so you can spread the handles.

12. MARK THE DEPTH

A tape measure isn't the tool for checking depth—it will get filled with dirt and wrecked. Instead, mark depths on your shovel or posthole digger. That way, you can measure as you dig.



Half of clamshell digger

13. IMPROVISED SHOVEL

A tile shovel is the best tool for flaring out the base of footing holes. But if you don't have one handy, remove the bolt from your clamshell-style post-hole digger and use half of the digger as a tile shovel.



14. MARK WITH A HOSE AND PAINT Lay out the footprint of your hole or trench with a garden hose. When you've got the layout right, mark it with spray paint.



15. BEWARE OF AUGER-TYPE DIGGERS Just twist the handle and an auger-style digger drills a perfect post-hole. Unlike a clamshell digger, it doesn't require you to enlarge the hole. But there's a catch: Augers work well only in soil that's soft, rock-free and not too sticky. In most soils, a clamshell digger is a better choice. Augers cost \$50 or more.



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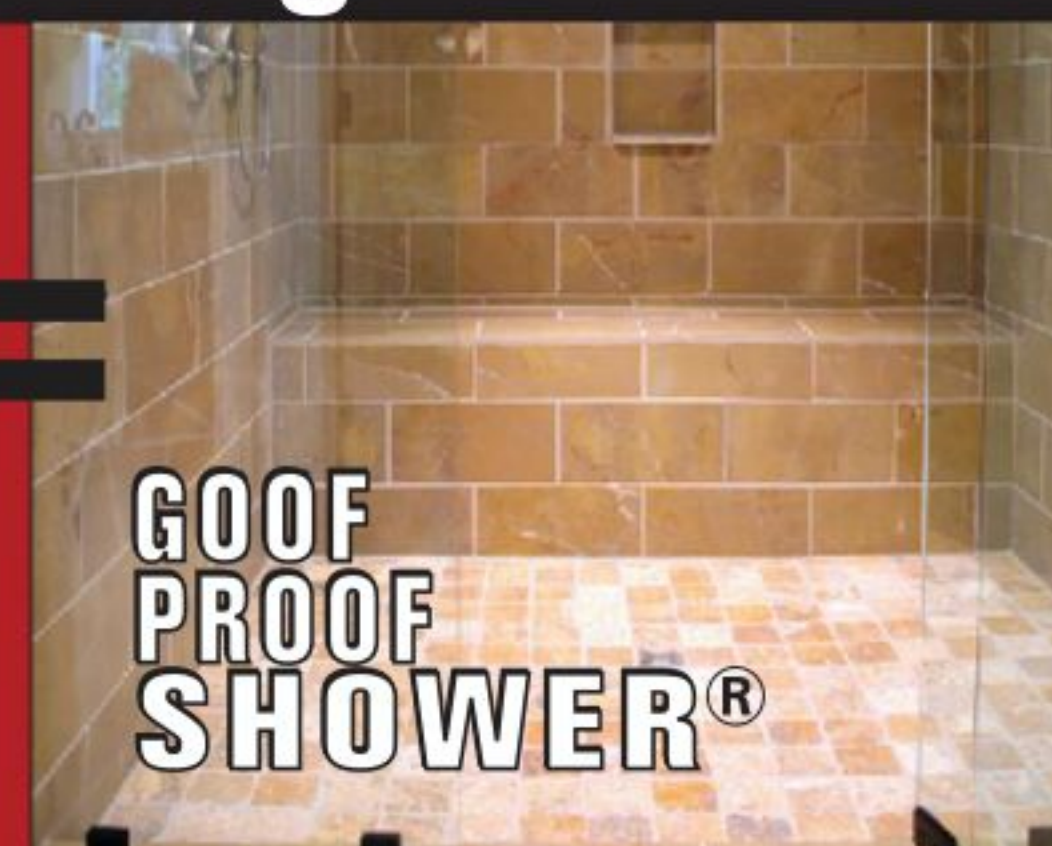
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Tools used:
Standard Curb

- 1) Pre-Pitch™
- 2) Handi-Kirb
- 3) Quick-Pitch®

Low Profile curb

- 1) Pre-Pitch™
- 2) Handi-Kirb

Sheet Membranes



Tools used:

- 1) Quick-Pitch®
- 2) Quick-Clips
- 3) Kirb-Perfect®

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By Matt Boley

WHAT IT TAKES

TIME 2 hours	COST \$30	SKILL LEVEL Beginner
------------------------	---------------------	--------------------------------

TOOLS Jigsaw, drill/driver, clamps, Speed Square, hot glue gun, utility knife



Bird-watching lets you enjoy the best of wildlife, and getting started is easy. You can hang a bird feeder and delight in your new visitors as you sit and read a book on your porch or work in the yard. Feeders are available in a wide price range, and you can pay a lot for one that only looks handmade. So why not build your own? With a splash of creativity and a twist of effort, you can have a hangout that will please both you and your hungry guests.

MATERIALS LIST

ITEM

3' 1x8 board
6' 1x4 board
Liquor/wine bottle
Drinking glass
Four bottle caps
Three mirror clips
3/8" adhesive-backed rubber weather strip
2' 3/8" dowel
1-1/2" trim-head screws
5-gallon bucket
Hot glue

CUTTING LIST

KEY	QTY.	MATERIAL	DIMENSIONS	PART
A	1	1x8 board	7-1/4" x 11-1/2"	Base
B	1	1x4 board	3-1/2" x 8-1/2"	Bottle holder
C	2	1x4 board	3-1/2" x 15-1/2"*	Sides
D	1	1x8 board	7-1/4" x 9-3/4"	Roof
E	1	1x8 board	7-1/4" x 9"	Roof
F	2	1x4 board	3-1/2" x 10"	Braces

Note: All boards are 3/4 in. thick.

*Your measurement will vary; see Photo 1.

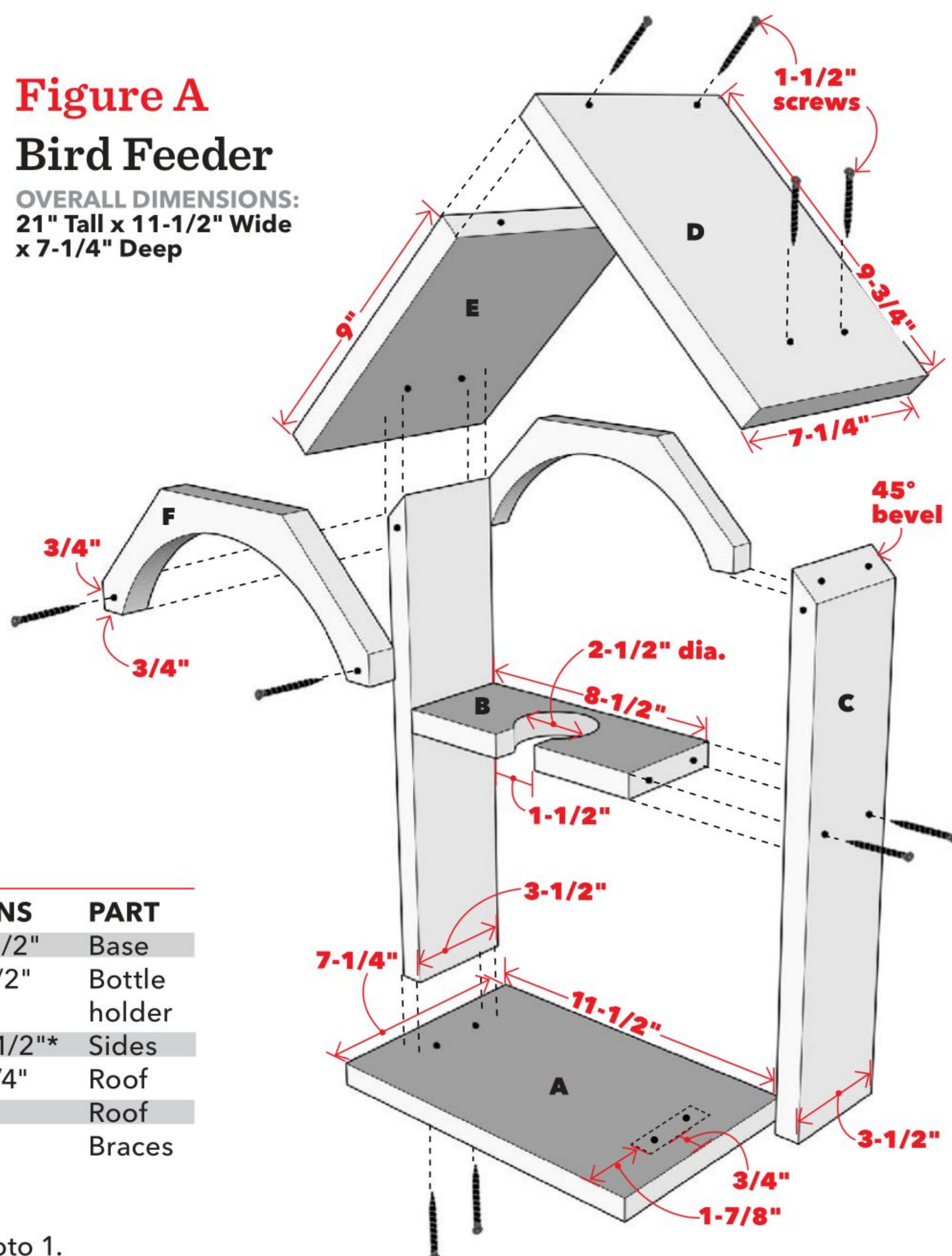


1. Cut the sides

Angle your jigsaw to 45 degrees and cut the sides (C) to the combined heights of your bottle and glass, minus 2 in. Ours ended up being about 15-1/2 in., but your measurement will almost certainly be different.

Figure A Bird Feeder

OVERALL DIMENSIONS:
21" Tall x 11-1/2" Wide
x 7-1/4" Deep





- 2. Make the keyhole for the bottle** Cut a circle with a 2-1/2-in. hole saw in the center of the bottle holder board (B). Then use your jigsaw and square to create a channel for the bottle that will fit the neck of your bottle.



- 3. Fasten the sides to the base** Use a scrap piece of wood as a guide and screw the sides 3/4 in. in from the ends of the base.

Materials

You can build this bird feeder from standard pine boards or pressure-treated lumber. Treated lumber will give you long-term rot resistance but also a disadvantage: It contains a lot of moisture, so you'll have to let the wood dry for at least two weeks before painting it. Treated boards also tend to cup or bow as they dry. Both pine and treated lumber contain knots. If you don't like the knotty look, buy an extra board or two so you can use the knot-free sections.

You can use just about any wine or liquor bottle for this project. **Photos 1** and **4** show how to customize the parts to suit your bottle. Similarly, you can use any glass that has a flat base.

It's important to secure the bottle in the feeder. Wind and rain can knock the bottle out of its perch, breaking it or just spilling a lot of birdseed. We used 3/8-in. adhesive-backed rubber weather strip on the inside of both braces (F) to secure the bottle. You can find this product in the hardware section in most home centers and online.



- 4. Attach the bottle holder to the sides** Mock up the assembly to find the correct height of the bottle holder (B). Cut scrap wood to hold the bottle holder level and at the right height. Drill pilot holes and screw into the bottle holder from the outside of the feeder.



5. Mount the roof

Screw the longer roof section (D) to one end of the shorter roof section (E) and attach the roof to the tops of the sides with screws.



6. Cut the braces

Cut the 1x4 into 10-in. pieces. Mark the miters as shown in Figure A and trace a 5-gallon bucket to make an arc. Cut the arc with a jigsaw. Screw the braces to the sides. Cut adhesive-backed weather strip to 3 in. with a utility knife. Peel the backing and attach the strips to the inside of the braces.



7. Attach the glass

Mark a centerline on the base. Set your glass in the center of the base and screw the mirror clips to the base, securing the glass to the assembly.



8. Install the bar stools

Cut your dowel into 4-in. pieces. Plan where you want the bar stools and drill 1/4-in.-deep pilot holes with a 3/8-in. drill bit into the base. Use an "L" guide made from scrap 1x4 to ensure you drill plumb into the base. Finish the bar stools by hot-gluing bottle caps to the top of the dowels.

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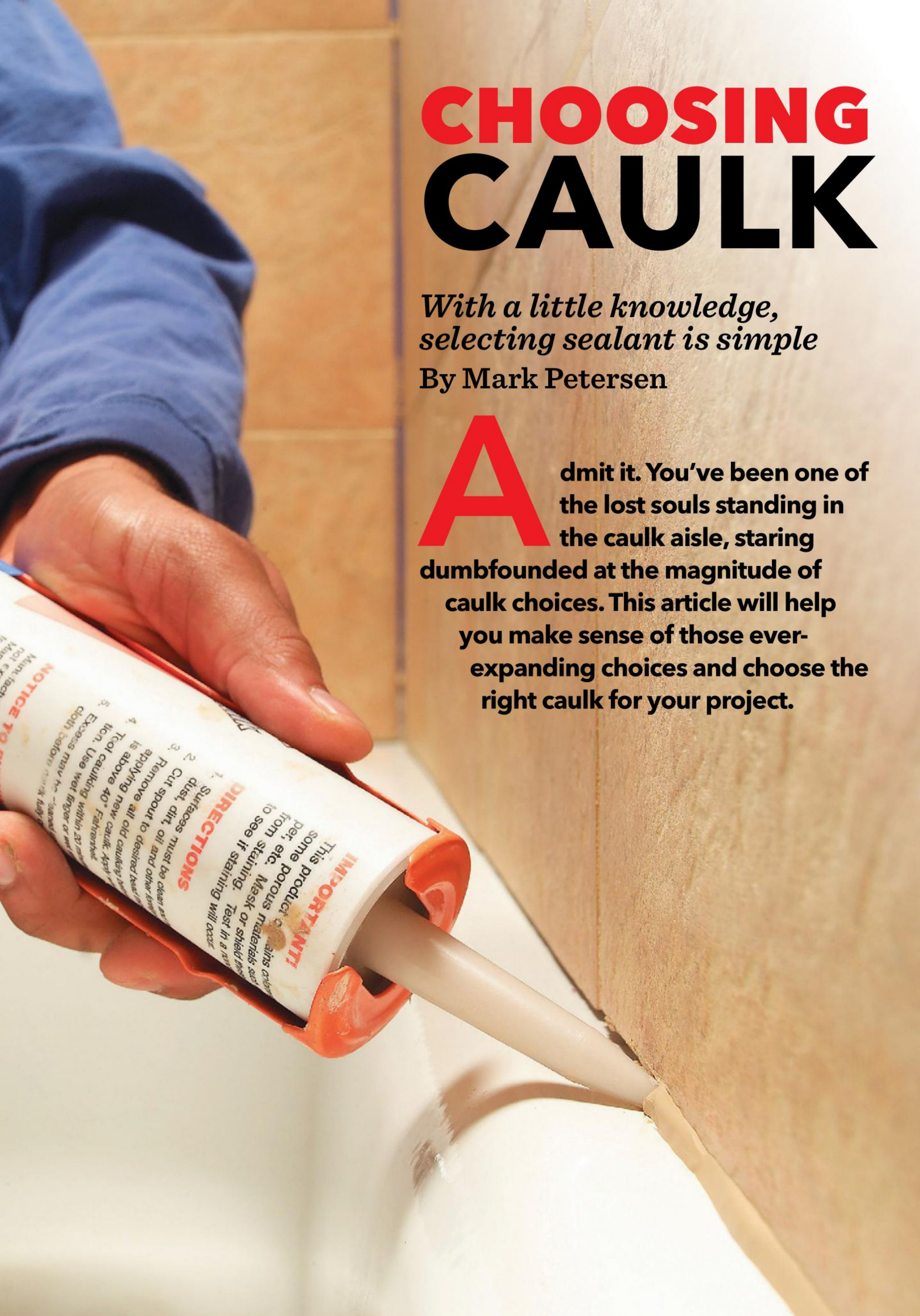
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CHOOSING CAULK

*With a little knowledge,
selecting sealant is simple*

By Mark Petersen

Admit it. You've been one of the lost souls standing in the caulk aisle, staring dumbfounded at the magnitude of caulk choices. This article will help you make sense of those ever-expanding choices and choose the right caulk for your project.



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FOUR COMMON FORMULAS

These types of caulk dominate the shelves at home centers. Labels don't always tell you what's in the tube, so we've included examples of each type in this article. But there are many more brands than the ones we show. All are available in various colors and paintable.

Acrylic Latex: \$2 to \$5

Acrylic latex caulks are the easiest to apply and smooth out. They're also the only sealants that clean up with water. Look for versions labeled "siliconized" or "plus silicone." Adding silicone to acrylic latex improves adhesion and flexibility.

Polyurethane: \$6

Poly caulks are generally tougher than other sealants, making them a good choice for driveways and other areas that take a beating. But their gooey consistency makes them hard to work with. Check the label before painting; you may have to wait several days.

Solvent-Based: \$6 to \$9

Many solvent-based caulks are great for roofing because they don't degrade in direct sunlight and can be applied to wet surfaces. But they're gooey and hard to apply neatly.

Hybrid: \$7 and up

Most hybrid caulks combine silicone and polyurethane for top-notch adhesion, flexibility and longevity. They're easier to apply neatly than polyurethane, but not as easy as acrylic latex. Most aren't labeled "hybrid," so we've pointed out the hybrids in the various photos. Cost is a clue: High-quality hybrids are usually the most expensive caulks on the shelf.



Exterior siding and trim:

Choose a hybrid or polyurethane

On your home's exterior, high-quality caulk is critical—it locks out water, protecting your home against rot and peeling paint. Although some inexpensive acrylic latex caulks are rated for exterior use, we recommend hybrid caulks because they offer better adhesion and flexibility. For matching the appearance of materials like stucco or rough-sawn wood, we like Vulkem, a textured polyurethane.



EXPENSIVE CAULK IS WORTH IT

The most common reason for using caulk, whether indoors or out, is to prevent water penetration—and serious damage. That's why spending an extra five bucks on high-quality caulk is usually smart.

Interior painting: Choose acrylic latex

This is the one project for which it doesn't make sense to spend a lot of money. For just a couple bucks, you can find a caulk that dries fast, is easy to work with, easy to clean up and can handle a little movement. Alex Plus is one good choice, but there are several others. If you have a large recurring crack in a wall corner or in a crown molding joint, choose a product with better flexibility such as a hybrid formula or Big Stretch acrylic caulk.



A SUPERIOR ACRYLIC LATEX CAULK

Like other acrylic latex caulks, Sashco's Big Stretch is easy to smooth out and cleans up with water. Unlike other acrylic latex caulks, it offers great adhesion and amazing elasticity. We tested Sashco's claim that it will stretch "more than 500 percent of its original size." Claim verified. Depending on the color and retailer, Big Stretch costs \$7 to \$12 per tube.



Kitchen and bath: Just check the label

Caulk in kitchens and bathrooms is often visible, so choosing a product that's easy to apply neatly is important. It also needs to be waterproof and mold and mildew resistant. Choose a product labeled with those traits. Acrylic latex kitchen and bath caulks are the easiest to work with, but hybrids generally have a longer life span.



Hybrid

Acrylic Latex

WHAT ABOUT SILICONE?

Years ago, silicone caulk was a good choice for many jobs. Today, there are better options for almost every situation. So why is silicone still so popular? Here's what one manufacturer of caulks (including silicone) told us: "Silicone is what our customers saw their fathers use. It's what they're familiar with."



Concrete and masonry:

Choose a specialty caulk

A caulk specially formulated for concrete and masonry will outperform general-purpose products. Most concrete and masonry sealants are polyurethane or hybrid formulas. But one acrylic latex product, Slab, also performs well, especially on concrete cracks that move a lot. Some concrete and masonry caulks are self-leveling and can be used only on level surfaces.



From left to right: polyurethane, hybrid and acrylic latex

Roofing:

Choose solvent-based sealants

Any caulk that lives on a roof is going to get hammered by the elements. It needs to be able to survive extreme exposure to sunlight and temperature variations yet remain flexible. These two recommended products can actually be applied on wet surfaces!



Solvent-based sealants



Hybrid

Solvent-based

Gutters:

Go with a hybrid or solvent-based product

It's no surprise that a product designed to seal gutters needs to be 100 percent waterproof. But it also needs to be tough-tough enough to handle the abrasion from debris and ice in colder climates. Most gutter sealants do a good job on metal, but not all will adhere to plastic gutters. Be sure to check the label.

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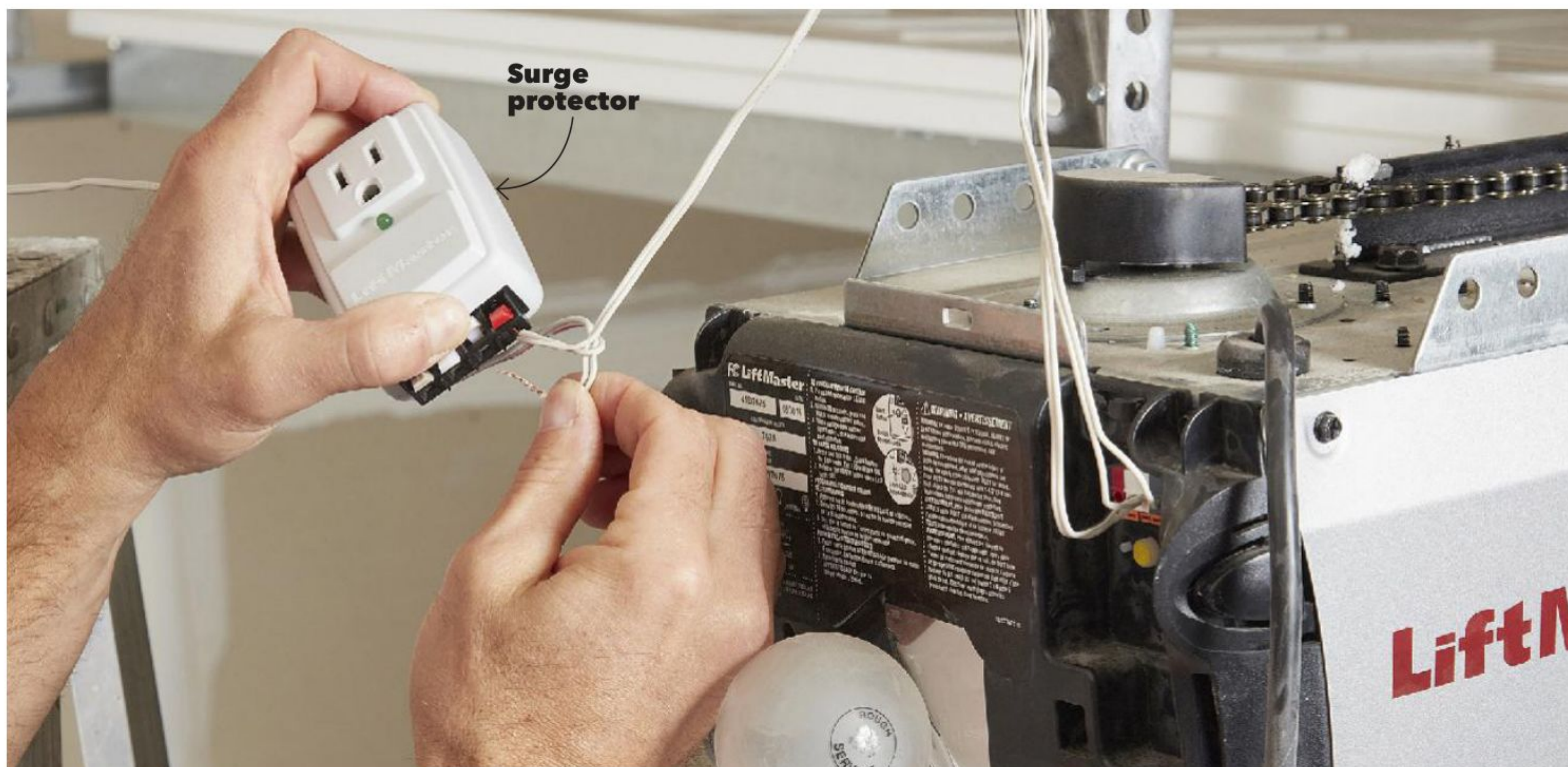
HomeCare+Repair

Fix it, maintain it, improve it. By Brad Holden



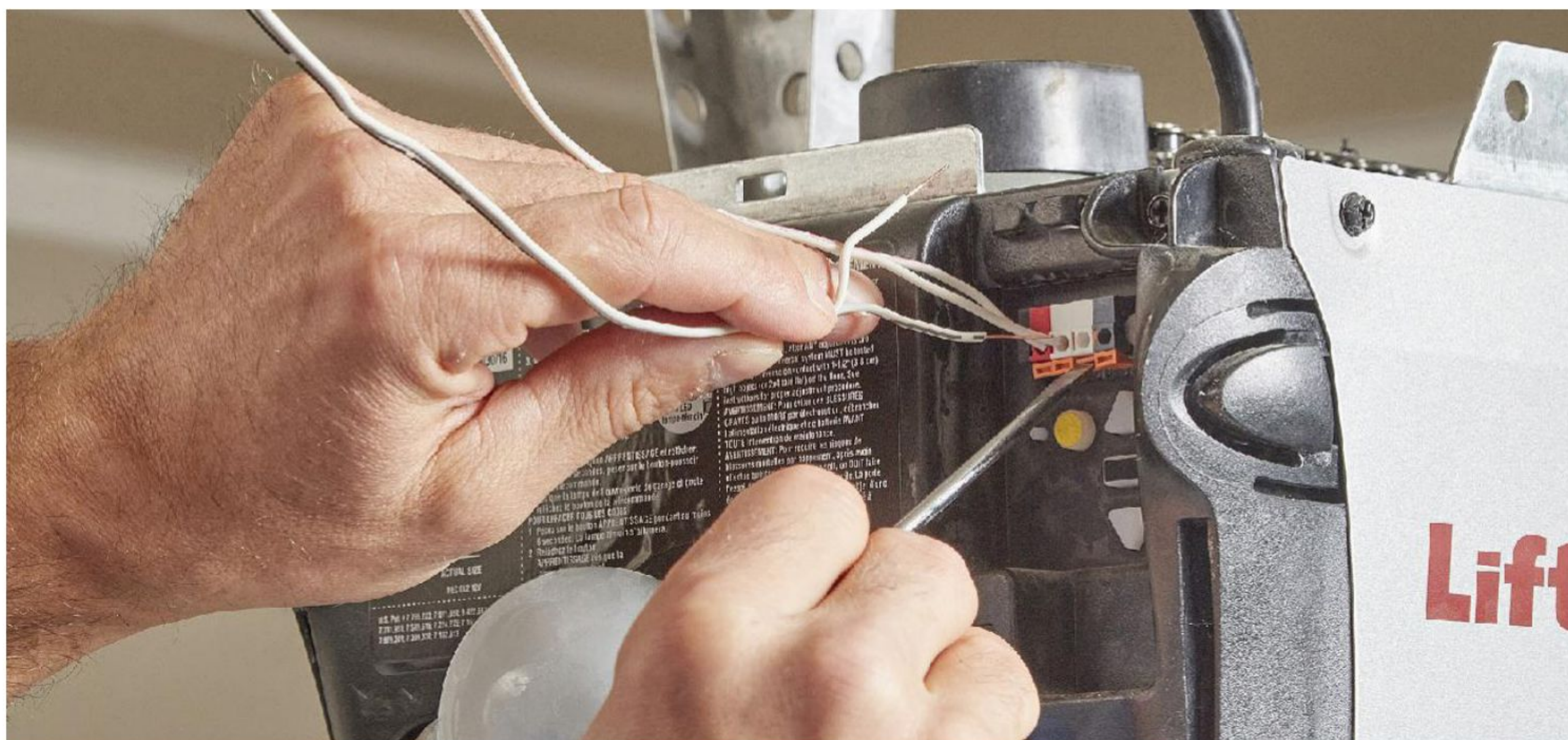
PROTECT YOUR GARAGE DOOR OPENER

Installing a surge protector guards against power surges and lightning strikes.



1. CONNECT THE WALL BUTTON WIRES

Depress the tab on each terminal of the surge protector and insert the wires from the wall buttons in your garage.



2. CONNECT THE NEW WIRES TO THE OPENER

Insert the wall button and photoelectric eye wires into the correct terminals on the opener, paying attention to the polarity.

Every garage door opener is vulnerable to power surges and lightning strikes. In fact, the wiring for the photoelectric eyes and the wall buttons can act like a lightning rod, pulling energy into the opener, damaging the circuit board and leaving your garage door opener dead.

A new circuit board costs \$60 or more. Adding a surge protector is a

DIY project that takes about 15 minutes and greatly reduces your risk of surge damage. The units cost about \$20 each at home centers, and you'll need one for each opener. We installed a Chamberlain Garage Door Universal Surge Protector.

Unplug the opener from the outlet. Then remove the wall button wires from the opener, noting their polarity. Connect those

wires to the correct terminals on the surge protector (**Photo 1**). Next, remove the photoelectric eye wires from the opener and connect those to the surge protector, following the same procedure. Finish by stripping and connecting new wires (included with the surge protector) to the surge protector and corresponding terminals on the opener (**Photo 2**). Plug in the protector and the opener.



[SIMPLE SOLUTION]

SMOKE MATCHES

Regular testing of smoke detectors is a must. If you're skeptical about the value of just pressing the "test" button, try smoke matches for a more real-world test that doesn't involve puffing on a cigar near your detector. Smoke matches are typically used for testing airflow in HVAC systems. They're a bit pricey at \$20 for a pack of 25 matches, but still cheaper and less smelly than 25 cigars.

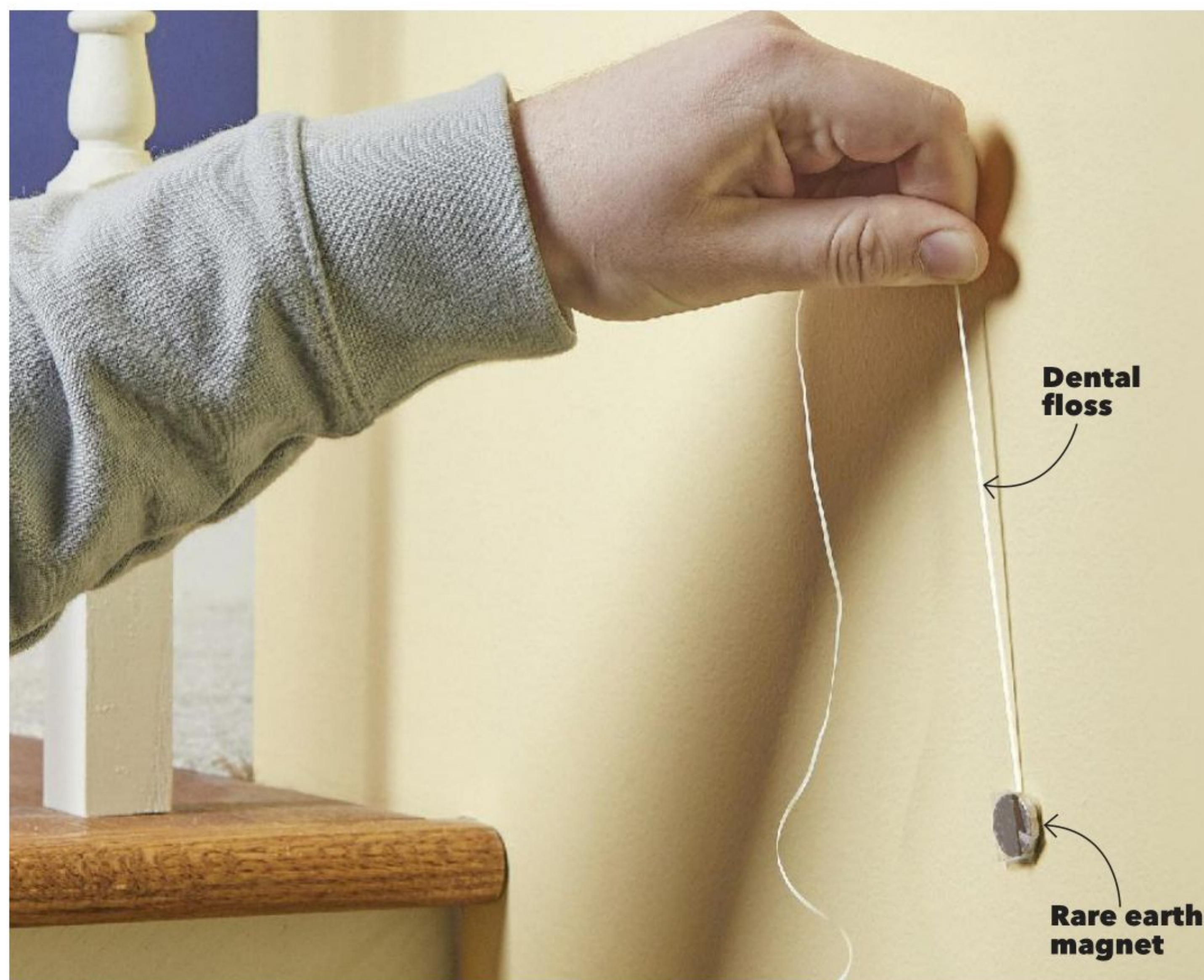


[MONEY SAVER]

Plastic PEX fittings are OK

If you're concerned about using plastic fittings instead of metal for PEX, worry no more. Professional plumbers are buying three times more plastic than brass. Brass fittings cost about five times as much, which likely has something to do with it. And pros don't want a callback to fix their own work on their dime. So obviously, pros trust the plastic fittings. Manufacturers trust them as well; the warranties for plastic fittings are similar if not identical to those for their metal counterparts.

Metal fittings are required, however, where the fitting is exposed to UV light. Also, no plastic pipe or fittings can be used within 18 in. of water heating devices. Check your local building code in case there are other requirements where you live.



[PROBLEM SOLVER]

Locate studs in plaster walls

Finding a stud behind plaster and lath is hit-or-miss with a typical stud finder. Here's a better method. Tape a rare earth magnet (about \$4 for a 10-pack at home centers) to a piece of dental floss. Slowly drag the magnet across the wall surface. The magnet will "hang up" a bit over the nails used to fasten the wood lath to the studs.

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[PROTECT YOUR INVESTMENT]

CHOOSING A DECK FINISH

A wooden deck that's coated with a finish will likely need to be refinished every three to five years. With an entire aisle devoted to finishing products at the home center, how do you decide what's best?

The steps involved with using oil-based vs. water-based finishes, and the maintenance required, will help drive your decision. Manufacturers' claims about how long a finish lasts should be taken with a grain of salt; the life span of any finish on wood that's exposed to the elements is unpredictable.

As you choose a deck finish, keep these facts in mind:

Oil-based

- Easy to apply because of the slower drying time.
- Penetrates the wood and doesn't form a film.
- Takes longer to dry.
- The wide temperature parameters for application let you apply it earlier or later in the season than water-based finishes.
- Doesn't crack or peel.
- You can refinish just a small area.
- Regular cleaning is recommended.

Water-based

- Dries fast, making application more difficult than oil because it's harder to keep a wet edge.
- Forms a protective film.
- Will likely crack and peel.
- Must be completely removed before refinishing.

No finish

- Use pressure-treated lumber or a rot-resistant species such as cedar or redwood.
- No refinishing or the accompanying prep work required.
- Requires periodic cleaning as needed.
- Boards will weather to a silver/gray patina.
- With good airflow, the deck will last for decades.



Prep work is everything

When it's time to refinish, the first step is cleaning. Pressure washing can loosen the wood fibers and hasten the breakdown of the wood, so don't do it unless you're experienced with the proper pressure and angles for cleaning wood. Deck cleaners and scrub brushes are a much safer option.

The remaining prep work depends on the type of finish that's currently on the deck. You can apply an oil finish over an old oil finish with minimal prep and expect good results. But if the old finish is water-based and you haven't thoroughly removed it before applying an oil-based finish, the penetration of the oil-based finish will be blotchy. If you don't know whether the old finish is water- or oil-based, here's how to tell:

■ If the old finish absorbs water and isn't peeling or cracking, it's most likely oil-based. In this case, use a deck cleaner with a scrub brush to clean the surface. Apply



your new finish according to the directions on the can.

■ If the old finish is cracking or peeling and/or doesn't absorb water, it's likely water-based. To remove water-based finishes, you'll need to use paint stripper as well as a fair degree of sanding before applying your new finish.

■ For a new deck that's never been finished, wait a year before applying any finish. During the waiting period, clean with a deck cleaner and a scrub brush at three to six months, and then again right before finishing.

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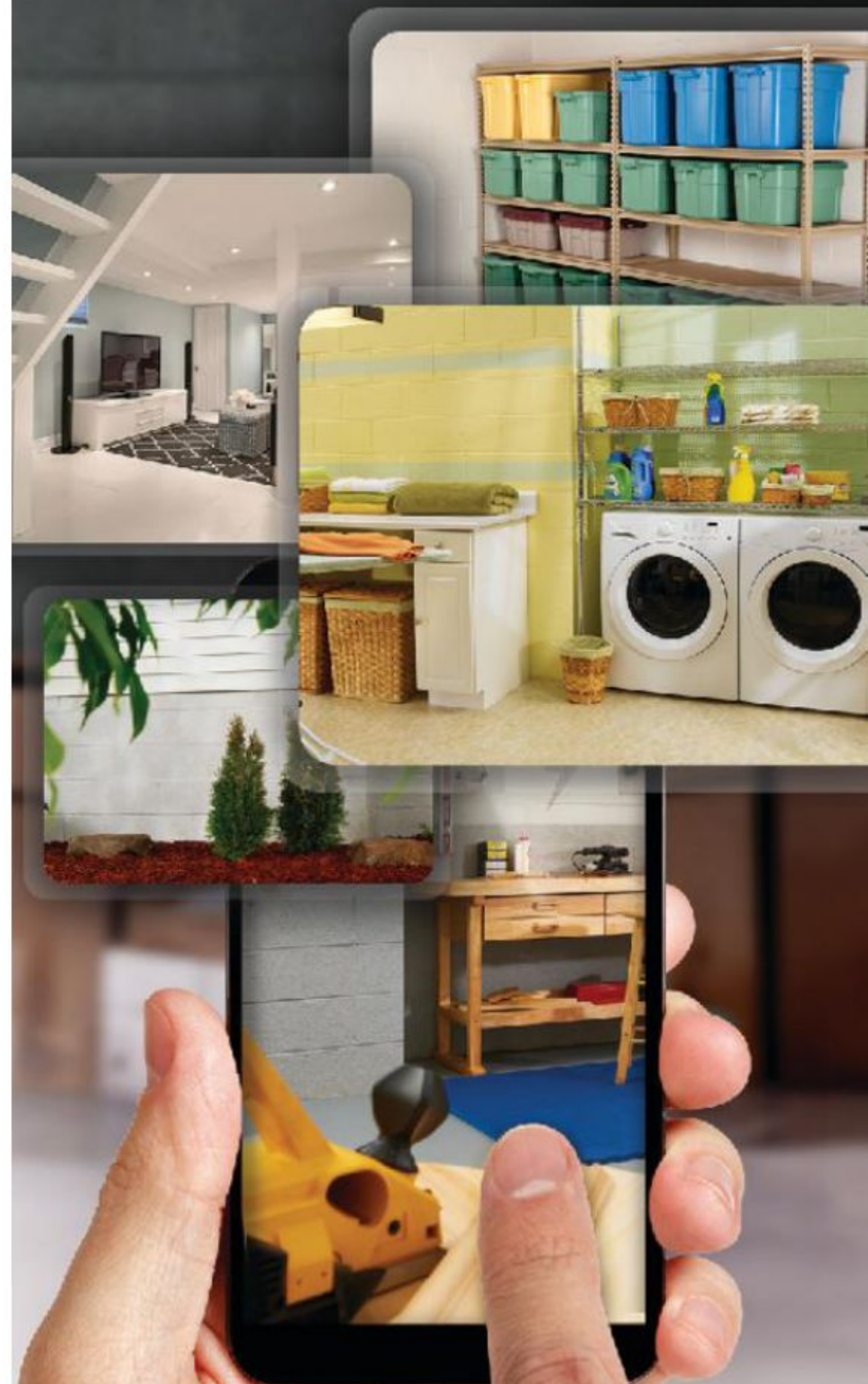
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[VISUALIZE CHANGE]

What size is that wiring, anyway?

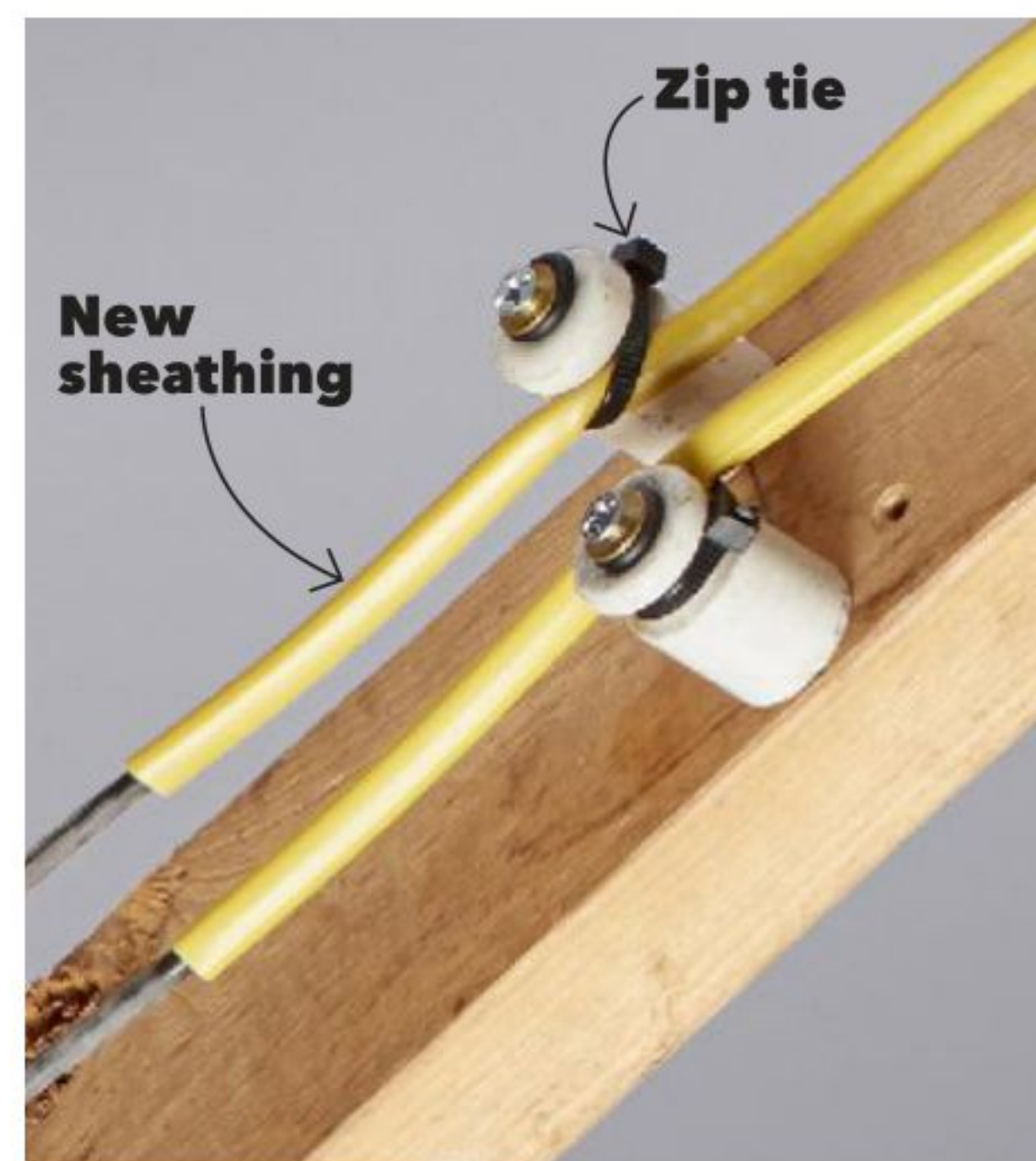
If you're adding an outlet, you need to use wire the same gauge as the existing wiring. How do you tell if your old wiring is 12-gauge or 14-gauge?

Here's a simple visual. Twelve-gauge is about the thickness of a nickel, and 14-gauge is about the thickness of a dime. Also, look at the breaker for the circuit in question to see if it's a 15-amp or a 20-amp breaker. A 20-amp circuit requires wire that's 12-gauge or larger.

14-gauge



12-gauge



[SAFETY FIRST]

Knob-and-tube insulation fix

The insulation on knob-and-tube wiring gets brittle with age. When you're working with it, the insulation may just crumble in your hands. You can easily reinsulate a section using a length of the plastic jacket from a piece of nonmetallic sheathed cable (often referred to as Romex).

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Home Smarts

The knowledge you need to be a better homeowner. By Gary Wentz

KEEPING CROOKS OUT: THE BASICS MATTER MOST

Small security measures are a huge deterrent. Most home break-ins aren't the work of criminal masterminds; burglars just want to steal stuff with minimal time, effort and risk. Unfortunately, there are lots of easy targets in any neighborhood. But that's good news for you. If you make your home just a little harder to get into, you greatly increase the odds that crooks will bypass your house and look for an easier job.

Focus on windows and doors

All the usual security advice (install exterior lighting, ask the neighbors to watch your house, etc.) is worth following. But above all, know this: Most break-ins occur through ground-level windows and doors. So strengthening them is priority one. For help with that, search for "home security" at familyhandyman.com.

Daytime is crime time

Most of us think of burglary as a nocturnal activity. That used to be true. But these days, most burglaries occur between 10 a.m. and 5 p.m. In many cases, the crooks get in through unlocked doors or windows.

What about window bars?

Window bars are almost impossible to get past, making them the toughest type of window security. But before you install the bars, ask the local police if they're necessary. In many areas, crooks avoid breaking glass. It makes a racket and is dangerous to the thief. As one cop put it, "When we find broken glass, we usually find drops of burglar blood."





DID THE WEEDS WIN IN YOUR YARD?

If weeds have taken over your lawn, spot treatment just isn't practical. Use a dial sprayer attached to your garden hose and add concentrated broadleaf killer to the pot. Set the dial at the top to the ratio called for on the herbicide container.

Hook up the garden hose and apply an even treatment to the weedy areas. Be sure to clear the yard of anything that can get contaminated by overspray. And protect your flowers and bushes with plastic sheeting or cardboard. Broadleaf killers will kill or harm anything with leaves—including your flower bed.



STRAIN OUT THE GOOBERS

A half-full can of paint that sits around for a few days will develop gooey chunks and strands of partially dried paint that can ruin your results. To filter them out, buy a pack of paint strainers. These cheap mesh bags catch the goobers and purify the paint. Fussy painters use them even on paint that's fresh off the store shelf.





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MODEL: 5075800

ITEM 62434, 62426, 62433, 62432, 62429, 62428 shown

15005682
LIMIT 9 - Coupon valid through 10/8/18*

THUNDERBOLT solar **SUPER COUPON**

100 WATT SOLAR PANEL KIT Customer Rating ★★★★★

2X MORE POWER

NOW \$149.99
~~\$199.99~~
SAVE \$175

COMPARE TO SUNFORCE \$325.92
MODEL: 50180

ITEM 64335
63585 shown

15007440
LIMIT 4 - Coupon valid through 10/8/18*

CENTECH **SUPER COUPON**

AUTOMATIC BATTERY FLOAT CHARGER Customer Rating ★★★★★

NOW \$4.99
~~\$9.99~~
SAVE 50%

ITEM 64284/69955
69594/42292 shown

15011907
LIMIT 5 - Coupon valid through 10/8/18*

PITTSBURGH **SUPER COUPON**

16 OZ. HAMMERS WITH FIBERGLASS HANDLE Customer Rating ★★★★★

LIFETIME WARRANTY

YOUR CHOICE \$2.99
~~\$4.99~~
SAVE 70%

COMPARE TO KOBALT \$9.98
MODEL: 62742

TYPE ITEM
CLAW 69006/60715/60714
RIP 69005/61262/47873

Item 47873 shown

15012482
LIMIT 9 - Coupon valid through 10/8/18*

drill master **SUPER COUPON**

Customer Rating ★★★★★ **18 VOLT, 3/8" CORDLESS DRILL/DRIVER WITH KEYLESS CHUCK**

Includes one 18V NiCd battery and charger.

NOW \$16.99
~~\$19.99~~
SAVE 71%

COMPARE TO BLACK & DECKER \$59.99
MODEL: GC1801

ITEM 69651/62868
62873/68239 shown

15030686
LIMIT 5 - Coupon valid through 10/8/18*

PITTSBURGH **SUPER COUPON**

6" DIGITAL CALIPER Customer Rating ★★★★★

Includes two 1.5V SR44 button cell batteries.

NOW \$9.99
~~\$18.99~~
SAVE 66%

COMPARE TO HUSKY \$29.97
MODEL: 1467H

ITEM 61585/62387/63711/47257 shown

15031524
LIMIT 7 - Coupon valid through 10/8/18*

COBRA **SUPER COUPON** Customer Rating ★★★★★

8 CHANNEL SURVEILLANCE DVR WITH 4 HD CAMERAS AND MOBILE MONITORING CAPABILITIES

• Night vision

NOW \$229.99
~~\$269.99~~
SAVE \$120

COMPARE TO NIGHT OWL \$349.99
MODEL: HDA10P108U841PI

ITEM 63890

15033802
LIMIT 3 - Coupon valid through 10/8/18*

PREDATOR **SUPER COUPON**

6.5 HP (212 CC) OHV HORIZONTAL SHAFT GAS ENGINE

Customer Rating

NOW \$99⁹⁹

~~\$119⁹⁹~~

ITEM 60363/69730

ITEM 69727 shown

CALIFORNIA ONLY

COMPARE TO **\$329⁹⁹** **SAVE \$230**

HONDA MODEL: GX200UT20X2

LIMIT 5 - Coupon valid through 10/8/18*

COVERPRO **SUPER COUPON**

10 FT. x 20 FT. PORTABLE CAR CANOPY

Customer Rating

NOW \$99⁹⁹

~~\$129⁹⁹~~

COMPARE TO **\$205⁹⁹** **SAVE \$106**

SHELTER LOGIC MODEL: 23522

ITEM 63054/62858 shown

LIMIT 4 - Coupon valid through 10/8/18*

BADLAND **Battle Tested** **SUPER COUPON**

2500 LB. ELECTRIC WINCH WITH WIRELESS REMOTE CONTROL

- Weighs 14.3 lbs.
- 11-1/8" L x 4-1/2" H

Customer Rating

NOW \$49⁹⁹

~~\$69⁹⁹~~

COMPARE TO **\$179⁹⁹** **SAVE \$130**

SUPERWINCH MODEL: 1125220

ITEM 61840/61297/63476/61258 shown

Voted Best Winches

LIMIT 3 - Coupon valid through 10/8/18*

PITTSBURGH **#1 SELLING JACKS IN AMERICA** **SUPER COUPON**

RAPID PUMP® 1.5 TON LIGHTWEIGHT ALUMINUM SERVICE JACK

- 3-1/2 pumps lifts most vehicles
- Lifts from 3-1/2" to 14-1/8"
- Weighs 34 lbs.

Customer Rating

NOW \$59⁹⁹

~~\$79⁹⁹~~ **SAVE \$40**

COMPARE TO **\$99⁹⁹**

DURALAST MODEL: T815016L

ITEM 68053/62160 62496/62516/60569 shown

LIMIT 5 - Coupon valid through 10/8/18*

HaulMaster **SUPER COUPON**

4 PIECE, 1" x 15 FT. RATCHETING TIE DOWNS

Customer Rating

• 400 lb. working load

NOW \$6⁹⁹

~~\$11⁹⁹~~

COMPARE TO **\$40⁸⁸** **SAVE 82%**

ATE TOOLS MODEL: 33079

ITEM 63057/63056/63094 90984/63150/61524 shown

LIMIT 5 - Coupon valid through 10/8/18*

HaulMaster **SUPER COUPON**

• 1000 lb. capacity 18" x 12" MOVER'S DOLLY

Customer Rating

NOW \$7⁹⁹

~~\$10⁹⁹~~

COMPARE TO **\$16⁴³** **SAVE 51%**

BUFFALO TOOLS MODEL: H0FDOLLY

ITEM 61899/63095/63096 63098/63097/93888 shown

LIMIT 7 - Coupon valid through 10/8/18*

Lynxx **SUPER COUPON**

40 VOLT LITHIUM CORDLESS BRUSHLESS BLOWER

Customer Rating

NOW \$119⁹⁹

~~\$139⁹⁹~~

COMPARE TO **\$199** **SAVE \$79**

DEWALT MODEL: DCBL790B

ITEM 64481/63284 shown

LIMIT 4 - Coupon valid through 10/8/18*

U.S. GENERAL **SERIES 2** **SUPER COUPON**

Customer Rating

44" x 22" DOUBLE BANK EXTRA DEEP CABINET

NOW \$449⁹⁹

~~\$479⁹⁹~~ **SAVE \$2,155**

COMPARE TO **\$2,605**

SNAP-ON MODEL: KRA4813FPB0

ITEM 64281/64134 64133 shown

LIMIT 5 - Coupon valid through 10/8/18*

SUPER COUPON

EAR MUFFS

Customer Rating

NOW \$3⁹⁹

~~\$6⁹⁹~~

COMPARE TO **\$16⁰⁶** **SAVE 75%**

MORRIS PRODUCTS MODEL: 53216

ITEM 94334

LIMIT 5 - Coupon valid through 10/8/18*

CENTRAL PNEUMATIC **SUPER COUPON**

18 GAUGE, 2-IN-1 NAILER/STAPLER

Customer Rating

WE CARRY A FULL LINE OF NAILS

NOW \$15⁹⁹

~~\$22⁹⁹~~

COMPARE TO **\$59⁹⁹** **SAVE 73%**

PORTER-CABLE MODEL: BN200C

ITEM 64269 63156 68019 shown

LIMIT 5 - Coupon valid through 10/8/18*

SUPER COUPON

10" PNEUMATIC TIRE

Customer Rating

NOW \$3⁹⁹

~~\$5⁹⁹~~ **SAVE 60%**

COMPARE TO **\$10**

FARM & RANCH MODEL: FR1055

ITEM 69385/62388/62409 62698/30900 shown

LIMIT 7 - Coupon valid through 10/8/18*

drillmaster **SUPER COUPON**

Customer Rating

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

NOW \$8⁹⁹

~~\$14⁹⁹~~ **SAVE 67%**

COMPARE TO **\$28⁰⁶**

BLACK & DECKER MODEL: HG1300

ITEM 62340/62546 63104/96289 shown

LIMIT 6 - Coupon valid through 10/8/18*

WINDSOR DESIGN **SUPER COUPON**

60" HARDWOOD WORKBENCH WITH 4 DRAWERS

Customer Rating

Tools sold separately.

NOW \$129⁹⁹

~~\$159⁹⁹~~

COMPARE TO **\$415** **SAVE \$285**

GRIZZLY MODEL: H7723

ITEM 93454/69054/63395/62603 shown

LIMIT 5 - Coupon valid through 10/8/18*

drillmaster **SUPER COUPON**

80 PIECE ROTARY TOOL KIT

Customer Rating

NOW \$6⁹⁹

~~\$9⁹⁹~~

COMPARE TO **\$24⁸¹** **SAVE 71%**

PROFESSIONAL WOODWORKER MODEL: 51832

ITEM 63292/63235/68986/97626 shown

LIMIT 9 - Coupon valid through 10/8/18*

CHICAGO ELECTRIC **SUPER COUPON**

MIG-FLUX WELDING CART

Customer Rating

NOW \$29⁹⁹

~~\$39⁹⁹~~ **SAVE \$70**

COMPARE TO **\$99⁹⁹**

FORNEY MODEL: 117535099

ITEM 60790/61316/69340 shown

Welder and accessories sold separately

LIMIT 5 - Coupon valid through 10/8/18*

CENTRAL MACHINERY **SUPER COUPON**

16" VARIABLE SPEED SCROLL SAW

Customer Rating

NOW \$69⁹⁹

~~\$99⁹⁹~~ **SAVE \$129**

COMPARE TO **\$199**

PORTER CABLE MODEL: PCB375SS

ITEM 62519/63283/93012 shown

LIMIT 3 - Coupon valid through 10/8/18*

PITTSBURGH **SUPER COUPON**

Customer Rating

50" CLAMP AND CUT EDGE GUIDE

LIFETIME WARRANTY

NOW \$14⁹⁹

~~\$22⁹⁹~~ **SAVE 61%**

COMPARE TO **\$38⁹⁸**

BORA MODEL: 543050

ITEM 66581

Tools sold separately.

LIMIT 5 - Coupon valid through 10/8/18*

CHICAGO ELECTRIC **POWER TOOLS** **SUPER COUPON**

2.5 HP, 10" INDUSTRIAL TILE/BRICK SAW

Customer Rating

NOW \$219⁹⁹

~~\$269⁹⁹~~ **SAVE \$279**

COMPARE TO **\$499**

KOBALT MODEL: KWS S10-06

Blade sold separately.

ITEM 62391/69275 shown

LIMIT 4 - Coupon valid through 10/8/18*

CENTRAL MACHINERY **SUPER COUPON**

350 LB. CAPACITY FOLDABLE SAW HORSE

Customer Rating

NOW \$8⁹⁹

~~\$12⁹⁹~~ **SAVE 43%**

COMPARE TO **\$16⁰¹**

STANLEY MODEL: STST11200

ITEM 60710 61979/69446 shown

LIMIT 7 - Coupon valid through 10/8/18*

Lifetime **CARBIDE** **SUPER COUPON**

ALUMINUM OXIDE SANDING SPONGES PACK OF 10

Customer Rating

COARSE ITEM 46751 63918

MEDIUM ITEM 46752 63915

FINE ITEM 46753 63912

SAVE 20%

YOUR CHOICE \$3⁹⁹

~~\$4⁹⁹~~

LIMIT 5 - Coupon valid through 10/8/18*

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Car + Garage

Expert advice on repair, maintenance and gear. By Rick Muscoplat

Change your coolant

In the old days (the '90s and earlier), changing your vehicle's coolant was simple. Then cars got more complex and DIYers got intimidated by the precise filling and "air-bleeding" procedures required to eliminate engine air pockets. All it takes to get back in the game is a one-time \$90 investment in an air-powered refilling tool. Then you can change your coolant yourself in about an hour. You'll save about \$50 on your very first coolant change, and about \$100 on each one after that. This procedure works for any cooling system that's not contaminated with rust or oil. I'll show you how to check yours and then how to change the coolant.

Start the inspection when your engine is cool. Remove the radiator or coolant reservoir cap and examine the coolant color. If it looks rusty (don't confuse orange coolant with rust), has crud or oil floating on the top, or looks like chocolate milk, call it quits and take your vehicle to a pro. You have problems that this procedure won't solve.

Here's what you'll need:

- New coolant (2 gallons; about \$60)
- Air-powered refill tool
- Air compressor
- Hose removal tool (about \$8 from an auto parts store or online)
- Shop manual to locate block drain plugs
- Drain pan
- Absorbent paper towels
- Wrenches and screwdrivers

MEET THE EXPERT

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— J. Fitzgerald, VA



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Our Perfect Sleep Chair® is just the chair to do it all. It’s a chair, true – the finest of lift chairs – but this chair is so much more! It’s designed to provide total comfort and relaxation not found in other chairs. It can’t be beat for comfortable, long-term sitting, TV viewing, relaxed reclining and – yes! – peaceful sleep.

Our chair’s recline technology allows you to pause the chair in an infinite number of positions, including the Trendelenburg position and the zero gravity position where your body experiences a minimum of internal and external stresses. You’ll love the other benefits, too: It helps with correct spinal alignment, promotes back pressure relief, and encourages better posture to prevent back and muscle pain.



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safely on your feet!

And there’s more! The overstuffed, oversized biscuit style back and unique seat design will cradle you in comfort. Generously filled, wide armrests provide enhanced arm support when sitting or reclining. The high and low heat settings along with the multiple massage settings, can provide a soothing relaxation you might get at a spa – just imagine getting all that in a lift chair! It even has a battery backup in case of a power outage. Shipping charge includes white glove delivery. Professionals will deliver the chair to the exact spot in your home where you want it, unpack it, inspect it, test it, position it, and even carry the packaging away! You get your choice of fabrics and colors – **Call now!**

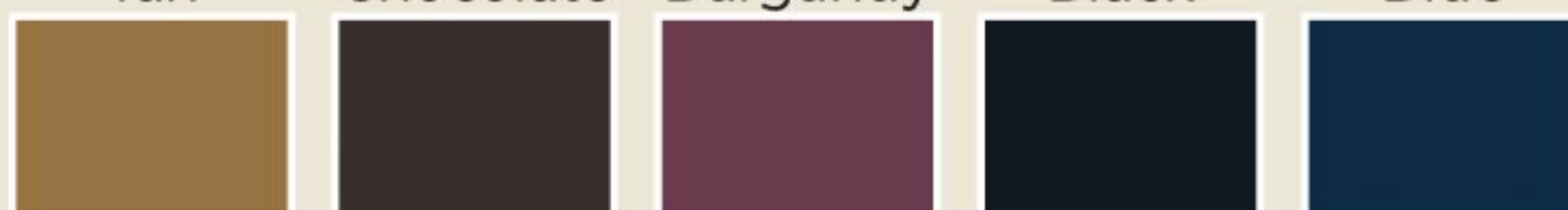
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If the coolant looks clean, start the job by jacking up the vehicle and supporting it with jack stands. Next, place a large drain pan under the radiator. Loosen the lower radiator hose clamp with pliers (spring-type clamp) or a screwdriver (worm-drive clamp) and remove the hose (Photo 1). If the hose won't budge, use a hose removal tool (one choice is Tool Aid No. SGT13860; about \$8 online) to break it loose (Photo 1). Let the radiator and water pump drain completely. Then reattach the lower radiator hose and clamp.

Next, find and remove the block drain plugs (their placement varies, so refer to a repair manual for the location of yours). Reinstall the block drain plugs and move on to the refilling step.

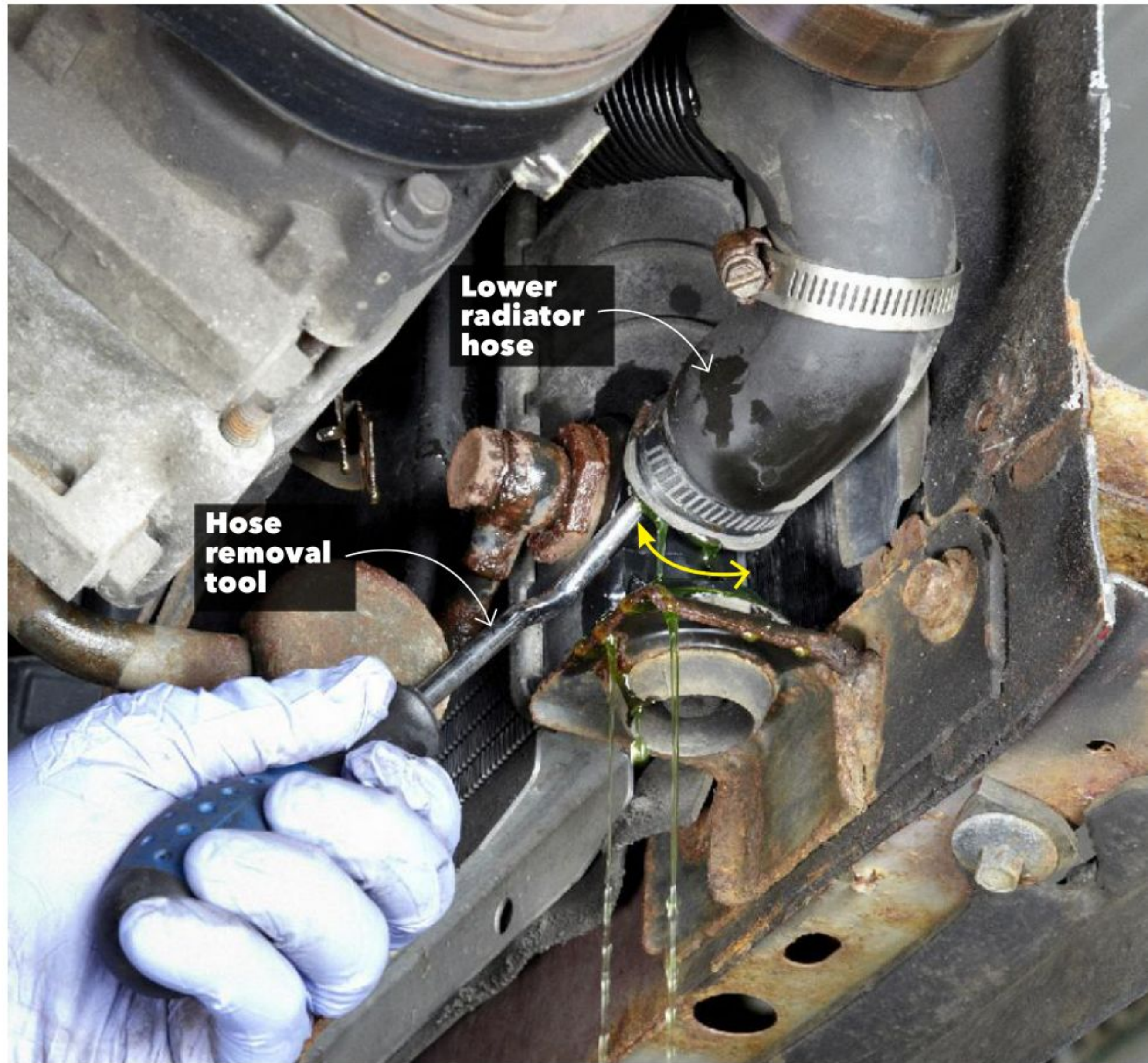
Refill with fresh coolant

Insert the air tool (we used the UView 550500 AirLift II Economy Cooling System Refiller; \$90 online) into the radiator neck or overflow bottle. Connect the exhaust hose and compressed-air line and route the open end of the tool's exhaust hose into an empty gallon jug or pail. Then open the valve and let the vacuum rise until the needle reaches the edge of the red zone on the gauge. Then fill with coolant (Photo 2). The vacuum sucks out any air pockets as it refills the system. When it's full, just reinstall the radiator or overflow tank caps, remove the jack stands and go for a spin.

Buying the right coolant

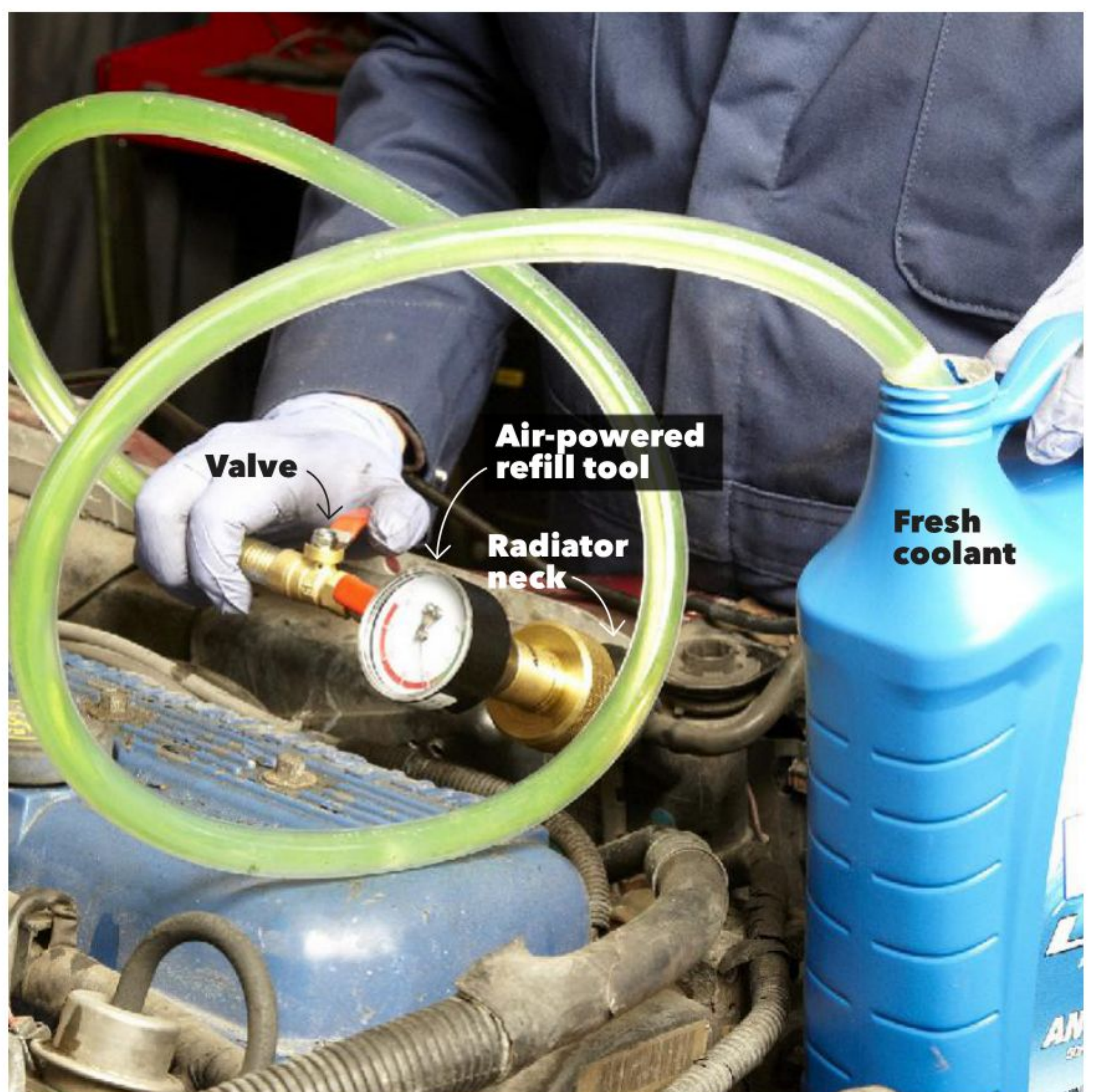
Most DIYers buy coolant at the auto parts store where the product is labeled "universal," meaning it works in all cars. The carmakers disagree. Over the past several years, they've issued service bulletins warning that "universal" coolants are often incompatible with the newer metal alloys and gaskets and seals used in their vehicles. The carmakers aren't saying that just to increase sales of their proprietary coolants. They're seeing real (and expensive) damage caused by these coolants.

If you use the wrong coolant, you won't see the damage for a few years. But when you do, it'll cost you a bundle. So heed the manufacturer's warnings and buy coolant right from the dealer. It'll cost about \$6 more per gallon (most vehicles only need 2 gallons), but the peace of mind is worth it.



1. Remove the lower hose

Slip the pointed end of the removal tool all the way into the end of the hose. Then pull it around the radiator neck to break the hose loose. Then pull it off quickly and immediately direct the coolant into the drain pan.



2. Vacuum-fill the cooling system

Insert the fill tube into the coolant bottle. Then open the valve and let the vacuum pull fresh coolant into the system. Repeat the procedure until the system is full.

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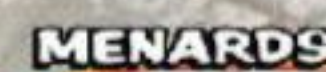
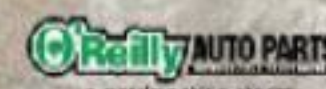
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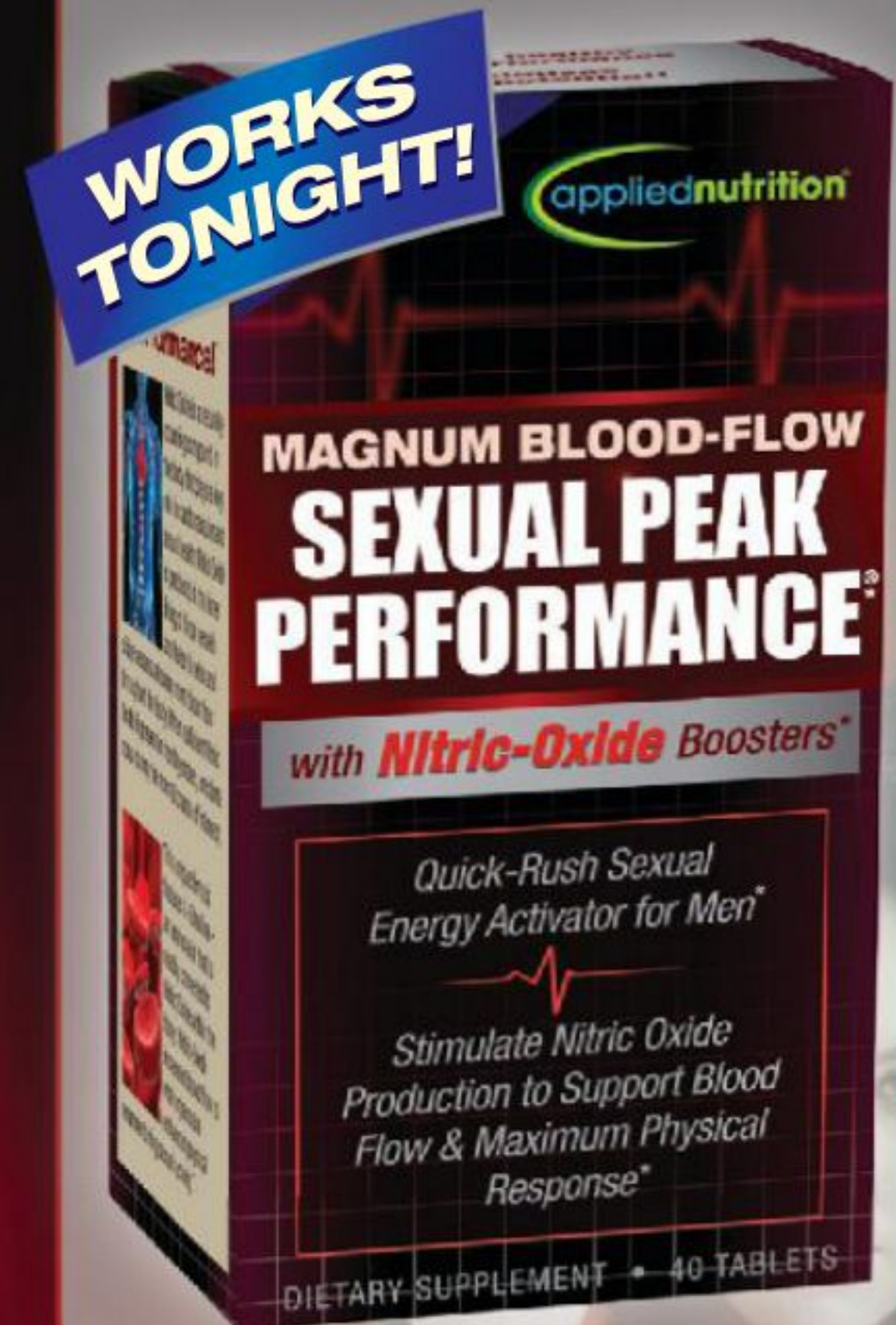
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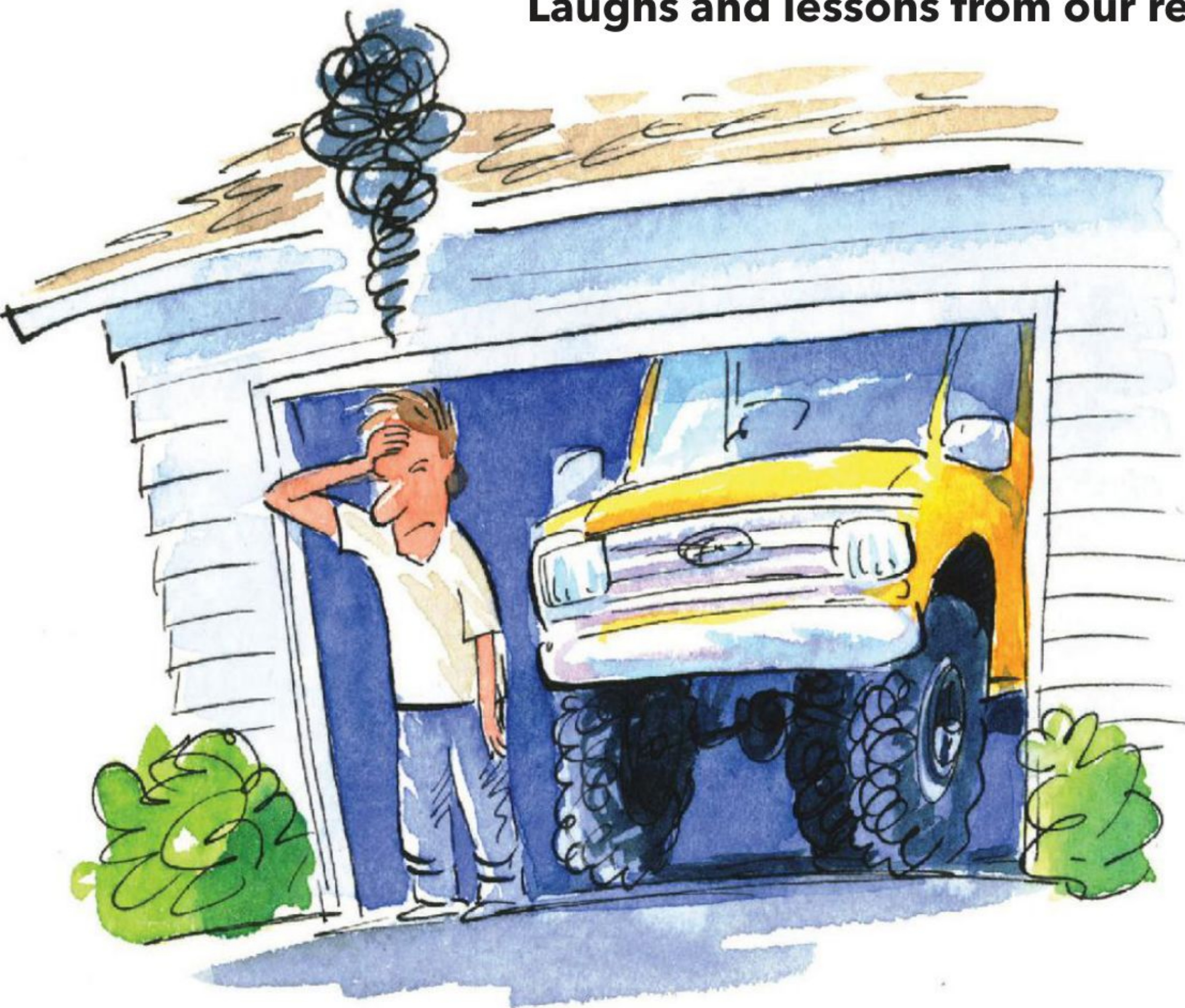


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Laughs and lessons from our readers



IT'S A MONSTER, ALL RIGHT

My latest gearhead project was by far the most challenging: converting my stock Ford pickup to a manly mini monster truck. I had tricked it out with a lift package, giant struts, enormous tires—the whole bit! When it was done, I couldn't wait to take it out to show my friends and maybe even do a little "mudding."

But as I was getting ready to drive it out of the garage, I came to the ridiculously late realization that my truck was too darn high to get through the door! With my tail between my legs, I had to take off the wheels, rest the truck on dollies and have a tow truck pull it out like a beached whale. Nothing manly about that.

JEFF ROSS

PASSING THE MUCK

When I was a youngster, we lived in an apartment complex. One day after work, my father was greeted with the news that the kitchen sink was full of standing water. After studying the situation, my father cleverly reversed the hose on the vacuum so it blew instead of sucked and blasted the clog past the sink trap.

It wasn't long before there was a knock at the door. The next-door neighbor lady was there—covered with soapy water and disgusting goo. She explained that she had been cleaning vegetables in the kitchen sink when there was a sudden, loud—and drenching!—eruption from her kitchen drain. She wanted to know if my father knew what could have caused this disaster. (Apparently the apartment units shared a drain line.) My father looked her right in her mucky face and said he had "no idea" what happened. He enjoyed many years of retelling the story of how his bright idea had led to a bald-faced lie.

JIM NAPERALA



SMASH-HAPPY

When I was breaking up an old porch to have a concrete patio poured, I was surprised to find a slab of concrete already there.

I started whaling on the slab with my sledgehammer. Suddenly the sledge broke through into a huge, dark void, which turned out to be my basement.

Apparently the slab was covering a concealed well room. We now *had* to replace it. But instead of a simple concrete pour, we had to spend much more on a slab that could span the open space.

JASON AMUNDSEN

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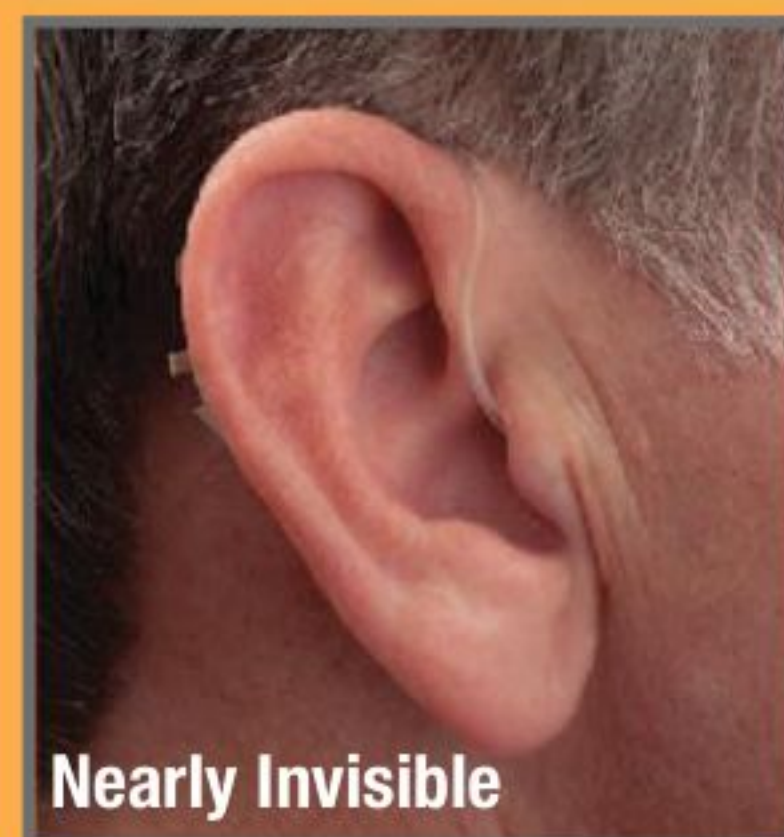
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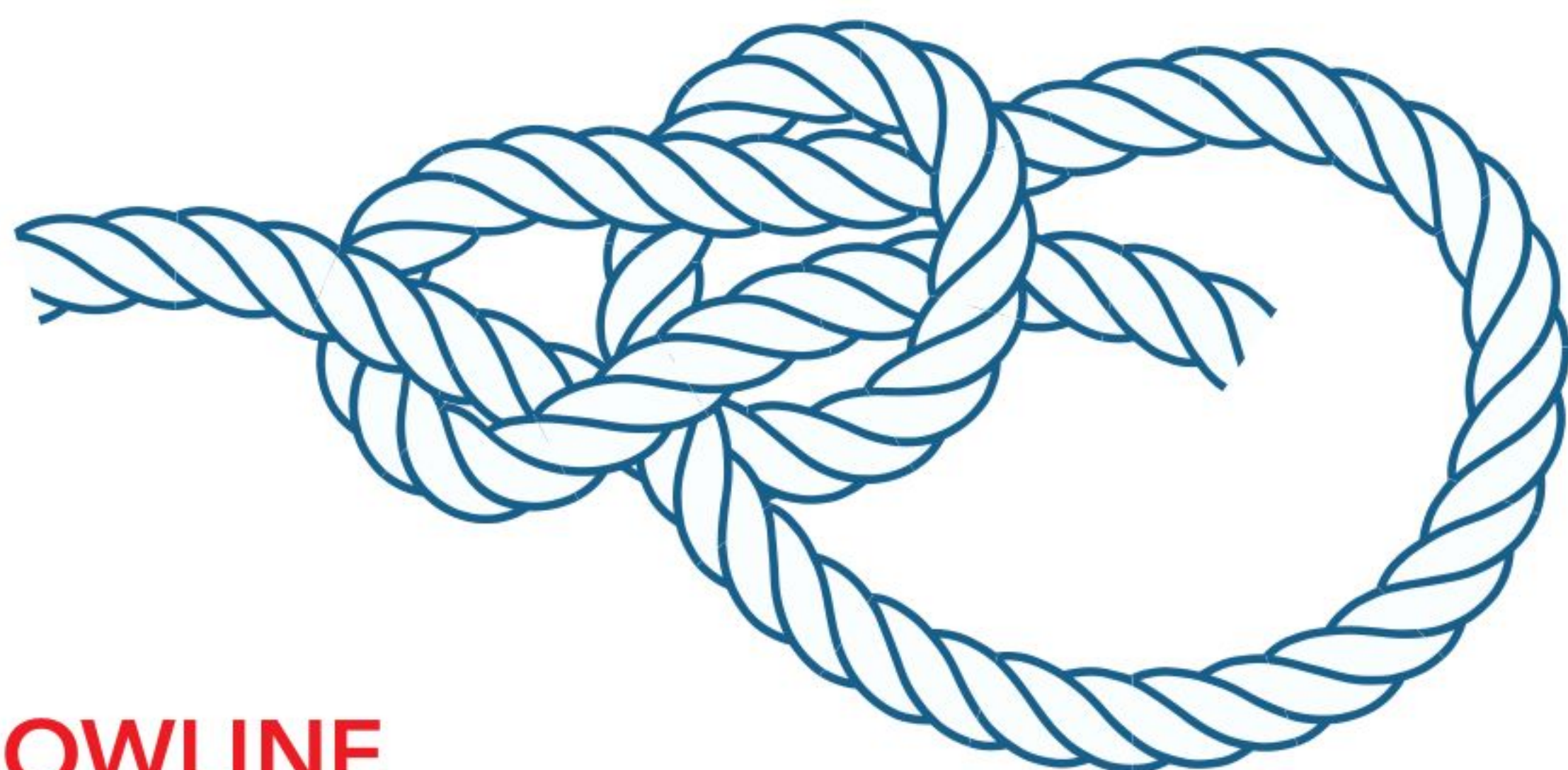
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5 knots you need to know

Master these five knots. In most cases, they're the only ones you'll ever need.

By Travis Larson



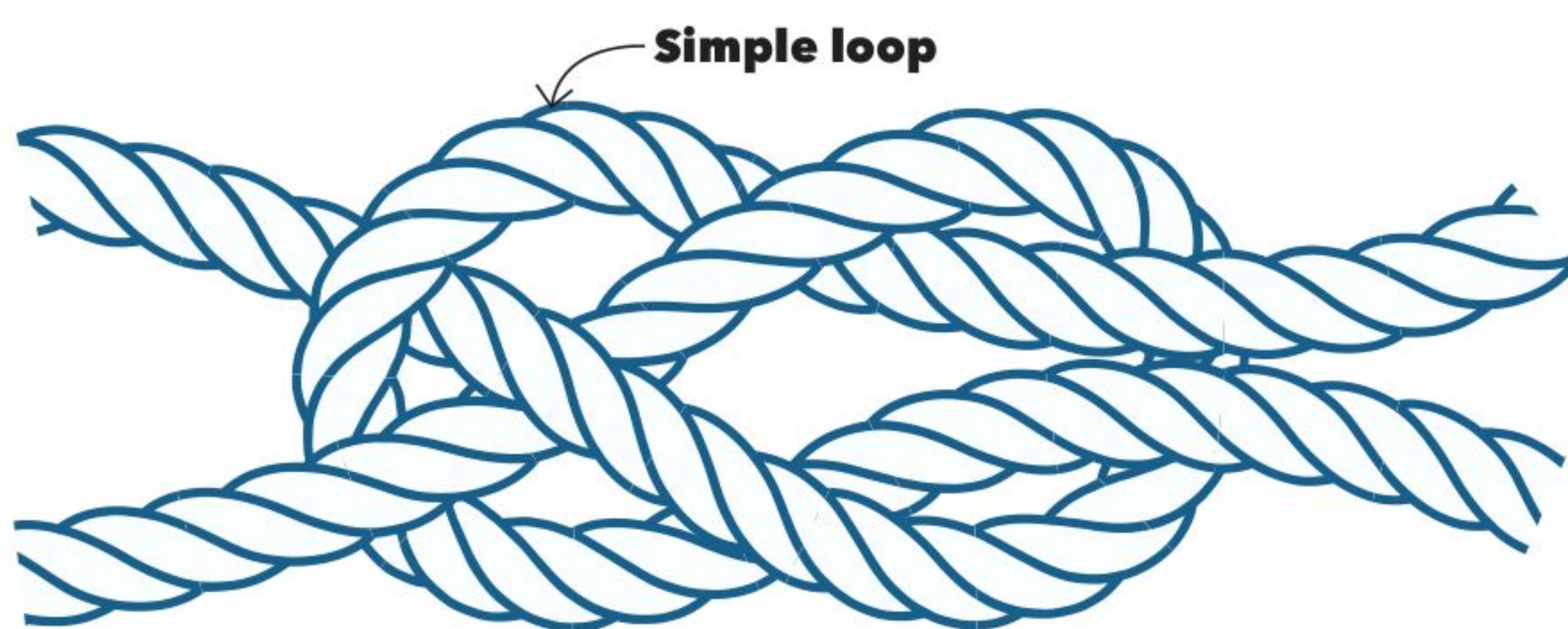
BOWLINE

Use this knot to tie super-strong loops that can be easily untied. The bowline knot makes a secure loop at the end of a rope. And it has many uses; for example, you can use these knots to fasten a mooring line to a ring or a post.



FIGURE 8

A figure 8 is ideal when you need a stop knot in a rope. It could be for a series of knots in a climbing rope or at the end of a rope to serve as a hand grip. Sailors use it to keep lines from falling through pulleys on a sailboat.



SHEET BEND

These knots are recommended for joining two ropes of unequal diameters. The thicker rope should be the one with the simple loop at the end. It also works for similar-size ropes.



SQUARE KNOT

The square knot is used when you need to join two similar-size ropes together. It's the easiest way to lengthen a rope. It's also the go-to knot for securing parcels and rolled-up items such as tarps.



DOUBLE HALF HITCHES

Half hitches are for tying boats to piers, tent lines to stakes, and for many other uses.

To watch Travis tie these knots, search for "5 knots to know" at familyhandyman.com

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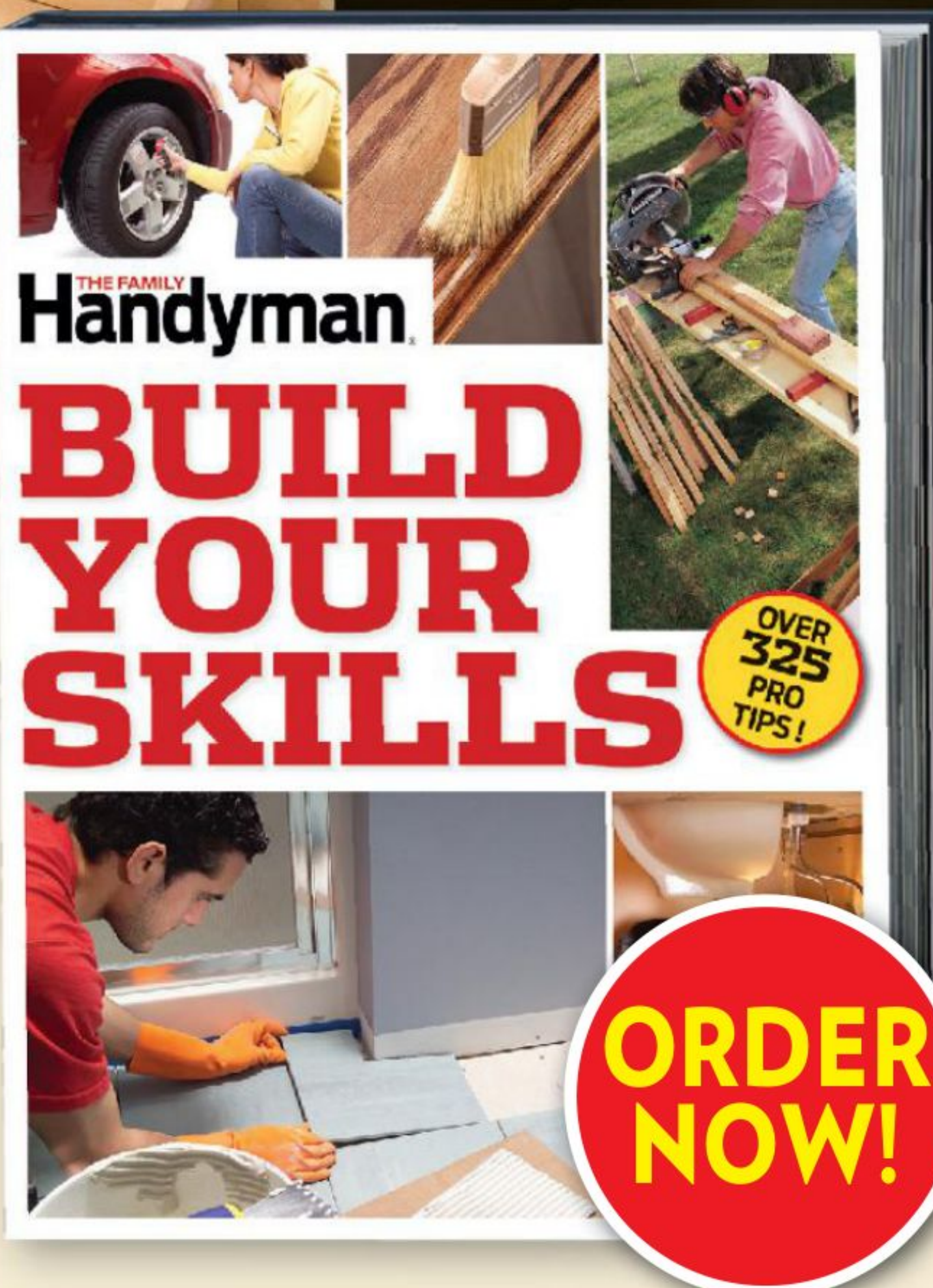
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