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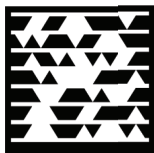
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A photograph of a wooden deck with a stone fireplace and a window overlooking a lake. The deck is made of light-colored wood and has a dark brown railing. The fireplace is made of rough-hewn stone and has a dark metal grate. The window is framed in dark wood and looks out onto a lake with trees in the background. The text "Last-Deck" is overlaid in large, white, italicized font, and "THE LAST DECK YOU WILL EVER NEED" is overlaid in smaller, white, all-caps font below it.

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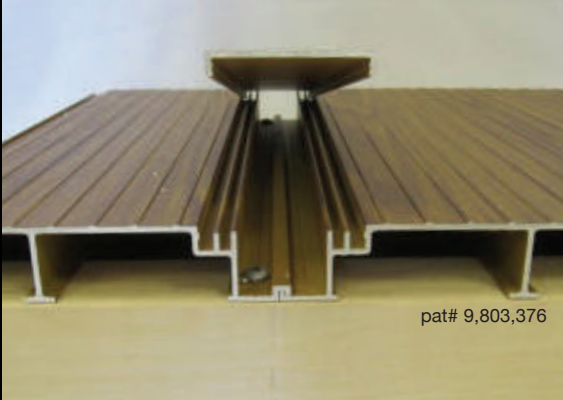
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It's difficult to write about the wonders of the sun, the very center of our solar system and provider of all life, without stating what should be blatantly obvious to anyone with a brain. So, I'll skip that and instead focus on one benefit of this heavenly being that might not be so obvious to the average homeowner: Sunlight improves indoor air quality.

This is something you might have suspected instinctually, but now you have scientific data to back it up. A research team at the University of Oregon set up an experiment with miniature dust-covered rooms to compare how the dust is affected by daylight through regular glass, by ultraviolet light only, and when kept in the dark. The study used dust collected from actual homes, and the dollhouse-sized rooms were placed outdoors while maintaining normal room temperature.

After 90 days, the bacteria analysis confirmed what your intuition might have suggested. The rooms exposed to daylight had about half the viable bacteria compared with dark rooms. Rooms that were exposed only to UV light had just slightly less viable bacteria than ones exposed to daylight. This was surprising because UV is known to be an effective disinfectant (used to clean drinking water), although most modern window glass filters out UV light. My takeaway is that those UV-inhibiting windows will still do a good job letting the sunlight improve your home's air quality, if you leave the drapes open and raise the blinds.

The daylight rooms also had less of the types of bacteria associated with human skin cells, which people shed indoors. Notably, the study showed fewer human-associated bacteria from a type known to cause respiratory disease.

Life, light, heat, the center of gravity around which earth orbits, and now better indoor air quality—the sun provides it all. I'm a big fan.

Since a healthier home is a happier home, keep these findings in mind. Open your curtains this winter to let the sunshine help heat your home naturally, and you'll get the added benefit of cleaner air too.



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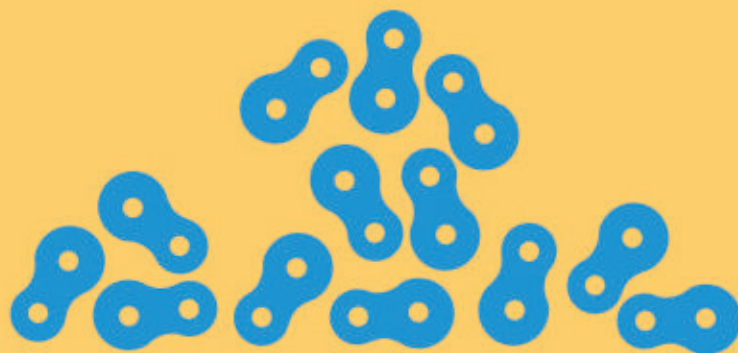
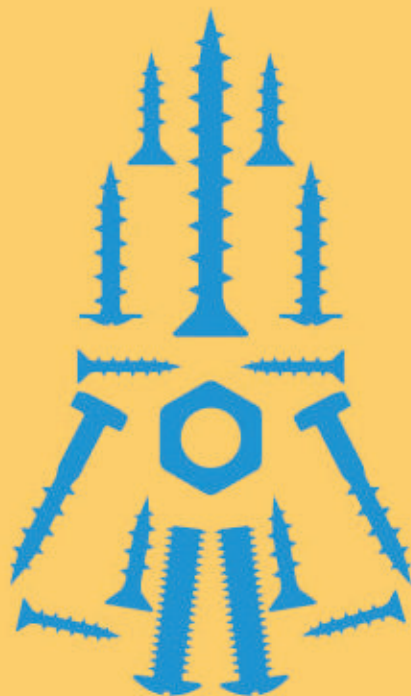
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Q: How does a plasma cutter cut metal?

A: One common description of plasma is to describe it as the fourth state of matter (aside from solid, liquid and gas). The difference between these states relates to their energy levels. When we add energy in the form of heat to ice, the ice melts and forms water. When we add more energy, the water vaporizes into hydrogen and oxygen (steam). By adding more energy to steam, these gases become ionized, causing the gas to become electrically conductive. This electrically conductive, ionized gas is called plasma.

The process of plasma cutting electrically conductive metals uses this electrically conductive gas to transfer energy from an electrical power source through a plasma cutting torch to the material being cut. The basic plasma arc-cutting system consists of a power supply, an arc starting circuit and a torch. These components provide the electrical energy, ionization space capability and process control necessary to produce high-quality cuts on different materials. The power supply is a constant current DC power source. The open circuit voltage is typically in the range of 240 to 400 VDC. The output current (amperage) of the power supply determines the speed and cut thickness capability of the system. The power supply provides the energy to maintain the plasma arc after ionization. The arc starting circuit produces an AC voltage of 5,000 to 10,000 volts at approximately 2 megahertz. This voltage is used to create a high-intensity arc inside the torch to ionize the gas, thereby producing the plasma. The Torch serves as the holder for the nozzle and electrode, and provides cooling (air) to these parts. The nozzle and electrode constrict and maintain the plasma jet, which reaches temperatures up to 40,000° F, quickly piercing through the metal work piece and blowing away the molten material. (Source: Forney Industries)

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Q: I'd like to upgrade the handrail system of my staircase. How are the newel posts typically fastened to the floor?

A: Often, a newel post will be fastened with a metal bracket that surrounds its base. The bracket surrounds the post and is screwed into all four sides as well as to the floor. Wood molding is then applied to the

bottom of the newel to conceal the metal bracket. To remove a newel for replacement, first pry off the wood molding and then unscrew the fasteners from the mounting bracket.

If you don't want to use wood molding, you can mount the post through the floor and tie it into the framing, which is by far the strongest and most durable method of installation (but also the most difficult). An easier alternative for a molding-free installation is to use a hanger bolt with a steel insert. The floor is drilled to accept the steel insert where the center of the newel post will be, and the insert is then installed. The hanger bolt is then threaded into a predrilled hole in the center of the post. The hanger bolt is placed into the insert, and the post is threaded down tight. The most secure way to tighten the hanger bolt is to drill a 1-inch hole in the side of the newel that intersects the hanger bolt. This access hole allows you to thread a nut and washer onto the end of the hanger bolt, and then conceal the hole with a wood plug. **EHT**

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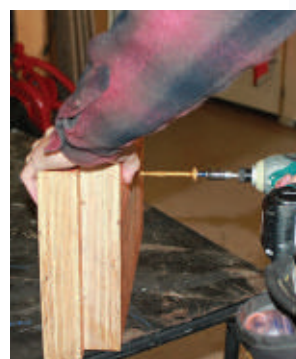
Keep it Together

Advancements in Fasteners



or below the surface of the surrounding materials for applications including decking, framing, sub-floors, fencing, lattice, shelving and more.

New to the U2 Fastener lineup are the code-compliant Construction Structural Screws designed for joining multi-ply LVL, LSL and PSL. The new sizes range from 3-3/8 to 6-3/4 inches. The U2 Construction Screw is the next generation of fasteners that are replacing lag screws (structural and ACQ-treated lumber code-compliant in IAPMO report ER-454). The screw's Dome Head



You can't overstate the importance of reliable fasteners, and that's why industry leaders routinely upgrade their product lines to make them stronger, easier to use, and more rust-resistant than ever. Here's a look at some new and improved products that help hold the world together.

INNOVATIONS FROM U2 FASTENERS

When it comes to construction and decking screws, the *EHT* team has virtually abandoned the old Phillip's head type of fastener because of their tendency to slip,

strip or "cam out" while driving them. When we go to work, we prefer the star-drive heads, because the driver bit sinks snugly into the recess of the screw head and holds tight when you pull the trigger.

Leading the pack of these star-drive screws is U2 Fasteners, which feature a Tight Star Recess system designed to grasp the star-drive U-Bits so tightly that they can be installed with one hand. U2 Fastener's Universal Screw is like a "deck screw on steroids"—a countersink fastener that allows the head to sit flush

enhances its structural capability. The Tapper Point consists of the Cork Screw Start and Blade Cutting Thread for easy piercing to alleviate strain on the material. Underneath the screwhead, the Talon Grip holds the screw tight to prevent loosening and uses its ribs to dig into the material when countersunk. Below the smooth shank is the Reamer Thread, which enlarges the hole in the material to create a larger passage when drawing materials together and reduces tension on the screw head.

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3 ZINC-RICH PRIMER

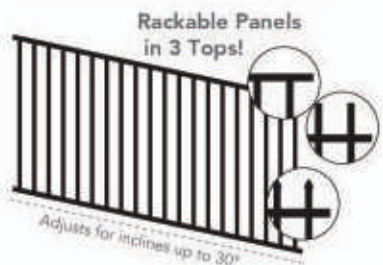
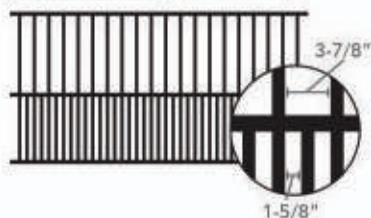
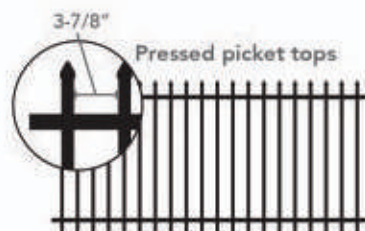
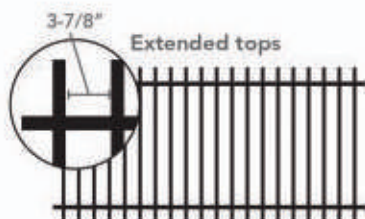
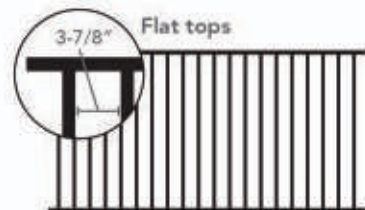
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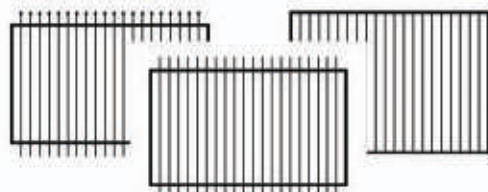
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POCKET MASTER FACE FRAME SCREW

Pocket-screws can make strong woodworking joints, preferred by many pro carpenters for their reliability and by DIY'ers for their ease of use. Pocket-hole joinery

relies on a two-step process. First, use a special "stepped" drill bit to drill the pocket hole. The bit has a 1/2-in. diameter shank to countersink the screw head, but also features a narrower tip that drills a pilot for the shaft of the screw. This initial pocket hole is drilled at an offset angle with the help of a special jig. The user clamps the jig onto the edge of a board and drills through the jig's guide holes, which hold the bit at a precise angle and depth. Drill the holes, add wood glue along the

mating edges of the boards, reassemble, and then drive in the pocket screws to secure the joint. Pocket screws provide a handy way to assemble furniture, build shelves, make face frames and more.

Traditionally, pocket-screw manufacturers offer a fine-thread screw for hardwoods and a coarse-thread screw for soft woods. Some even had a Hi-Lo thread in stock for medium-density woods like cherry and poplar. New from Pan American Screw,



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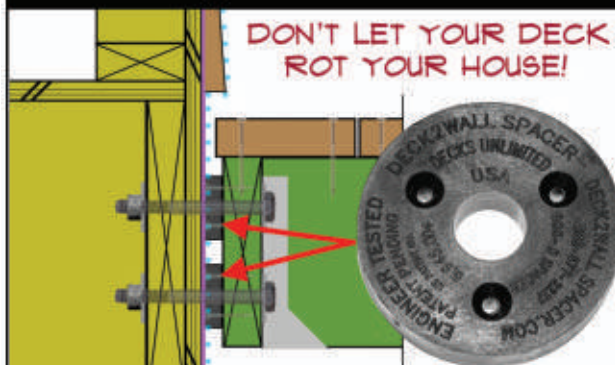
The **Squeeeek No More®** kit stops floor squeaks through carpeted floors using a special screw that passes safely through the carpet. When used on hardwood floors, the screw breaks 1/5 of an inch below the surface of the floor. A small hole is left that can be easily concealed with wood filler.



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the Pocket Master Face Frame Screw is a single pocket screw for any type of material. It is a patent-pending product that incorporates the patented Lo-Root thread design with an extra-long Type-17 cutting point that practically eliminates splitting and cracking in hardwood frames. The coarse thread style works equally well in softer materials. It has a fillister style head to offer the best clamping strength on the market and has a genuine #2 Robertson square recess to eliminate driver bit slippage. Several large cabinet manufacturers in the United States have already switched to the new Pocket Master fastener because it greatly reduces splitting and cracking of their hardwood frames, while increasing holding power and speeding up

their assembly times. Visit www.panamericanscrew.com.

SURE HOLD FASCIA BOARD SCREW

Sure Drive USA has launched a new composite fascia board screw that installs without the need for an expensive countersink bit. The Sure Hold fascia board screw has wings that auger through the fascia and trim board, creating an oversized hole. The oversized pilot hole allows for the expansion and contraction movement and keeps fascia board panels straight. No pre-drilling is required. The Sure Hold screw has a self-starting Type-17 auger tip that eliminates splitting and starts faster.

The oversized flat top head covers the oversized pilot hole and comes in a variety of



colors. Mahogany, Earthtone, Graystone, Ipe and White painted heads are available to match your composite fascia board project. Made from strong 410 grade coated stainless steel, these screws will hold up to a variety of extreme weather conditions. The recommended installation spacing is to install a minimum of two screws vertically at the end of the board then alternate in a zigzag pattern and install a screw every 12 inches, then finish with two screws at the end of the board. Visit www.suredrive.com.

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the surrounding wood to form a substance-to-substance bond. The process allows hardly any water absorption, so there's no expansion, they're resistant to fungal infestation, leave no streaking

or bleeding on the wood, and the wooden nails are more environmentally friendly than metal fasteners. They also eliminate thermal bridges for better insulation values. Suitable

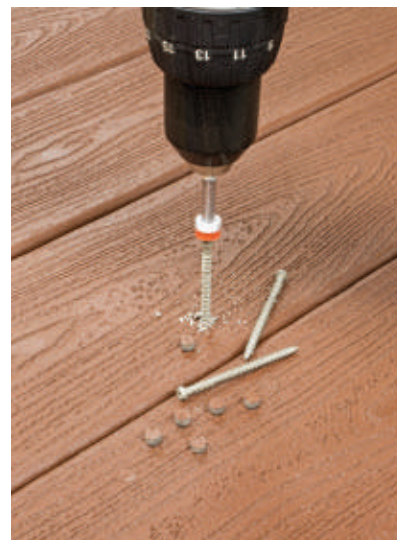


applications include interior timber cladding, timber façades, wooden fences, wooden furniture, sauna building, boat building and more. Visit www.beck-lignoloc.com.

DECK-DRIVE DCU SCREW PLUG SOLUTION

Simpson Strong-Tie has introduced the Deck-Drive DCU screw plug solution, a complete hidden deck-fastening system comprised of the Simpson Strong-Tie premium DCU Composite screw, the DCU screw plug and an Auto-Set Driver bit (each sold separately). Ideal for decking and trim applications using composite or PVC lumber, the DCU screw plug solution offers a simple way to cover exposed fastener heads that's as easy as drive it, plug it, and tap it flush. With the deck plug solution, screw heads are invisible, creating a smooth, professional finish.

Made from major composite and PVC board manufacturers' materials in a variety of colors and finishes to match deck and trim boards, DCU screw



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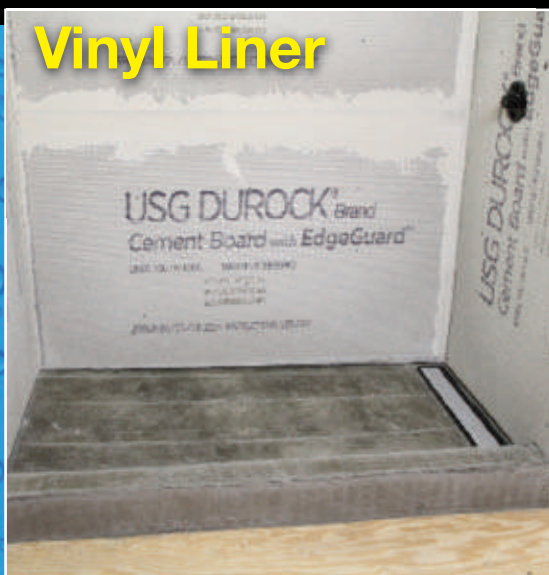
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Goof Proof Linear Drain

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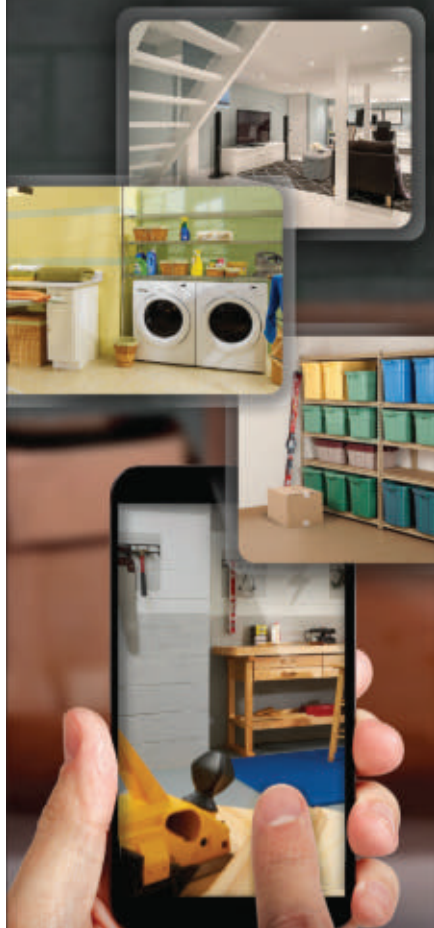
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TOOL SCHOOL

plugs work well with hand-drive applications, as well as with the Quik Drive PRO300S auto-feed screw driving system. The Auto-Set Driver bit features a non-abrasive depth stop to automatically countersink screws for inserting the plugs, which are easily secured in

place with the gentle tap of a hammer.

Simpson Strong-Tie is packaging the screws and plugs separately from the 39 different composite and PVC lumber colors and finishes currently available. Visit strongtie.com/dcuscrewplugs.

EHT

WORKING WITH SLEEVE ANCHORS

A brick wall requires different fasteners than a stud wall. Although concrete screws work well for many masonry applications, when it came to mounting a wall bracket for a large television on a recent job, we went with the strength of Sleeve Anchors. These threaded steel fasteners basically consist of a round-head bolt covered with a zinc-coated sleeve that expands inside the wall for a secure hold. Use them for fastening into concrete, hollow block, grout-filled block and brick. They're ideal for fastening hand rails, window frames, partitions and more.

To use a sleeve anchor in a brick wall:

First, mark the fastener location in a mortar joint.



Next, select a masonry drill bit with the same diameter as the sleeve anchor (often included with the anchor).



Use the masonry bit and a hammer-dill to drill the pilot hole. If using multiple anchors for the application, drill all the pilot holes.



Thread the nut (supplied) on the end of the sleeve anchor so it sits flush with the end of the bolt.



Position the item to be mounted (TV bracket, in this case), and use a hammer to drive the sleeve-covered anchor into the pilot hole up to the nut collar.



Use a wrench to tighten the nut, which draws the bolt through the sleeve and causes it to expand and tighten against the surrounding mortar, brick or concrete for a very tight hold.

MOUNTING WITH CLEATS

A French cleat is a way of fastening a mirror, cabinet or artwork to a wall. A traditional French cleat is a wood molding with a 30- to 45-degree slope that hooks onto a supplementary piece of molding on the wall to hang cabinets or other objects.

These days, similar cleats are available in metal versions. The cleats can be used in pairs, and the wall side of a cleat can be mounted securely without having to hold the full weight of the item you're securing. Once the cleat is secured to the wall, the cabinet can be simply lifted onto it. Because no fine maneuvering is required, even a relatively heavy item can be hung easily this way. The mirror, cabinet or artwork can then be shifted left and right slightly after it is hung, for perfect positioning. The bottom of the cabinet can be secured to the wall to be sure that it will not get pushed off the cleat while in use.

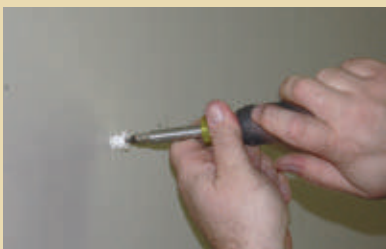
We recommend that at least one of the two fasteners you use for each mounting cleat be securely driven into a wall stud. When fastening into drywall alone, we recommend using plastic self-drilling wall anchors (rated for 79 lbs. each), because when a screw is driven into it, the rear of the anchor spreads on the back of the drywall to lock the screw against the wall.



Determine your mounting height and mark the fastener holes. Carefully level the series of fastener holes that will hold the cleat(s) to the wall. Make sure at least one fastener for each cleat will be mounted into solid framing.



When fastening into drywall with no stud, we recommend using drywall anchors rated for 79 lbs. each.



The plastic drywall anchors are self-drilling, so there is no need for a pilot hole.



Drive screws through the cleat and into the wall studs and drywall anchors.



If using two cleats, double-check that they're aligned even and level, and make sure they're spaced correctly to hook the cleats on the back of the mirror.



Shown here are the mirror cleats that will hook onto the wall cleats.



Recruit a helper when lifting the mirror into place. Make final adjustments to the left and right for the perfect position.

2019 INTERNATIONAL BUILDERS' SHOW PREVIEW

The 2019 Builders' Show will bring together more than 1,500 top manufacturers and suppliers from around the globe in 600,000 net square feet of exhibit space, showcasing the latest and most in-demand construction products and services.

Attendees can also tour the two official show homes. The New American Home, located in Henderson, Nevada, is distinguished by incorporating a wide variety of contemporary-modern design, characterized by minimal decoration, abundant glass and flat rooflines. The New American Remodel will exhibit the latest trends in the housing industry and advancements in technology and energy-efficiency.

In addition to showcasing the latest home design and tech trends, visitors to the show will get first look at the latest tools and materials that will define construction for the years ahead. Here's a preview of what you can expect to see at the convention, and what you'll be missing if you can't make the trip.



ABATRON

Abatron, Inc. manufactures a complete line of structural repair products for wood, concrete and metal, specializing in epoxy technologies with many products that are GreenGuard Certified. LiquidWood and WoodEpox have been used for over 30 years to make permanent, cost-effective repairs to wood. Abocrete and Aboweld 55-1 make extremely durable repairs to concrete where other products wouldn't stand a chance. The company's newest product is Tread Spread, offering a slip-resistant surface for areas that need additional traction. It spreads onto virtually any surface and is much more durable than traditional strip tapes. Visit booth C2765 or www.abatron.com.

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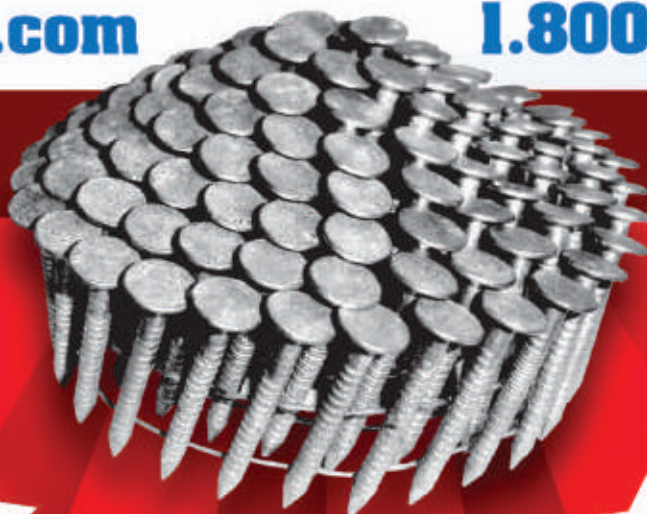
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KERDI SHOWER TRAYS AND MORE

Custom tiled showers continue to grow in popularity as homeowners strive to create spaces that reflect their specific needs and desires. Each one is a little bit different. To help create these unique spaces more easily, Schluter-Systems is now introducing 16 new prefabricated, sloped trays for showers with the Kerdi-Drain point drain and Kerdi-Line linear drain. These additional shapes and sizes will make it much easier for homeowners and construction professionals to choose a tray that suits the size of the shower they are building. In addition to increasing the number of sizes available, all Schluter shower trays now feature integrated Kerdi waterproofing on the top of the tray. All shower areas must be made completely waterproof

before tiles are installed, so trays with the waterproof membrane pre-installed remove a step from the construction process. The pre-installed waterproofing on these shower trays is easily integrated with Schluter drains and waterproof walls to construct a completely waterproof and vapor-tight environment.

Curbless shower areas have also exploded in popularity in recent years. They have become a very popular design choice for aesthetic reasons and to assist homeowners with aging in place or managing reduced mobility. One of the challenges when constructing curbless showers is to effectively manage height changes between the bathroom floor and the shower floor. To make this process easier, Schluter is introducing three reduced thickness shower trays. These Kerdi-Shower-TT trays

feature perimeter heights of 1 inch or less to simplify the design and construction of curbless shower entries. This change in tray design will allow more people to have curbless showers installed in their homes. Visit www.schluter.com or booth N1139.

ALL AMERICAN WOOD REGISTER

AAWR is manufacturer and distributor of soft and hardwood heating and air conditioning registers/vent covers, mouldings/trim and stair treads/risers, as well as custom transitions and other wood products (newel posts, columns, spindles, table tops, chair legs,



wall panels, floor tiles and sports platforms). An onsite design engineer can assist you with your special project solution. Standard stock items are shipped within 24 hours, and most custom work is manufactured and shipped within 48 hours. Visit www.allamericanwood.com or booth SU4127.

AZEK IMPRESSION RAIL EXPRESS

AZEK Building Products' new Impression Rail Express features a sleek, contemporary style in a pre-assembled aluminum railing panel system engineered for quick installation at the job-site and lasting safety for the homeowners. With



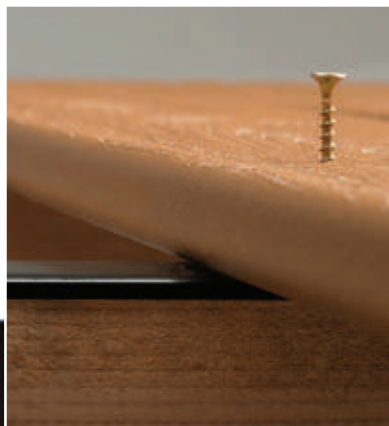


no hammers or special tools required, Impression Rail Express features easy assembly on both level and stair applications. Scientifically engineered to last beautifully, Impression Rail Express achieves the sophisticated look of wrought iron with a powder-coated finish and subtle texture in three colors: White, Black and Dark Bronze. The durable finish resists weather and corrosion over time and is backed by a 25-year warranty. Impression Rail Express features a patented technology to securely lock each baluster in place for a rattle-free, full-contact connection without a weld for better aesthetics. Like all AZEK Railing Profiles, Impression Rail Express is certified by third party accredited agencies to meet or exceed IRC requirement. Learn more at AZEK.com or booth N1273.



TREX PROTECT JOIST TAPE

Trex Protect Joist Tape and Beam Tape is a self-adhesive butyl tape designed to protect wooden joists and beams from moisture that can lead to rot, splitting and the loosening of deck screws and fasteners. Trex Protect works on horizontal and vertical surfaces and is applied as a “cap” (vs. wrapping), which allows the wood to breathe. This butyl-based self-adhesive tape is superior to asphalt-based joist tape and beam tape because it won’t bleed, dry out as quickly, or curl up and hold water. As a result, it acts as a



moisture barrier between wood and galvanized metal commonly used in construction hardware. Trex Protect Tape has two widths, making it easy and convenient to apply to double beams and joists. Use 1-5/8-in. Joist Tape for joists and 3-1/8-in. Beam Tape on all double beams. Visit trexprotect.com or booth N1113.

MAZE NAILS

Maze manufactures quality double hot-dipped nails for fiber cement siding, cedar and red-wood siding, roofing, cedar shakes and shingles, PVC trim products, decking, fencing and post frame building construction. The Maze Double Hot Dipped Galvanized Ring-shank Roofing Nails are Miami Dade County Approved.



All Maze Nails are 100-percent Made in the USA from recycled re-melted steel, making them eco-friendly for sustainable building practices. Visit www.mazenails.com or booth C7946.

FASTER, EASIER CAMO EDGE FASTENING

CAMO Edge Fastening is an innovative fastening system that is a faster, safer and easier way to fasten deck boards. It actually fastens into the edge of the deck board and into the joist. The system consists of guides, proprietary screws and drill bits that create a beautiful, fastener-free surface

that is “barefoot approved” for virtually any type of decking. It ensures a safer deck that won’t rack or come up because it’s fastened on both sides of the board. Simply load the proprietary deck screws into the hand-held guide that positions them to be driven into the edge of the deck boards and provide automatic gapping. Special driver bits are included with the screws to ensure depth of drive.

CAMO offers several guides including the Marksman Pro, Marksman Pro-X1, MarksmanPro-NB and the no-gap guide, Marksman Edge, which range in cost from \$20 to \$50. They work with any decking material—composite, PVC, and most soft and hardwood species, with variations to accommodate nominal 6-in. boards as well as narrow boards. CAMO also features a variety of spacing choices, including a no-gap option for treated wood decks that can also be used with secondary spacers when

wider gaps are desired. The company’s comprehensive warranty not only covers the CAMO screws, but also the deck boards when installed with the CAMO system as an added assurance to the deck board manufacturer’s warranty. If the deck boards are damaged by CAMO fasteners when installed following the manufacturer’s installation instructions, CAMO will replace the damaged deck board. To learn more, visit www.camofasteners.com or booth N963.

DRYERBOX DB-480

Give the dryer some space, with the DB-480 from Dryerbox. Made in the USA, the Dryerbox is a recessed exhaust receptacle installed during new construction to prevent bends or kinks—problems that can lead to a home fire—in the flex duct hose. With the Dryerbox, the dryer can be placed flush to the wall without crushing the exhaust hose or otherwise restricting airflow. For



builders who choose the DB-480, they’re not only providing a higher level of home safety to their customers, they’re providing freedom of design, energy efficiency, and a product that shows homeowners they care about their craft and their customers. Visit www.dryerbox.com or booth SU3607.

CLIPSTONE MORTARLESS STONE VENEER

ClipStone will be showcasing several new profiles at IBS 2019, among them: Osceola ProStack. Osceola has long been one of the most popular colors in the Environmental StoneWorks’ showroom, and has now made the move over to ClipStone. Picture a clear, Arctic white with just a hint of blue—that’s the clean, sparkling beauty of Osceola. ClipStone Mortarless Stone Veneer was the first individual mortarless stone veneer installed with common tools, and has since grown exponentially. Now available



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The SKY030

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The SKY030 spiral staircase, available in 3 diameters — 47, 55 and 63 in. — is manufactured in steel with a particular treatment (Sendzimir process) that consists in galvanizing steel by using a small amount of aluminum in the zinc bath and producing a coating with essentially no iron-zinc alloy. This process guarantees high resistance and durability. In addition the metal is powder coated. The final result is a staircase that is specifically made for outdoor installations because of its resistance to atmospheric elements.



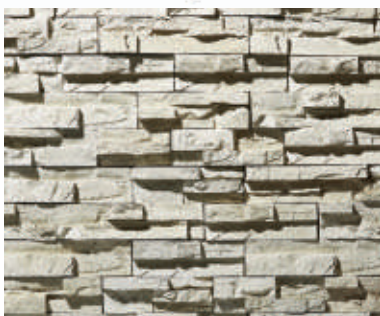
- The SKY030 stair treads are made of solid steel, ventilated to provide a slip-resistant surface even when wet.
- Additional riser kits can be purchased separately.
- The stair be used in square or mezzanine applications.
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- Each kit is shipped complete with detailed assembly instructions to assist in your installation.



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nationwide through quality building material retailers, ClipStone features a no mortar, no mess installation and is offered in two profiles: LedgeStone and ProStack. Visit www.myclipstone.com or booth C2241.

CALCULATED INDUSTRIES CONSTRUCTION SOLUTIONS

Calculated Industries (CI) introduces its new 10-in. Digital Level and Duo Pro Pin and Pinless Moisture Meter, both to be displayed at this year's Builders' Show. The new Accumaster 10-Inch Digital Level provides $\pm 0.2^\circ$ accuracy along with versatility to check pitch in inches of rise per foot; slope in percent or degree,

along with true level and relative angle measurements. The Accumaster Duo Pro Pin & Pinless Moisture Meter combines the best of both worlds with moisture meters. Using its pin function enables you to get precise moisture readings in a narrow area. The pinless option allows you to check moisture up to 3/4 inch into a hard surface without marring the facade.

In addition to the new tools, CI will provide live demos of their popular builder calculators and take-off tools. Including the industry-standard construction math calculator the Construction Master Pro available as a handheld calculator, a desktop calculator, a mobile app and for PCs. Additionally, other members of the Construction Master family will be available for review including trade-specific calculators for

Concrete, Excavation, Landscape, Electrical, Pipefitting, Estimating, Machining, Welding and more.

Calculated Industries also offers Scale Master Pro estimating and takeoff tools that help speed up takeoffs from out-of-scale blueprints as well as Wheel Master digital measuring wheels to measure jobsites, athletic fields and landscape projects. CI's laser measuring tools enable one person to measure jobs quickly and exactly. Visit www.calculated.com or booth SU928.

FORCEFIELD AIR & WATER BARRIER SYSTEM FROM GEORGIA-PACIFIC

Ideal for residential or light commercial construction, the ForceField Air & Water Barrier System from Georgia-Pacific consists of engineered wood sheathing panels which are laminated with a proprietary air and water barrier. Installation is easy: ForceField panels install





just like standard OSB or plywood sheathing. Once installed and taped with ForceField seam tape, the system creates an integrated air and water barrier for your structure, eliminating the need for separate house wrap. Time and labor costs are saved, which ultimately lowers the total installation cost. Visit www.gpforcefield.com or booth C3338.

CAESARSTONE

Caesarstone is a leading manufacturer of premium quality quartz surfaces. Established in 1987, the company pioneered high-quality surfaces utilizing advanced technologies and expertise. Caesarstone continues

to lead the industry with new trends and colors of high-quality surfaces consisting of up to 93 percent quartz, they retain the cool tactile qualities of nature's strong stones with enormous application possibilities including kitchen countertops, bathroom vanities, wall panelling, furniture and more. Caesarstone's rich variety of colours, patterns and textures enable customers to find their 'ultimate surface' and create their own unique space. The company's extensive designs are constantly evolving and developing to meet the latest global trends and the highest level of international quality standards. Visit www.caesarstoneus.com or stop by booth N1163.



CULTURED STONE

Cultured Stone originated the manufactured stone veneer category and continues to lead the industry. Backed by a 50-year limited warranty, Cultured Stone products are engineered to meet the strictest requirements in the industry and contain an average of 50 percent pre-consumer recycled content. Pro-Fit Terrain LedgeStone is a perfect option for builders, architects and remodelers looking for a precision-fit stone veneer that meets today's highest green-building standards. Available in four color palettes—Arctic, Ethos, Trek and Arcadia—the new line blends fine Cultured Stone textures and relief patterns



to provide exquisitely engineered, contemporary design options. Like all Pro-Fit products, Terrain LedgeStone offers a practical way to achieve a tailored ledge-stone look with small-scale, low-relief stones. It's quick and easy to install because it isn't applied one stone at a time. Instead, the primary building blocks are groups of small stones meticulously bundled together to form modular components of equal height. Visit www.culturedstone.com or booth C4519.



ELDORADO STONE

With more than 150 color palettes, 20 national profiles and over 30 regional profiles, Eldorado Stone has the perfect fit for any residential or commercial project. The company currently operates manufacturing facilities in several states with regional distribution centers across the U.S., creating authentic architectural stone and brick veneer, fireplace surrounds, fire bowls and outdoor living products. Every stone and brick is cast from a special mold of an actual natural stone, then hand-painted by artisans and arranged by hand into various configurations to make sure the forms complement each other with regard to shape, texture, size and detail. One of the company's most popular products is a profile that embodies the timeless charm of weather-worn, aged barn wood and preserves it in a durable, low-maintenance form. Vintage Ranch reveals the authentic look and feel of oak, Douglas fir and pine in an easy-to-install panelized format, combining planks of varying

height and depth to provide the ambiance of real wood in a variety of indoor and outdoor spaces. Made of concrete, Vintage Ranch is durable, sustainable and easy to install. Visit eldoradostone.com or booth C4519.

BAMDECK COMPOSITE DECKING

Cali Bamboo's ultra-modern bamboo composite decking is being relaunched as BamDeck 4G with an updated construction. The new planks maintain customer-favorite features like a smooth, matte finish and recycled composition. The redesigned planks are scalloped on the bottom and grooved on the sides for easy, DIY installations with Cali's universal hidden fastening system. Planks come in a wide plank size (8 ft. long x 8-1/4 in. wide) and in extra-long (16-ft. long x 5-7/16 in. wide). In a world of composite decks all attempting to mimic wood, BamDeck's understated texture and classic, versatile colors stand out from the pack. Planks sport a solid composition with uniform hues from top to bottom and never require sealing or staining. Best of all, BamDeck 4G retains the same sustainable bamboo composite formula eco-minded





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35th Anniversary 17" Heavy-Duty Bandsaw

This beautiful 17" Heavy-Duty Bandsaw with satin jet-black textured finish paint and orange accents will not only look great in your shop, it also delivers rock-solid performance at an incredibly low price! Offered in celebration of Grizzly's 35th anniversary, this bandsaw is chock-full of features found on machines costing much more—like a 2 HP motor, 16 $\frac{1}{4}$ " throat capacity, 12 $\frac{1}{4}$ " cutting height, deluxe extruded-aluminum fence, heavy-duty miter gauge, dual 4" dust ports, micro-adjusting geared table tilt, blade-tension indicator window, blade tracking window, and European-style roller-disc blade guides.

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SPECIFICATIONS:

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- Table size: 17" W x 17" L x 1 $\frac{1}{2}$ " D
- Table tilt: 10° left, 45° right
- Floor-to-table height: 37 $\frac{1}{2}$ "
- Cutting capacity/throat: 16 $\frac{1}{4}$ " L of blade
- Maximum cutting height: 12 $\frac{1}{4}$ "
- Blade size: 131 $\frac{1}{2}$ " L
- Blade sizes available: $\frac{1}{8}$ "–1" wide
- Blade speeds: 1700 and 3500 FPM
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- Pre-formed steel wheel covers
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- Footprint: 27" L x 17 $\frac{3}{4}$ " W
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Blade Tracking Window and Quick-Release Blade Tension Lever

FEATURES:

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- Blade tension indicator window
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installers love. Planks are made of 60-percent reclaimed bamboo fiber left over from the bamboo flooring manufacturing process, and 40-percent recycled HDPE (high density polyethylene) plastics. This unique composition makes planks better protected from the elements and resistant to mold, mildew and insects. Visit CaliBamboo.com or booth SU4610.

NANAWALL SYSTEMS

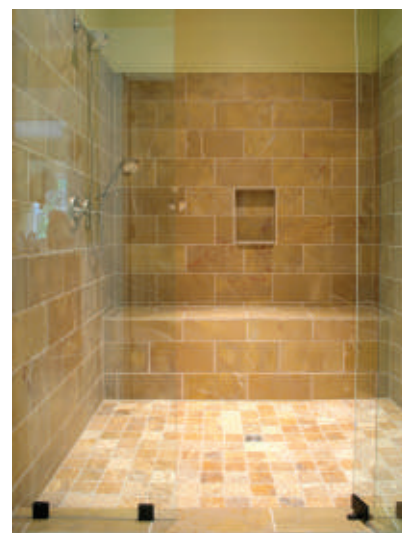
NanaWall Systems' WhiteOut is the first individual panel frameless opening glass wall system that provides visual privacy or transparency on demand for

commercial and residential applications. Using the best dynamic glass available, the glass wall panels go from clear to white or vice versa at the touch of a button. The opacity allows the system to be used as a whiteboard or projection screen for maximum space efficiency, making it a truly multifunctional product. Due to its opacity, there is no additional need for costly drapery or shades required, maintaining a clean aesthetic for any setting. WhiteOut provides privacy on demand without any vertical interruption since this all-glass system has no stiles. It is wireless and operates easily with a remote

control, and the operation of incorporated swing panels causes no interference to the glass activation. Visit nanawall.com or booth C3046.

GOOF PROOF SHOWERS

Mark E Industries has created eight products to simplify the art of shower and tile installation by focusing on some of the industry's more difficult and time-consuming tasks. These tools save the installer the valuable time required to complete such tasks, without the problems that can occur with traditional methods. Installing a shower pan is now easy, less time-consuming, and less expensive with Goof Proof products that guide the slope of the floor. The products not only assist the professional contractor but any do-it-yourselfer looking to create a tile shower installation of any size or



shape with consistently perfect results every time. A shower pan can be water-proofed with many different membranes on the market today, and the Goof Proof products such as Pre-Pitch, Kirb-Perfect, Quick-Pitch or Handi-Kirb will work with all liners currently available. Visit markeindustries.com or booth N1072.

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www.BlasterCorp.com





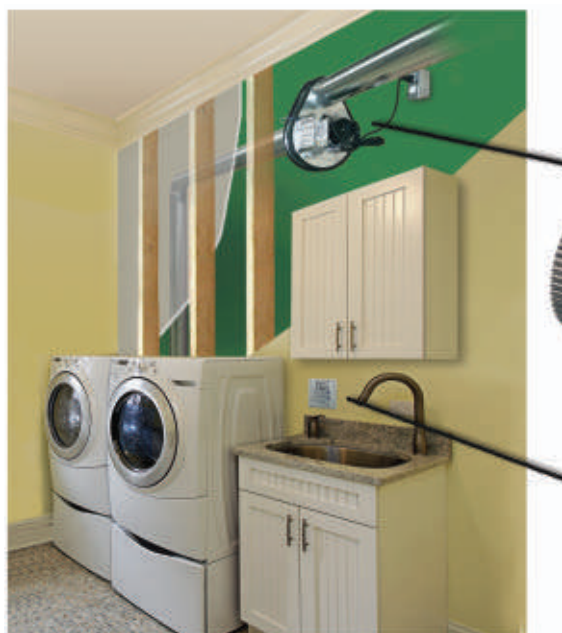
MANTIS HIDDEN DECK CLIPS

Sure Drive USA manufactures a wide variety of deck fastening solutions. The company's hidden deck fastener line includes The Mantis Clip for grooved boards, voted as the easiest hidden deck fastener to install. The RCS pneumatic tool with E-Z Slide attachment is now made by Senco to install the Mantis Clips using Ballistic Nail Screws to fasten grooved decking up to 75 percent faster than conventional methods. Mantis fasteners can also be installed using standard hand-drive screws. Sure Drive USA's Deck Pack contains enough Mantis clips and screws to install 250 square feet of decking. Mantis clips are also available in a 50-square-foot box that includes start and finish clips. The Mantis Clip is recommended by top decking manufacturers such as MoistureShield, Trex, Latitudes, ChoiceDek, Modernview and more. Made in the USA, the Mantis Clip is available in four profiles to precisely fit specific boards. Unlike other "generic" clips on the market, the Mantis is built with a base that promotes air-flow to protect the deck structure. Visit www.suredrive.com or booth C6748.

DRYER DUCT BOOSTER FAN FROM TJERNLUND

The No-Clog Clothes Dryer Duct Booster Fan enhances safety, saves energy and improves drying times. Plus, the IBC requires a dryer duct booster if duct length exceeds 25 equivalent feet. This unique LB2 booster fan offers a 5-year no-clog guarantee and the potential of reducing clothes drying time up to 60 percent to save energy, while incorporating features that allow it to be listed to the updated DEDPV, Dryer Exhaust Duct Power Ventilator supplement

to UL705. (The 2015 IRC restricts use of dryer booster fans to those tested to the DEDPV supplement.) Adding dryer booster fans in clothes-dryer ducts has increased substantially with the placement of laundry rooms that are not adjacent to outside walls. The Model LB2 booster fan is rated for duct lengths up to 150 equivalent feet. The LB2 booster fan attaches easily to 4-in. rigid or flex duct and plugs into an electrical outlet. A display panel mounted near the dryer confirms operational status and faults. It communicates via a factory-connected low voltage cable to an on-board booster fan control, monitoring performance to operate the booster fan in sync with the dryer and to stop fan operation if duct temperature exceeds 165° F (or signal if the duct becomes blocked). The heart of the LB2's effectiveness is its exclusive no-clog, lint-handling blower design to eliminate regular cleaning of lint from the housing and blower wheel. Visit www.dryerboosters.com or booth SU460.





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dusting, surface cracking and pock marking. Visit www.ugl.com or booth SU1665.

MURO AUTO FEED SCREWDRIVERS

Muro, one of the original developers of Auto Feed Technology, still remains prominent within the industry 30 years later. Speed, while important, is not the biggest advantage gained by people utilizing a Muro Auto Feed Screw System. Consistency and ease of use are more important factors and is why these tools are so popular. Gone are the sore backs and sore knees normally associated with driving screws on deck surfaces. Muro's easy-to-load 150 screw coils and no-jam design along with the height-adjustable handle allow users to work standing up for hours on end. The built-in countersinking feature removes the guesswork when driving and seating screws, ensuring the same depth each and every time.

Screw development has also come a long way over the years,



with twin fast threads and special screw tips that eliminate the need to pre-drill, and nibs under the head for countersinking. Everything can now be completed in one simple operation; just drive the screw and you're done. Plus, Muro has screws for practically any construction applications, even offering tools that can drive screws up to 4 inches long—another first in the industry. Visit www.muro.com or booth C8743. **EHT**



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THE BEAUTY OF A FIRE BOWL

By Rob Robillard

Outdoor living spaces are quickly becoming popular for cooking, entertaining and relaxation. More and more of my clients are looking to the outdoors to expand their homes and bring the same comforts they have inside to the outdoors, by creating multipurpose outdoor living spaces.

A gas fire bowl is one of those items that instantly creates an outdoor focal point and family gathering spot, and something that we always suggest to our clients as a safer alternative to a fire pit. Simply set up a fire bowl, pull up a chair, and you've created an outdoor living space—without a costly masonry remodel.

*Install an
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Point your
Neighbors
will Envy.*



THE BEAUTY OF A FIRE BOWL

FUEL—GAS IS SAFER

When deciding on an outdoor fire bowl, you'll need to determine which fuel you'd prefer to burn. This not only will come down to personal preference but will also depend on the location of your fire bowl.

If you'll be using a fire bowl near a house—such as on a patio or in a courtyard—choosing a gas or propane fire bowl makes sense. Gas fire bowls are incredibly safe to use because they produce no sparks or hot embers, making them an ideal choice for homes in dry areas.

The absence of these sparks and embers allows you to gather around your fire bowl without worrying about the possibility of forest fires or even fires in your own backyard and near your home. For this reason, gas fire bowls can often be used in communities with city limits that may not allow the use of wood burning fire pits. Obviously, you also don't have the risk of a spark flying out of the bowl and hitting you, your kids or guests!

LOCATION

Ensure your fire bowl is located away from flammable materials including buildings, trees, foliage, and structures such as a pergola, shed, garage or house.

We spoke to our local fire department, who said fire bowls and fire pits should be placed a minimum of 10 feet away from any wooden structure or building.

TOPS AND COVERS

It's important to keep the natural elements out of your fire bowl. Many fire bowl companies offer metal or hardwood tops that cover the fire bowl to quickly convert it into a table when not in use.

You may also want to consider a vinyl cover. This is the easiest and

most effective method to protecting your fire pit from water. They come in many sizes, shapes and colors, but all provide the same functionality.

ELDORADO FIRE BOWLS

We recently undertook a patio makeover. The goal was to build a fire pit that was easy to light, required minimal cleanup, and required no wood storage.

The homeowner's patio is located off the rear of the house and is situated in a secluded backyard with an adjacent screen porch, beautiful flower gardens, and an in-ground pool.



The fire bowl for this project is fueled by gas and required a new gas line installed beneath the patio.



The gas line had to be buried in an 18" deep trench.



Fire pits should be placed a minimum of 10' away from any wooden structure or building.



The flexible gas line was installed beneath a patio covered with bluestone tiles.

We looked at the Eldorado Stone Infinite gas-fed fire bowl, as a natural gas fire bowl solution. Eldorado offers different color options:

**Black Sand
Oak Barrel
Oyster Shell
Aged Teak**

In addition, each color offers either a more modern, smooth, honed finish or a weathered, more traditional Travertine finish for a weathered look.

Each bowl is hand-crafted through an extensive four-step finishing process, which results in subtle, one-of-a-kind, variations in color and texture similar to natural limestone.

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THE BEAUTY OF A FIRE BOWL

The Eldorado Stone Infinite fire bowl weighs 325 pounds and measures 36.25"L x 36.25"W x 18.5"H. A gas shut-off key is supplied to turn the gas on and off at the fire bowl.

The Infinite bowl has a built-in shelf that holds the gas/propane burner, which is constructed with all brass fittings. The burner platform is made from heavy-duty stainless steel that boasts a 10-year limited warranty.

BLUESTONE PATIO REDESIGN

In order to complete the project, we had to install underground natural gas pipe to the fire bowl from the house. We chose a location that was 10 feet away from both the house and an adjoining, L-shaped screen porch.



The rigid end sections were fitted to connect with the supply valve and the burner of the fire bowl.

The gas line included a shut-off valve at the house's foundation wall.

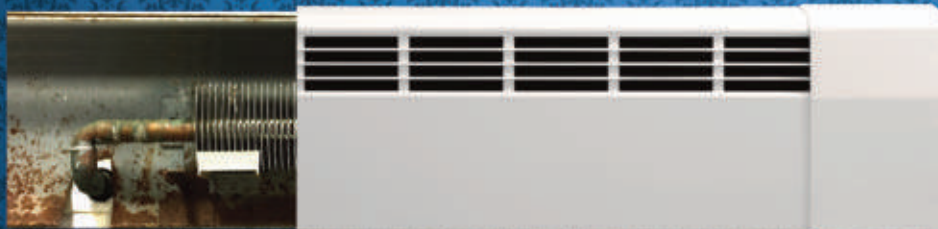


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THE BEAUTY OF A FIRE BOWL



The gas line runs through the bottom of the fire bowl to connect with the burner.



The patio had to be reconstructed after the fuel line was in place.



The subbase should be properly compacted and the bluestone pavers must be carefully replaced and set securely.

The mason who removed the bluestone and reinstalled it after we installed the gas line commented that he had never seen a store-bought fire bowl of such high

quality. He left with the Eldorado Stone website written on the back of my business card! To say we were pleased with the quality of the Infinite fire bowl is an understatement. The outer finish looks like it was formed naturally. The plumber also commented on how robust and well-constructed the burner was.

GAS PIPE CONNECTIONS

The Infinite fire bowl comes with an integrated 65,000 BTU gas burner, a bag of black lava rock, and all match-lit components that comply with CSA standards for liquid propane or natural gas hookups.



To cut the bluestone, the crew used a masonry saw. The blade should be kept wet when cutting to prevent it from warping and extend its usable life.

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It requires a minimum of a 3/4-in. diameter gas line, installed in a home-run fashion from the house.

In order to do this we needed to take up the existing bluestone and dig an 18-in. deep trench for the gas line to travel through.

This gas line needs to have a shut-off valve that is separate, and accessible than the one on the fire bowl.

We decided that the gas line would transition up from the patio at the house, with a shut-off valve at the foundation wall. The pipe would then penetrate the house foundation and connect to the interior gas supply.

It's important to note that a plumber needs to ensure that

your house piping will carry enough gas to supply the fire bowl. They do this by calculating all of your gas-fed appliances and comparing it to the in-feed pipe and gas meter.

This may require additional or larger gas piping to be run inside the home to access the fire bowl area.

OPERATION

The installation went flawlessly, and the plumber commented on how easy the Eldorado Stone fire bowl was to connect to his gas line.

To use the fire bowl, you simply turn on the gas at either the bowl or the house shut-off valve, and then light the burner.

The flames flicker through the lava rocks, look great and provide some decent heat output. I am considering replacing the lava rocks with small river rocks.

COST

I always say you get what you pay for, that's why I recommend Eldorado Stone fire bowls to my clients when remodeling and re-designing patios and outdoor



The crew had to map out the location of the gas pipe to cut access in the bluestone.



A masonry hole saw was used to drill access for the gas line. Water should be used to cool the cutting action.

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THE BEAUTY OF A FIRE BOWL

living spaces. Eldorado Stone fire bowls are hand-crafted through an extensive four-step finishing process, which results in subtle, one-of-a-kind variations in color and texture similar to natural limestone.

These bowls have a built-in shelf that holds a 65,000 BTU gas / propane burner that feature brass burners and a stainless steel, lower shelf to resist rust and ensure longevity.



The cut tile slips over the line for a near “seamless” patio floor.



Here’s the new home for the fire bowl prior to final installation.



The Eldorado Infinite fire bowl comes with a 65,000 BTU gas burner, a bag of black lava rock, and all match-lit components necessary for liquid propane or natural gas hookups.



The burner distributes the gas through a broad footprint beneath the lava rock.



Once connected and ignited, the flames flicker up from the burner through the bed of rock.



Eldorado Stone also offers custom hardwood tops that will quickly convert your fire bowl into an elegant table, or you can make one yourself.

A fire bowl from Eldorado Stone will cost you approximately \$2,500. There are less expensive options out there, but in this case, Eldorado gives us lots of high-quality options for our clients that offer creative design, and don’t break the budget when compared to built-in masonry structures.

When we talk about the design of patios, gardens and courtyards, a fire bowl is an essential element and adds a special aura to an outdoor living design. **EHT**

Editor’s Note: Rob Robillard is a remodeling contractor in Concord, MA, and editor of www.ConcordCarpenter.com.

The flaming lava rock looks great and provides some decent heat output, but the homeowner is considering replacing the lava rocks with small river rocks.

When not in use, the bowl is fitted with a top, which you can purchase or build yourself, and use as an outdoor table.



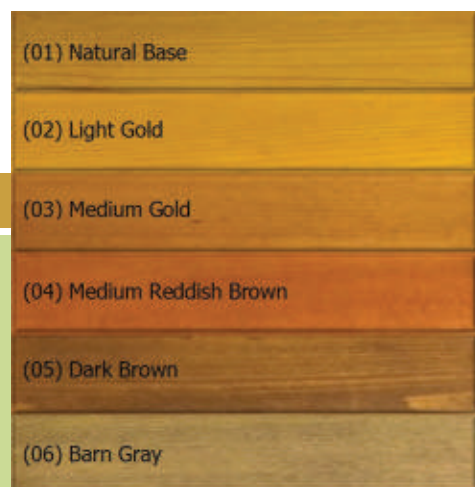


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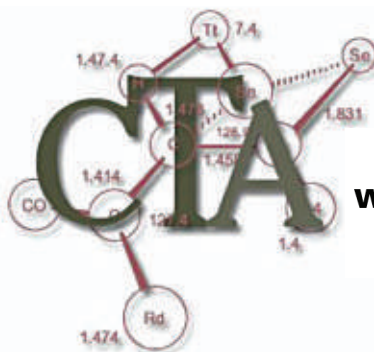


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BATHTUB BASICS

By Matt Weber

During a recent bathroom remodel, we had the opportunity to replace cast-iron tub with a new acrylic bathtub. Tubs are available in a number of different designs, and this project covers the American Standard Saver Tub (available at Lowe's), which is designed to be installed in an alcove and surrounded on three sides by stud walls. This article covers a basic overview of what the project involves, but product details may vary among manufacturers.

After removing the old tub, the most challenging aspect of installing the new one is alignment of the tub's plumbing components with the drain of the house. The plumbing phase of the project will require careful measurements and secure connections. A new tub will come with detailed instructions concerning the tub's pipe connections. The rest of the job entails fitting the tub snugly within the surround, supporting it from below, and ensuring the walls will direct water into the basin.

BEFORE YOU BEGIN

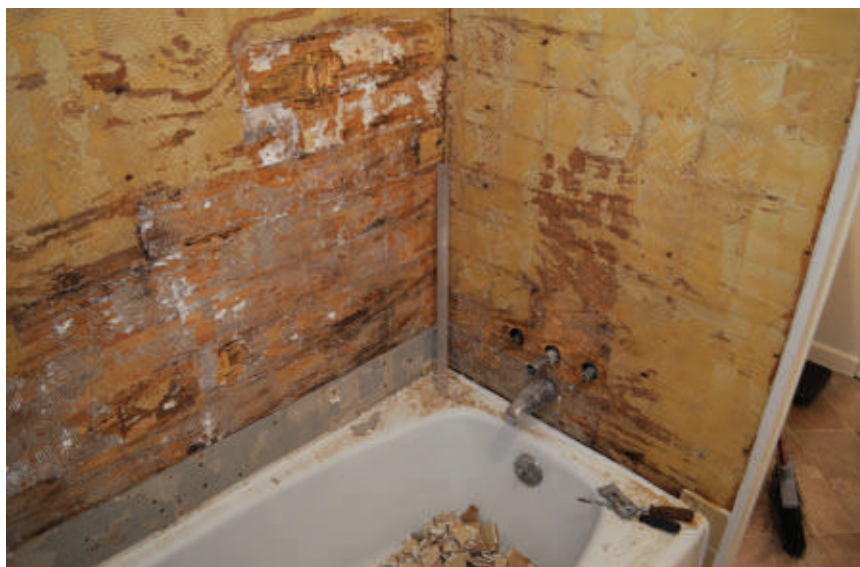
Local building codes vary by location, and you might need a permit for this project in your area. Follow all codes for building and plumbing.

It's important to unpack and carefully inspect your new tub upon delivery. On this project, for example, we found that a corner of the tub was damaged—probably crunched by a forklift during shipment. Although the crack was minimal, we worried it would spread and result in a leak, so we decided to return the first tub and get a new one from the supplier.

*An
Overview of
an Acrylic Tub
Installation*



BATHTUB BASICS



Our recent bathroom remodel involved removing an old cast iron tub from a tiled surround. First step was to scrape off the tile.

Also, determine ahead of time what items are included in with your tub purchase, and what you need to purchase separately. We purchased our selected plumbing fittings separately.



The wall sheathing was removed from around the old tub.



To remove the old tub, we used an electric grinder with a metal-cutting wheel to cut it in half.

The tub is designed to install in a recess, where three walls are comprised of stud framing, with the fourth acrylic wall exposed. An acrylic tub is not self-supporting, which means it must be supported along its entire bottom with mortar or grout.

It should go without saying that the floor should be solidly constructed to support the weight of the tub, water and the person using it. Since we were replacing an old tub, this project required no changes to the floor construction.



Next, a pry bar helped to pull the two halves away from the wall for disposal.

TOOLS

- Level
- Square
- Tape Measure
- Pipe Wrench
- Slip Joint Pliers
- Screwdriver
- Standard Woodworking Tools
- Personal Safety Equipment
- Caulking Gun

MATERIALS

- Nails
- Plumber's Putty
- Silicone Sealant
- 1 x 3 or 2 x 4 Stringers
- Drop Cloth
- Mortar Mix or Grout

The recessed area for the tub location should have walls framed with 2x4 or steel studs, according to the rough opening dimensions provided by your tub's manufacturer. The rough-in framing must be plumb and square. In general, 2x4 wall studs spaced on 16-in. will suffice.

In our particular situation, a vent pipe from a first-floor bathroom that routed up through one of the surrounding walls complicated the framing in our upstairs bathroom. The old vent stack was larger than the 3-1/2-in. wall studs, so we had to shim out the rear wall studs to enclose the pipe. You might face similar obstacles that require you to take such measures.

Another note about framing the surround: Plan in advance if you want to include any recessed nooks, shelves or other accessories, and frame them accordingly. Even bolt-on accessories will require solid between-the-stud framing to mount them, so go ahead and install the 2x blocking while the walls are open.

Once the wall framing is complete, horizontal stringers should be installed across the studs to support the edge of the tub deck.

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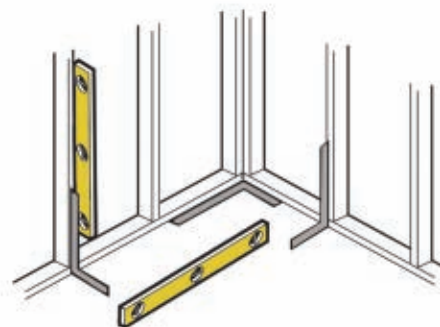
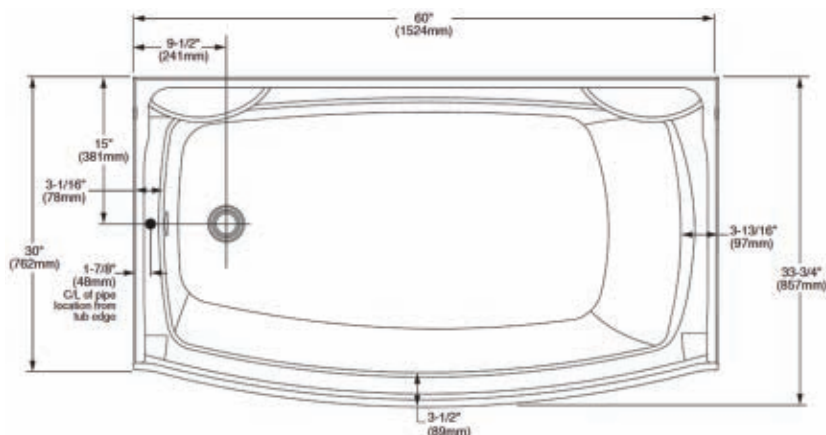
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BATHTUB BASICS



The bathtub's installation manual will include detailed instructions on required measurements for the rough opening and drain connection. Image © American Standard

Make sure the rough opening dimensions are proper, plumb, and square.

Mark their position by tracing a level line onto the studs at the height indicated in the tub's instruction manual. Align the top of each stringer and nail or screw them to the studs.

The American Standard tub shown in this project has an installed size of 60 x 30 x 18

inches. The instructions map out the location for the drain, based on measurements from the surrounding walls. Proper alignment of the plumbing connections with the house drain is crucial.

Note: It's a good idea to have an additional opening to access to the tub's drain components during installation. In our case, we were working on an upstairs bathtub, so we cut access through the floor, and connected the plumbing from below. Another option is to access the drain through a hole in the partition wall, which can later be finished or hidden inside a vanity cabinet.

With the tub site fully prepped, recruit an assistant to help dry-fit the tub into place. This will help you troubleshoot any problems in advance of using wet mortar. For example, we discovered some tight clearances around surrounding obstacles (toilet supply valve, opposing bathroom wall, etc.) which made placement tricky and required a bit of planning and practice.

Install the drain components to the bath following the manufacturer's instructions. See the



We cut the shims for the wall studs on a table saw.



A vent pipe from a first-floor bathroom complicated our wall framing, requiring us to shim out the wall studs



When framing the shower surround, plan for any shelves or accessories by incorporating any necessary blocking into the wall studs.

installation manual for suggested opening size and location dimensions. We used a “universal drain kit” with PVC components.

Before installing the tub, it's important to note that the stringers are meant to level and strengthen the tub deck but in no



On this bath/shower surround, we included a recessed shelf using a preformed plastic insert.



To connect the tub drain, it's a good idea to provide an additional opening for access to the drain components. We cut a hole through the floor and accessed the drain from below.

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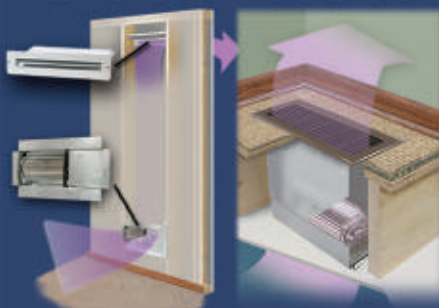
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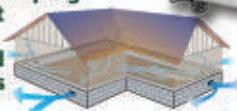
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Level-to-Level



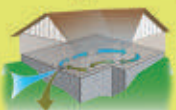
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For More Information

BATHTUB BASICS

way should they be expected to support the weight of the tub, which must be supported along its entire bottom. We applied a bed of mortar (sand not recommended) to cover all points of contact between

the tub and the subfloor. Measure the distance from the tub's bottom to where it will meet the floor to determine the required depth of the mortar bed.

Mix the mortar with water



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Wood stringers were installed over the studs.



The stringers are intended to level and support the tub deck, but the rim must NOT support the weight of the tub.



This photo shows the runners on the tub's bottom which sit on the floor. A mortar bed must fill the void between the floor and the tub to support the bottom completely.



This photo shows the tub fitted with the universal PVC drain kit.



Inspect the bathtub for damage upon delivery. The design of the tub features one exposed acrylic wall, with the other three sides supported by the bathroom walls.



Dry-fit the tub to troubleshoot any issues prior to mixing the mortar.

according to the package directions. We used a shovel and garden hose to churn it up in a wheelbarrow. Aim for a consistency similar to the thick, wet sand you might use to build a sandcastle. Don't mix it

too thin, or the mortar might spread out beneath the tub without providing adequate support.

After pouring the bedding and troweling it into place (and before it sets), position the bath within



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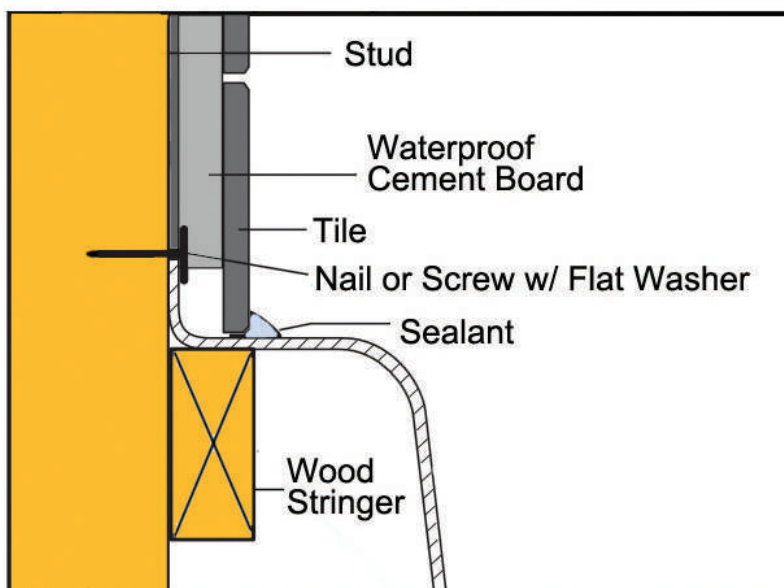
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BATHTUB BASICS



Mix the mortar with water until it is damp and thick.

Trowel the mortar onto the floor of the rough opening, forming a bed thick and broad enough to support the complete bottom of the tub.



After positioning the tub in the mortar bed and ensuring it sits level, fasten the flange to the studs with nails or screws with flat washers. The wall should be waterproofed, and the finished surface should be installed to cover the the flange and direct water into the tub.

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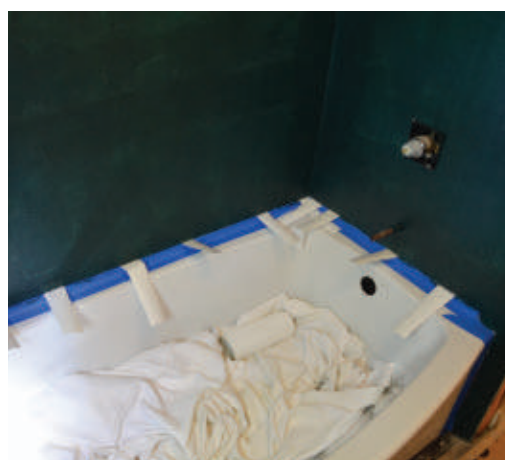
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In preparation for tile, we installed cement board over the studs of the surround.



Liquid waterproofer covered the cement board.



Ceramic tile was applied over the walls with tile adhesive.

the recess until the rim is leveled against the leveling stringers. Remember, the rim of the bath must not support weight. Allow the mortar bedding to completely harden before applying weight to the rim or bottom of the bath.

Check the tub's level front to back and side to side, shimming it as necessary. Secure the tub to the studs with nails or drywall screws and flat washers above the flange of the bath.

Connect the bath drain to the waste line and tighten all drain joints securely. Seal all joints around the tub with a flexible, mildew-proof sealant.

Those are the basic steps of an acrylic bathtub installation, but you'll still need to build the tub surround in such a way to ensure water is diverted away from the walls and into the tub. For this project, we



We incorporated a horizontal stripe of mosaic tile as a decorative accent.

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BATHTUB BASICS

covered the walls with cement board and liquid waterproofer, then applied wall tiles with tile adhesive.

The finished project provided a more spacious bathing environment, thanks to the flared design of the new tub. The new tile walls look beautiful and feature an integrated shelf and a mosaic stripe accenting the surround, which greatly improved the room's interior décor. **EHT**

The tile joints are filled with grout, but the joint between the tile surround and tub should be caulked with a flexible, mildew-proof sealant.



SCHLUTER KERDI-BOARD KIT COMPONENTS

Tiled shower walls are luxurious, hygienic and easy to maintain. Whether the setting is a tub surround or a standalone shower, the walls must be waterproof before the tiles are installed. Schluter Systems' new Schluter-Kerdi-Board Kit includes everything needed to build waterproof walls for a standard tub surround or an acrylic shower base, all in a package that can easily fit into most vehicles.

The kit creates a completely waterproof environment and eliminates the possibility of damaging leaks and mold growth due to moisture penetration. The kit includes eight pieces of 1/2-in. thick Kerdi-Board waterproof building panels that can be screwed directly onto wall studs to build a waterproof tub surround or shower area. These building panels are the first step in getting the walls ready for tile installation. The panels are 48x38-in. so they are a very manageable size and can easily be cut with a utility knife to fit any wall space up to 101 sq. ft.

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

The kit also includes two tubes of Kerdi-Fix sealing and bonding compound to create a waterproof seal around the flange of the tub or shower base. This is a particularly vulnerable area for moisture penetration, so obtaining a proper waterproof seal where the tiles meet these elements is critical. Other components in the kit are a 4-1/2-in. mixing valve seal, a 3/4-in. pipe seal, and a 1/2-in. pipe seal to ensure that no moisture can enter the wall cavity where the plumbing fixtures protrude into the shower area. For more information, visit www.schluter.com.





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Cool Thinking

When the A/C on your older vehicle bites the dust, don't get hot under the collar: Replace it yourself.



By Bruce W. Smith

Like old homes, vehicles that have a lot of years and miles on them need some TLC from time to time to keep them safe and comfortable to drive. One item that will eventually fail is the A/C. It can happen for several reasons, but the two most common failure points are the compressor fails or leaks develop in the closed system. The older the vehicle, the greater the odds it'll happen sooner than later.

I know that first-hand: The compressor on my early 90's-era Ford Bronco failed. Fortunately, the A/C

system is the same setup as found in the majority of Ford cars, pickups and SUVs found in early 80s through early-2000s. After sweating through this past summer without the luxury of cool air, I decided it was high time to chill out—and get back the defrost when winter set in.

I bought a complete A/C repair kit for less than \$170 from Amazon.com that included a new compressor, accumulator, orifice tube, O-rings and the special PAG oil used in A/C systems. All were 134A compatible, which is the

ozone-friendly Freon that manufacturers started using in 1994.

In addition, because the stock compressor failed, I bought a new condenser (that thinner radiator-like component that sits in front of the radiator) because the debris from the failed internal parts of the compressor usually find their way into its cooling tubes and hoses of the A/C system. You can flush the condenser, but it's not worth taking any chances some debris might still be in the system and kill the new compressor.

It took the better part of a Saturday afternoon with a friend to remove out the old A/C components, flush the lines, and install the new R134A-compatible parts, re-using all the original lines and tubes fitted with new O-rings. Then we installed the special adapters on the A/C system, so we could recharge it with R134A Freon.

The repaired A/C worked like new. A temperature gauge we'd stuck in one of the dash vents registered a brisk 40-degrees F on Max A/C; the fog on the windshield disappeared in mere seconds; and there was a nice frosty coating on the metal tube leading from the evaporator under the dash to the accumulator canister in the engine compartment—a sure sign all was working exactly as it should.

Fixing an older vehicle's failed A/C system is a relatively simple job that doesn't require much in the way of technical expertise; you're just disconnecting lines and replacing the component part they



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run to/from. It cost less than \$250 to completely rebuild the one in my truck, and it worked better than it did when new.

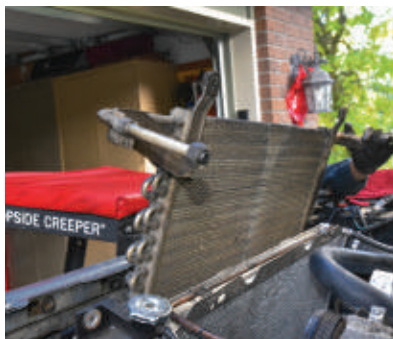
STEP-BY-STEP



We found the best way to save money on the repair of an A/C system is to buy a complete kit that includes a new compressor, the evaporator, PAG oil, orifice tube and o-ring kit. We found this kit on Amazon.com for less than \$160. The A/C condenser cost another \$70.



A tip when upgrading an A/C system from the pre-'94 vehicles that used R12 Freon to R134a is to install a "variable valve" orifice tube in place of the standard fixed-orifice tube. It allows the flow rate through the valve to change for better cooling at idle and low speeds, lowering the A/C outlet air temperature by as much as 5 to 8 degrees from original factory setup.



The most time-consuming part of our A/C repair was replacing the condenser. It sits in front of the radiator. If the A/C compressor has failed, always replace the condenser because debris in the old condenser can't be easily flushed out.



It's prudent to flush all the A/C lines and new condenser with a high-quality, fast-evaporating solvent before installing the compressor and accumulator. GPD A/C Flush (P/N 8011256) works great for such a task.



The quickest and easiest part of an A/C overhaul is removing and replacing the compressor. We just had to release the belt tensioner to remove the old compressor, unbolt the special A/C fitting on the back, then swap in the new one along with a new fan belt.



The canister that removes the moisture from the air and debris that might be flowing through the system is called the accumulator. Carefully unplug the pressure switch, then remove the lines leading to the canister. Replace with the new one included with the kit.



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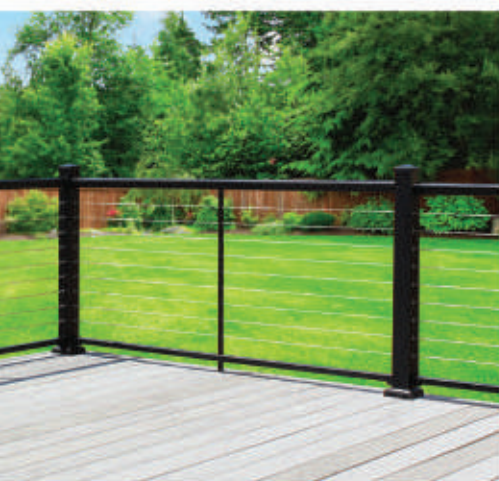
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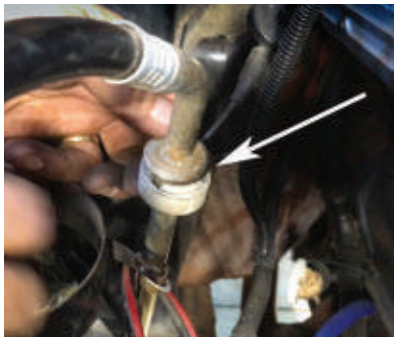
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Auto parts stores can rent you the special release tool needed to disconnect the hose running from the evaporator tube to the condenser. A kit can also be purchased at just about any tool store or online retailer, such as Harbor Freight, for less than \$20.



Inside the metal tube running from the evaporator is a special filter/valve called an orifice tube. It's a critical part of an A/C system because it helps control the flow of refrigerant through the system—and filters out debris that could kill the compressor. It's removed by using long-nosed needle-nose pliers and pulling straight up. Our old one was plugged with debris from the failed compressor.

We dribbled a little GPD A/C Flush into the lines and used compressed air to blow it through them to clean out any debris from the compressor. A paper towel over the lower tube keeps us from getting a face full of flush!

Once the line is clean, we added



the bottle of PAG oil to help lubricate the compressor after the system is filled with Freon. Oil comes with the new compressor.



With the line cleaned and oiled, we installed the new orifice tube that came in the kit. It pushes into the tube and locks in place.



Reconnect and tighten the line running from the evaporator tube to the condenser. If the line looks bad, replace it. Ours was still in good shape even after 20-plus years. We also replaced the keeper spring at the connector and all O-rings we came across, all of which were in our A/C compressor kit.



The accumulator is essential for the A/C system as the moisture-absorbing desiccant inside the canister dries and filters the air. Our old one we replaced had long since failed at doing its job.



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Federal law actually requires R134A fittings be used on the high- and low-side service ports when updating pre-1994 vehicles that used R12 refrigerant. We found our two adapters in a pack at Walmart for less than \$10.



We recharged our truck's A/C with environmentally-friendly R134a refrigerant. We also added a can of Freon that contained dye, so we could see if there were any leaks.



Once the system is hooked back up, it needs to be properly "charged" to the proper pressures with Freon. We had the fittings and gauges. If you don't, any automotive repair shop can handle this part of the job with ease.



Chillin! We slipped a temperature gauge in one of our truck's dash vents and watched it dive down to 40 degrees F when the A/C was turned to its Max setting—proof that our A/C retrofit was literally a cool success. **EHT**



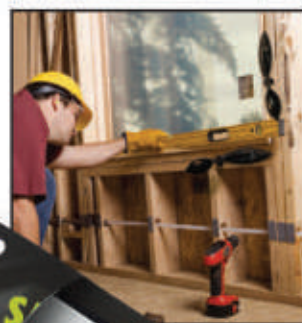
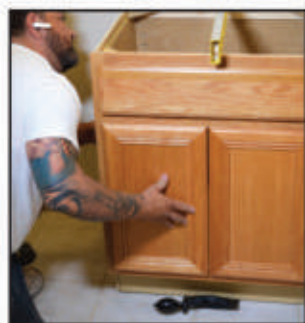
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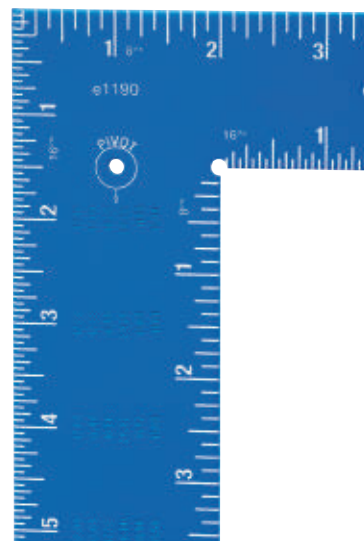
The new Worx JawHorse provides do-it-yourselfers with a folding workstation that's easy to transport wherever needed, then sets up in seconds to minimize downtime. This portable workhorse features a patented, foot-pedal-operated, clamping system that serves as an extra set of hands for a wide range of DIY projects. Although the JawHorse weighs only 35 lbs., it's constructed of heavy-duty powder-coated steel. Its three-legged, wide-stance tripod design provides solid footing even on uneven surfaces. The front legs have locking/unlocking tabs, and the rear leg has a locking knob. A locking/unlocking switch on the face frame secures and releases work pieces. What sets the JawHorse apart is its exclusive, foot-pedal, clamping system. By pumping the foot pedal, the non-marring

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