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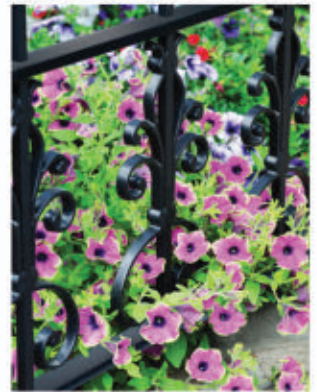
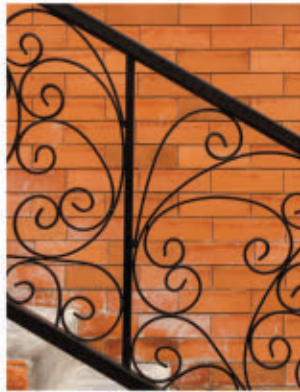
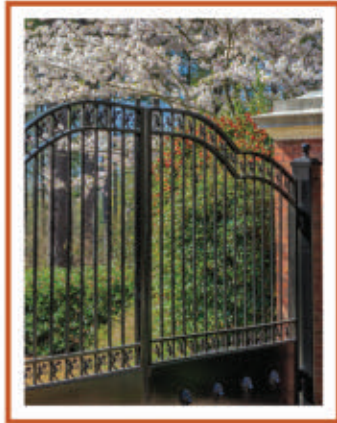
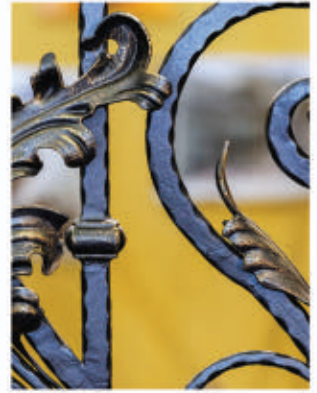
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Our magazine staff recently attended the International Builders' Show in Orlando, Florida. This is the largest residential construction convention in the world, and we've attended every one of these for the last 15 years. Something struck me on this particular trip that I hadn't seen in quite a while: unbridled enthusiasm.

After the housing crash back in '08, the attitudes of those in the home-building sector had gotten kind of glum. Remodelers were holding steady because people were staying in homes they already owned instead of buying new ones, but the "new construction" industry took a major blow and has been struggling to recover ever since. During that time, we watched the International Builders' Show shrink as a result, and the mood at the event was not always lively.

I'm happy to report that 2018's convention has bucked that trend. Attendance was up this year, and the number of exhibitors had increased. Whereas the exhibition halls had been partitioned off in recent years to hide any unused areas, two massive Orlando Convention Center buildings were packed from wall to wall with displays and demos. Everyone was optimistic about the year to come in home-building, and you could feel that positive energy on the show floor.

Not only that, but the U.S. economy appears to be gaining steam overall. The Dow Jones Index has been on the climb. Many Americans get to keep more of their take-home pay thanks to a recent Federal tax cut. And business leaders seem to be responding in kind with major corporations issuing bonuses to their workers and announcing new expansions here in the States.

In other words, a lot of people are feeling good about the economy, about the prospects for home-building, for homeownership and beyond. And I tend to believe they're right. Sunny days lay ahead. The future's so bright, maybe we should wear shades.



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mweber@latitude3.com

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CREATIVE DIRECTOR

Wesley Glassco

CIRCULATION

Jennifer Pentecost

PUBLISHER

Jeremy Hollingsworth
jhollingsworth@latitude3.com

ADVERTISING SALES MANAGER

Taylor Martin
tmartin@latitude3.com

ADVERTISING SALES

Sam Bullard
sbullard@latitude3.com

William Parks
wparks@latitude3.com

ONLINE MEDIA ASSISTANT

Sonia Buchanan

BUSINESS MANAGER

Dusty Statham

SUBSCRIPTIONS

Customer Service
888-587-8911

PRESIDENT

Trent R. Boozer

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Q: How do I bend wood with steam?

A: Steaming wood is one method of creating a curved piece, and some woods such as oak respond well to steam bending. Keep in mind that thinner stock bends easier (with less breakage) than thicker stock. You can find many woodworking books that offer detailed instructions on steam-bending. Essentially, you'll need to make a box to fit the size board you need to steam. PVC drain pipe is a common steam-box material because most boards will fit inside its 4-in. diameter. One end should be capped along with a removable cap on the other end. The box should be sloped with a drain hole on the end. Steam is introduced from your steam generator into an intake port along the top. You can generate steam with a water kettle or a wallpaper steamer. Steam for about one hour per each inch of its thickness. Remove the board with gloves, set it into a bending form or clamps, and allow it to cool to retain its shape.

Q: Do bidets require hard wiring for installation?

A: Many new bidets do require hard-wiring the unit during installation, which makes them more suitable for new construction than remodeling applications. However, some models don't require hard-wiring, using only the water pressure to create the bidet stream. Note that these non-wired units do not have temperature control for the water, which means using them in very cold climates may result in a rather brisk user experience.

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Q: My router bits always get stuck in my router. Is there a better way to remove these than wrestling them with pliers?

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

Q: How does "crack-resistant" concrete differ from standard concrete?

A: Concrete products marketed as "crack-resistant" usually have fiber-reinforced formulations—a blend of properly proportioned stone or gravel, sand, Portland cement, special synthetic fibers and other ingredients. The synthetic fibers eliminate the need for wire mesh in slab-on-grade construction and they provide greater strength to resist chipping and cracking, without sacrificing a nice, smooth finish. **EHT**

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Build Your Own Off-Road Go-Kart Chassis

Hit the Road for Fun with this Cool DIY Welding Project



By Blair Weillnau

Your go-kart dreams can easily become reality with a welding machine, steel and a little elbow grease. There are lots of go-kart plans on the internet, and creating your next project is right at your fingertips. Is this go-kart for fun? For hobby? For racing? Or is it your next father-daughter or father-son garage project? Dream big, and customize your go-kart to best suit your needs.

Forney Industries teamed up with Joe Mooney from Homesteadonomics to create an off-road go-kart for Mooney to use around his homestead. Mooney wanted a two-seater with suspension to easily

navigate his mountainous desert property.

Not all plans are perfect, and some tweaks and adjustments may be necessary. Keep in mind, you can always make it your own and add your own spin on a purchased plan.

TOOLS AND MATERIALS

- Forney 190 MP welding machine (ITEM# 324)
- .030" MIG wire (ITEM# 42286)
- 1¼" and 1" square tubing (ITEM# 49531 and ITEM# 49528)

- Dry saw
- Angle grinder (ITEM# 1901)
- Cutting and grinding wheels (ITEM# 71819 and ITEM# 71925)
- Heavy-duty magnets (ITEM# 70715)
- C-clamps (ITEM# 70225)
- Paint marker (ITEM# 60310)
- Drill
- Welding helmet (ITEM# 55709)
- Safety glasses (ITEM# 55432)
- Welding gloves (ITEM# 53410)
- Flame-resistant jacket/apron/sleeves (ITEM# 57203)
- Go-kart plans (optional)

PROJECT PREP

When metalworking and welding, safety is important. Always remember to protect yourself with a flame-resistant welding jacket or apron and sleeves, welding gloves, safety glasses and a welding helmet. Protecting yourself from harmful arc flash and sparks is crucial.

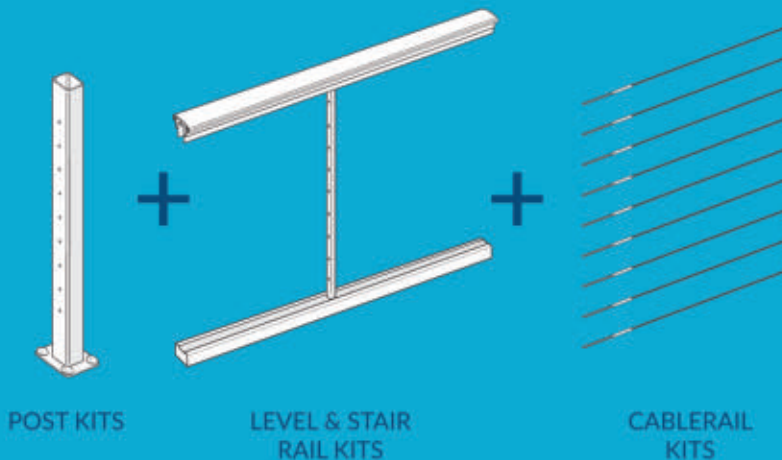
Create your own go-kart plans, or download your favorite online plan. We decided to use the plans from Spidercarts and build "The GrandDaddy" version (you can download this plan and more at Spidercarts.com). This two-seater dual suspension kart was just the



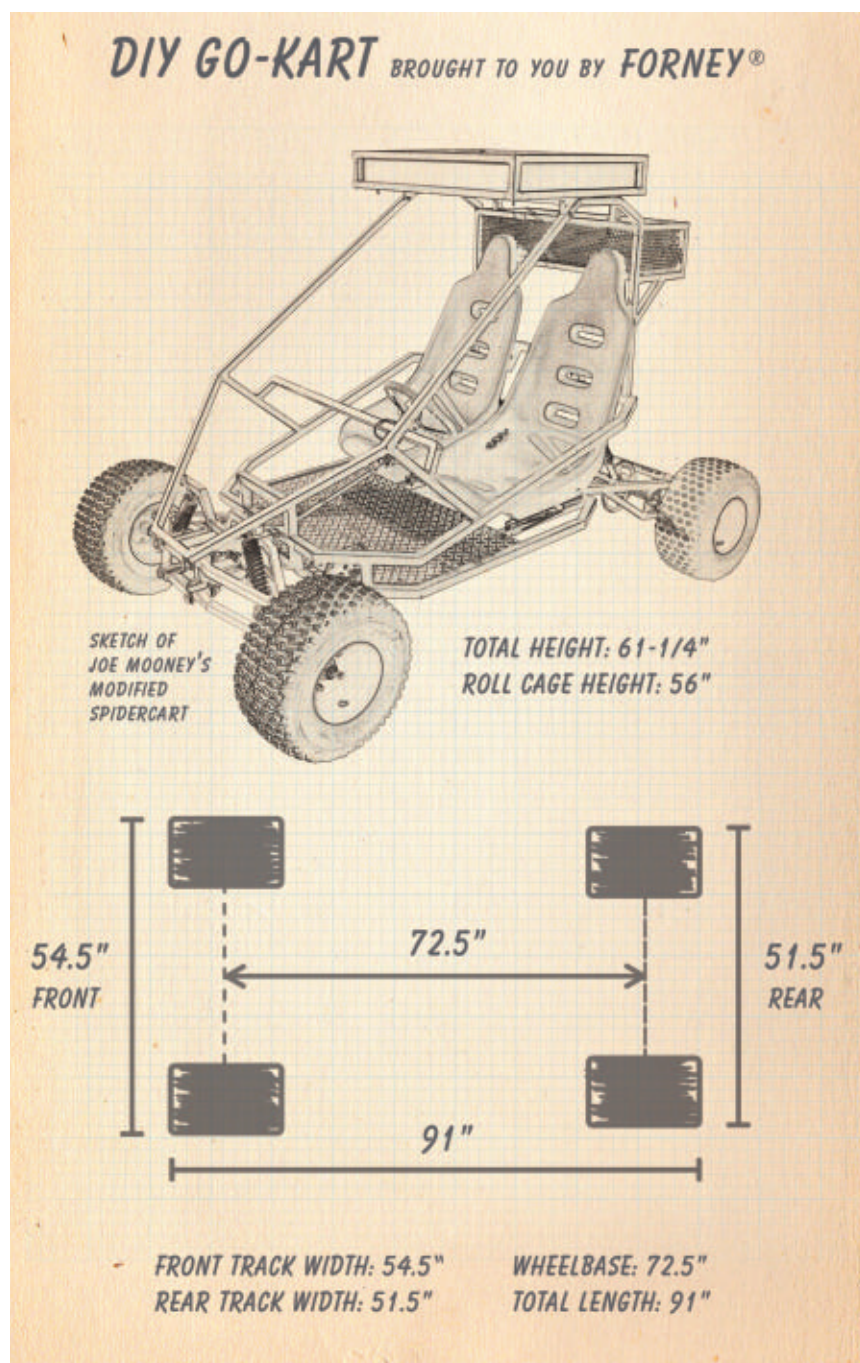
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lot of time in the long run. We used a dry saw to cut more shallow and common angles (45 degree and 22.5 degree angles). For the steeper and compound angles, an angle grinder is great to get that custom fit. Cut all pieces to length as described in your plans and lay them out with the labels facing outward. Double check your plans and make sure you have the correct parts and pieces.

PRO-TIP: Scribe your metal before cutting. Use an angle-finder to help set angles before you cut them.

PRO-TIP: Use heavy-duty magnets to help align your metal and ensure your angles are straight.



STEP BY STEP ASSEMBLY

Your pieces should all be laid out and labeled. It's easiest to start with the main base frame and build the go-kart up from there. For convenience, we pre-drilled all the holes our plans called for, especially in areas that would be harder to get to once welded together. Some of the holes needed were for the brake and gas pedals as well as the seats. Your plans should help you determine what pieces should be drilled. After you're finished drilling, you're ready to tack weld the pieces together.

design Mooney was looking for, and would allow his family to join in on the fun. Mooney could also easily customize these plans and add additional features to make it his own.

For this build, the first step is to cut all the pieces according to

plan. It doesn't hurt to purchase extra material in case of a wrong cut or you find you need additional steel. Use a paint marker to label each individual cut piece so they are easy to identify for assembly. Follow the rule of thumb to measure twice and cut once to save a

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Find the most level and flat surface available to assemble and construct the chassis. This will help to ensure the chassis is level and square. If you notice your pieces don't fit flush together, check for metal burrs on the

ends of the metal. These will appear after cutting and can easily be grinded off.

Make sure to set your machine to the recommended settings for the metal you're welding. Our Forney 190 MP



was set to 45 amps, 18.9 volts in the manual 2T mode. Always remember, start with tack welds. Tack welds temporarily hold your pieces together and can easily be ground off if a mistake is made. Once you ensure your

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pieces are square, finish with complete welds to properly secure the metal together. If something doesn't line up, double check your measurements.

PRO-TIP: To prevent the heat from warping the metal, don't weld too long in one spot.

PRO-TIP: Use a square or a carpenter's square (they're much larger) to help ensure angles are lined up appropriately.

After the main frame base is welded together, build the rear subframe base. This will be the frame that holds the rear bracket for the axle and the engine. Tack

weld first and complete with full welds. The rear subframe base will also receive two angled pieces of tubing that will hold brackets for the rear axle, but start with making the rear subframe axle supports. We first tack welded the axle supports flat, and then tilted them up and constructed the rest of the frame to those. Finish with complete welds.



Next, we tack welded the front uprights to the main frame and then the rear uprights to the back of the main frame. Then, we tack welded the front and rear top rails. The side rails are compound angles which made this a more challenging aspect and required two people; one person to hold the metal and the other person to mark (scribe) the angles and cut them by hand. After it's tack welded and in place, use complete welds to finish.



Next, we tack welded the front suspension block which is comprised of the 1-1/4-in. square steel that essentially created a rectangle. Having this front suspension block in place helped us set and adjust the top roll bar assembly. Finish with complete welds.



The rear roll bar assembly and the front roll bar assembly were the next steps. We started with the rear roll bar assembly and tack welded it as one piece, then we set it on top and tack welded it to

the rear top rail. We then welded the front roll bar assembly together and tack welded it to the front of the suspension block. Finish with complete welds. We hand-scribed our angles to get custom

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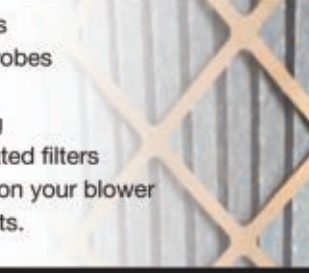
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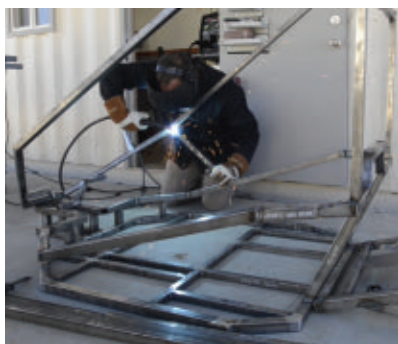



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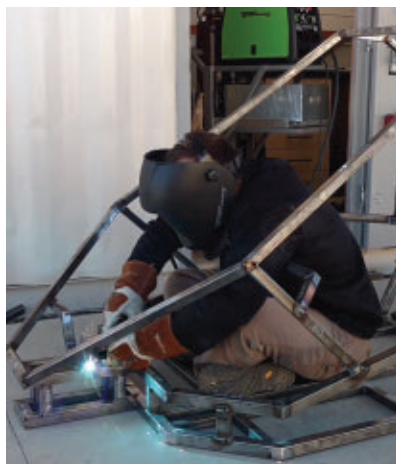
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fits to join the front roll bar and the rear roll bar. This was cut with an angle grinder, similar to the side rails.

We installed angled support pieces from the side rails to the roll bar, and then installed the dashboard support. The dashboard support provides the mounting location for the steering column and any other switches you might want to add.



Next, we tack welded brackets to the front suspension block to hold the front suspension. Then, we welded the front upper shock brace to the suspension block. This piece resembles a “W” and will serve as the mounting point for the shocks.



At this point, most of the frame should be complete. Build the front suspension A arms. These arms were made in two matching sets, for a total of four arms. Build these as matching pairs. The lower arm will get a shock-mount bracket welded to it. A matching shock-mount bracket was also attached to the upper portion of the front suspension block assembly.

PRO-TIP: Once you have one arm assembled, dry fit the second arm to mimic it. All ends should line up accordingly.



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Mount the pivot points to the rear sub frame assembly and the rear of the main frame. Attach shock mounts between the rear subframe assembly and the rear uprights of the main frame.

We added baskets to the go-kart for some additional functionality. This will be useful on Mooney's homestead but is not necessary. Make the go-kart your own and add what would best suit your needs.

Double check the frame and make sure all welds are complete and sturdy. Grind welds where you see fit. That completes your go-kart chassis. Your purchased plans will assist you with mounting the tires and engine placement. Electrical systems and styles vary, and are completely up to you. We encourage you to research your options and follow the manufacturer's instructions for installation.

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Whether it be around your homestead, racing your buddies at the track, or just some bonding time with your kiddo, a go-kart has many uses. You can make it as simple or complex as you want, but just remember to have fun! **EHT**

***Editor's Note:** Blair Weinau is the Copywriter at Forney Industries, one of America's most established family owned welding and metal-working product companies. For more information, visit www.forneyind.com. Check out Homesteadonomics on YouTube for more project videos.*



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A high-angle photograph of a man wearing a straw hat, a red and white plaid shirt, and light-colored pants, pushing a blue and black push mower across a lush green lawn. The man is moving from the top right towards the bottom left, leaving a distinct mowed path behind him. The grass is vibrant green and well-maintained.

YOUR LAWN QUESTIONS ANSWERED

© Mariusz Blach

Over the past 15 years, *Extreme How-To* has been asked for a lot of lawn-care advice. In this article we've compiled our most frequently asked questions, along with answers from lawn-care experts, to give you a grab-and-go primer for preparing your lawn for the green season.

WHEN SHOULD I BEGIN FEEDING MY LAWN FOR SPRING?

Winter is like a long slumber for lawns, and in the spring they wake up hungry. Fertilizing your lawn in the early spring (February to April) strengthens the root

system and gives the grass a healthy start before the heavy growing season. If you see crabgrass, apply a combination fertilizer with a pre-emergent selective herbicide to control it. In late spring (April to June), the grass is busy growing and using up stored energy, which requires a fertilizer designed for this time of year. However, broadleaf weeds are growing as well, so use a combination of fertilizer with broadleaf weed control (a "weed-n-feed" product). Feeding your lawn just once a year will improve its condition, but feeding it four times a year on a regular schedule will make it even healthier.



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YOUR LAWN QUESTIONS ANSWERED

WHAT IS THE BEST PRACTICE FOR SEEDING A LAWN?

Two things are important when seeding: quantity and coverage. You want to use plenty of seed. For a brand new lawn, 6 to 8 pounds per 1,000 square feet is not excessive. For an existing lawn that you want to "thicken up," 3 or 4 pounds per 1,000 feet should be plenty. Over-seeding can flesh out bald or thin spots of the lawn. Check the seed package or ask your local professional for specific instructions. Spread the seed in a criss-cross pattern, using some sort of seed-spreading device to achieve even coverage. Spreading seed by hand does a lousy job. Using a dedicated seed spreader—even an inexpensive hand-held model—will get better results.

Prior to spreading the seed, remove all loose thatch and lawn debris and work the soil of bare spots and thin areas to a depth of 1/4 to 1/2 inch. This can be done with any sharp garden tool or rake.

This may not be necessary if you've used an aerator. But if you haven't, then cultivating the soil gives the seed a place to lodge. Then, after spreading the seed, use a rake to work the seed just



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YOUR LAWN QUESTIONS ANSWERED

below the surface of the soil. This also helps break up any soil cores the aerator has left on the lawn.

Next, spread fertilizer. Some products are available as a mixture of seed and fertilizer. Otherwise, follow the seed with a good “starter” fertilizer with a high middle number (phosphorous), such as 20-27-5 (most common starter analysis found at retail). Keep the new seeds moist.

HOW OFTEN SHOULD I WATER THE LAWN AFTER PLANTING GRASS SEED?

During the germination period, water your lawn twice a day, 10 minutes per watered area. The idea is to keep the top 1 inch of soil moist, so water often rather than deeply. The seeds should germinate in 2 to 3 weeks, but this will

largely depend on the type of seed you are planting. Once the seed has germinated, maintain a consistent watering schedule, accounting for current weather conditions. Over-watering can cause grass disease problems, so it's important to monitor soil saturation when maintaining your lawn. The best time to water your grass is between 4 a.m. and 6 a.m. If possible, you should avoid watering in the evening.

WHAT IS THE BEST PRACTICE FOR INSTALLING SOD ON A LAWN?

Professional landscapers often use a tractor fitted with a special sod-laying apparatus hitched to the rear. These attachments are then fitted with large spools of sod (which are backed with mesh). With this method, a worker holds one end of the sod strip while the tractor



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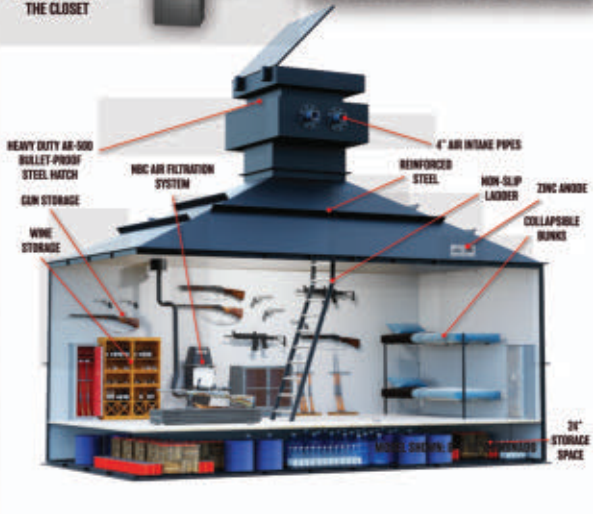


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YOUR LAWN QUESTIONS ANSWERED



operator pulls forward, literally unrolling the spool of sod in strips.

However, a tried-and-true DIY method is to purchase pallets sod, have the supplier deliver them to your home, and recruit all your friends to help on a Saturday morning. Have everyone lay the sod in tightly spaced rows, butted end to end without overlapping. Use hatchets to cut the squares to fit the property lines and around obstacles in the yard. If you have any gaps, fill with topsoil and add seed. Pay your friends with beer and pizza.

WHAT IS THE BEST PRACTICE FOR WATERING A NEW SOD LAWN?

The key to establishing new sod is proper watering. Immediately after installing sod, water thoroughly making it spongy to the step. The new sod should be kept thoroughly wet to a depth of 4 to 6 inches and watered 3 to 5 times a day during the first two weeks, depending on the season. It is very important to keep the new sod damp in the first week so the grass can take root. (Lift a corner of the sod to determine the depth of moisture.) Avoid foot traffic on the lawn while it establishes. During hot weather, sprinklers should run several times a day so the new sod never dries out. If allowed to dry out, the sod will shrink, turn brown and might even die. At the end of week 2, dry up the yard enough so you can mow.

Over the following two weeks, transition from frequent daily watering to fewer cycles per day. During week 3, reduce waterings to 1-3 times per day and skip a day between watering if the sod is not drying out. By week 4, water 1 to 2 times every other day. After week 4, your new yard should be ready to go 2 to 3 days between watering. Water your lawn in the evening or early morning when less evaporation occurs.

New sod will need more water the first growing season and especially the first 6 months. As roots

grow deeper over the course of a year, it will require less water. The key is deep watering less frequently, and to never let it dry out and brown.

WHEN I MOW MY LAWN, HOW HIGH OR LOW SHOULD I CUT THE GRASS?

When mowing, far too many people will set their mowers too low or “scalp” the lawn. This leads to thin and dying grass and shallow root systems. Each grass type has a height range that it prefers to be mowed to be healthier, look better and last through the season without dying out from lack of water. The depth of the root system is in direct correlation to the height you mow. So, the higher you mow, the deeper the roots, the more water the grass can get and the less you have to water.

In general, two types of grasses are what we deal with. Cool Season grasses: Fescue, Bluegrass, Ryegrass. These are the most common in the Southeast. These grasses like to be mowed at a range of 2-1/2 to 3-1/2 inches high. Fescue looks best at least 3 inches high. Bluegrass is the most tolerant to lower mowing, but should still be left at least 2-1/2 inches.

The other type is Warm Season grasses: Bermuda, Zoysia, Centipede. These grasses will tolerate as low a cutting as most homeowner's mowers will cut.

Golf courses use a lot of Bermuda and Zoysia, and they routinely cut it as low as 1/2 inch. A typical home lawn will look nice at 1 inch, providing you have a smooth grade.

WHAT TYPE OF HERBICIDE IS BEST TO KILL THE WEEDS THAT ARE SPROUTING ON MY LAWN?

Post-emergent herbicides—the type you'll need now that the weeds have already emerged—are categorized as selective or non-selective. Products



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YOUR LAWN QUESTIONS ANSWERED

such as Roundup are non-selective, meaning they try to kill most all plants, while a selective herbicide is designed to kill specific types of plants, like broadleaf weeds. Non-selective herbicides often kill all vegetation, destroying

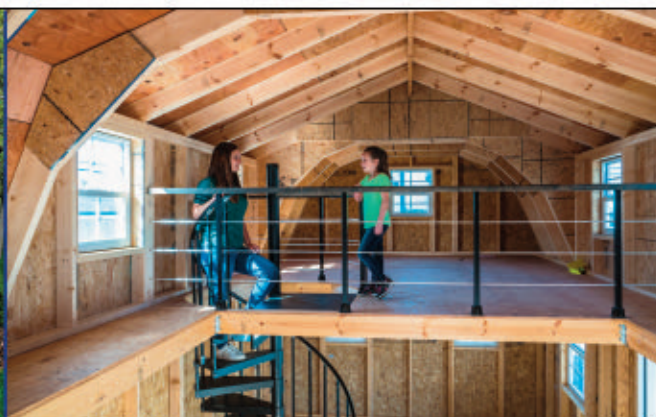
the nutrients in the soil and preventing any vegetation from surviving—including the grass that the chemical contacts. Certain selective herbicides may control broadleaf weeds in warm season turf grass, control of grassy weeds

in Zoysia turf, etc. Products vary, so read the packaging carefully to a select the appropriate post-emergent herbicide for your specific application.

SHOULD I AERATE MY LAWN?

Many grasses will naturally wake up and become green with the spring, but that's not the case for bare spots, which require more care. A tried-and-true method to jumpstart a healthy lawn is to aerate and over-seed the yard.

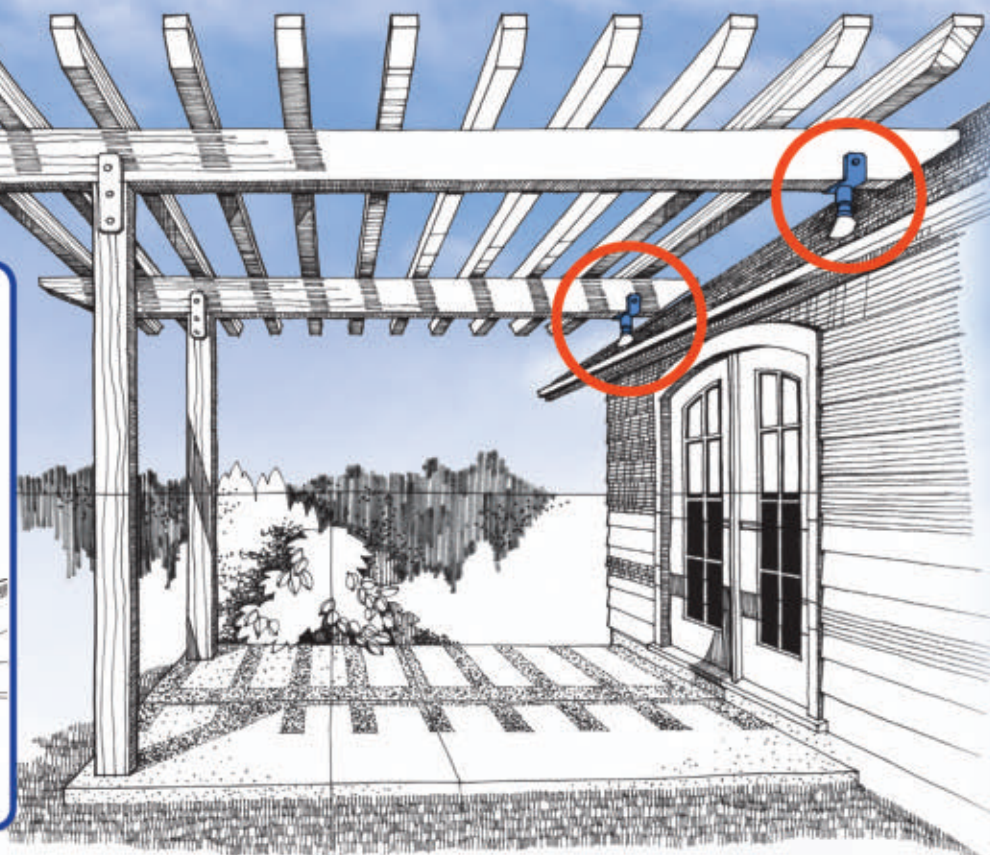
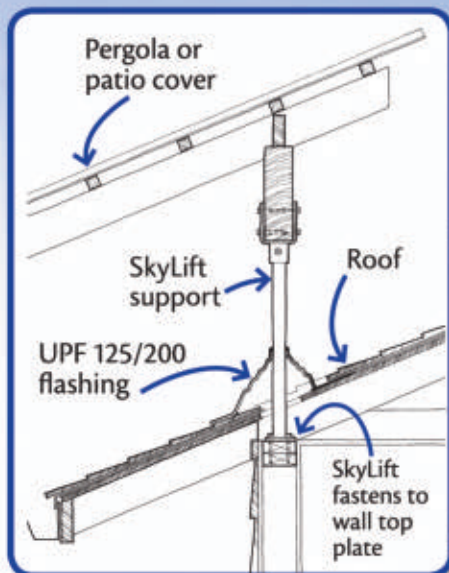
Aeration fights thatch and soil compaction. Over time, built-up thatch and tightly packed soil can choke off nutrients from the grass. More than 3/4-inch of accumulated thatch can lead to lawn disease, insect infestation and ultimately drought. Soil compaction, due to traffic, rain and erosion, can do the



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YOUR LAWN QUESTIONS ANSWERED

same. An aerator is a machine that minimizes compaction by thinning the tightly packed soil while also removing built-up thatch. In lawn maintenance, aerating literally means “to supply with air;” it allows air, water and nutrients to enter the soil and nourish the lawn.

Aeration should be done after the lawn has been mowed down to about 2 inches high. The most effective type of aerator is a “core” aerator, which uses hollow tines to remove “cores” or plugs of soil, leaving them laying on the lawn’s surface to return nutrients to the grass as they dissolve. Many homeowner-type aerators use spikes that simply poke holes in the soil, but these types aren’t quite as efficient. Some aerators are available as walk-behind or ride-on gas models, while other

versions can be towed as an attachment behind a lawn tractor.

Keep in mind that core aeration should only be done to correct problems of soil compaction and thatch buildup. It’s a great way to wake up an unkempt lawn at the first of spring, prior to fertilizing, but shouldn’t be a part of routine maintenance. For this reason, if you don’t want to invest money in the machine or store it during the off season, you should consider renting one.

With a freshly aerated lawn, you’re ready to over-seed the turf. Make sure you’ve chosen seed that grows well in your area and matches the pre-existing lawn to avoid a patchy appearance. If you’re unsure, then inquire at a local garden center as to what works in your neck of the woods. **EHT**



© Valentina Razumova

WHAT TYPE OF GRASS DO I NEED FOR A “NO MOW” LAWN?

Certain grasses that are native to western regions of the U.S. can live on rainfall alone in their natural habitat and require mowing only a few times a year to keep a neat appearance. “No-mow” grass types include Pacific hair grass, fine fescue, buffalo grass and blue grama. Typical blade height is 2 to 6 inches high, and the blades grow sideways so the lawn shades itself and holds in moisture to withstand droughts. These types of grass offer inherent environmental benefits, resulting in fuel savings, fewer emissions from your lawnmower, no chemicals and less water usage. Several companies distribute the grass online, tailored toward the climate you live in. It can be planted from seed or from custom-grown plugs.

HOW DO I KEEP MY LAWN GREEN IN THE WINTER?

The EHT staff lives in Alabama, an area rife with St. Augustine, Centipede, Zoysia and Bermuda. These types of grass go dormant in the winter and turn an unbecoming yellowish brown. To solve this problem, some southern homeowners over-seed their lawns in early fall with a cold-season grass to keep the lawn green throughout the winter. When doing this, make sure to choose a cold-season grass that will die in the spring, such as Annual Ryegrass. Otherwise, when the warm-season grass awakens from dormancy, the two types will compete for nutrients.



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Wood fencing can also be constructed in a wide range of styles. Research your design options to get the most value for your money and the right fence for your needs.

WHAT MATERIAL SHOULD YOU CHOOSE?

Most fences are made from wood because it's affordable, versatile and easy to obtain. Wood comes in uniform sizes, and it's the easiest

material for a homeowner to use. You can finish it with paint or stain. Or, if you use treated wood or cedar, you can let it age to a natural color.

Proper installation is the key to an attractive, long-lasting fence. The single greatest problem with wood fences is premature failure of the posts. Wood does not hold up well to ground contact and once the posts begin to fail, the appearance of the fence is compromised. Be sure to use quality posts and rails made from softwoods that are naturally rot-resistant such as cedar or redwood, or those that have been pressure-treated to limit rotting. Buy hot-dip-galvanized, aluminum or stainless steel fasteners. Other fastener types can rust and disintegrate, or react adversely with the natural preservative oils present in some wood.

The appearance quality of the boards you choose will make all the difference in the way your finished

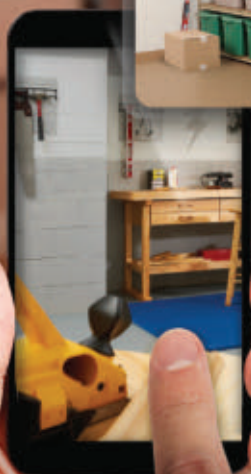
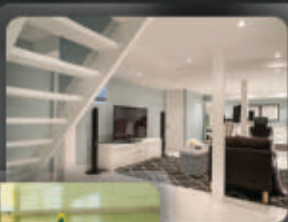


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FENCE FACTORS

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Check with your local municipalities or homeowner associations to determine what fence styles, materials and building practices are acceptable in your area.

fence looks. You'll find different grades that meet the various quality specifications. In terms of wood quality, you generally get what you pay for.

Wood fencing materials let you choose from a wide range of styles limited only by your imagination. Consider all the possibilities before you decide.

PANEL STYLE

For an easy-to-build fence on a flat yard, DIY'ers might consider using pre-assembled panels that install between posts. The rectangular panels are a system of rails and pre-attached fence boards. However, if your yard is sloped, then to keep the panel tops level you'll have to stagger the panel heights where they fasten to the posts. If the yard has a significant grade, the staggered panels will create gaps at the bottom of the fence, through which a family dog can escape (and unwanted critters can enter).

Whether using pre-assembled panels or building your own, the stretches of fence between the posts can have the pickets installed uniformly, or they can feature a repeating panel pattern for additional décor. Arched or scalloped panel tops, for example, can give a privacy fence a distinguished

© Kasper Nymann



Arched or scalloped panel tops can give a privacy fence a distinguished appearance.



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appearance, but keep in mind that these styles work best on flat, open yards that make it easy to keep the pattern consistent.

PICKET ARRANGEMENT

Fence styles vary greatly, and ultimately the pattern and details are up to you. The following is an overview of the most traditional styles.

Solid Board — Available with a cap rail for an estate look, this style also can be arched or scalloped for a flowing look that highlights the post, which can be finished with a decorative topping.

Shadowbox — This privacy fence allows breezes to pass through, looks attractive from both sides and is easy to build. When built with boards that alternate position on both sides of the rails, a shadowbox fence can allow a degree of visibility to the other side of the fence when looking through it from an angle, but provide obscured privacy when looking straight at the face.

Spaced-Picket — Popular for its versatility and perhaps the most traditional of American fences, the traditional “white picket fence” makes a good border while providing an open view.

Lattice Top — Lattice comes in a diagonal pattern and a horizontal/vertical pattern, providing your fence with a beautiful, finished look. This privacy fence allows privacy yet provides vision through the lattice top. Lattice’s open design breaks a strong wind into a light breeze. In addition, breezes are allowed to pass through with less resistance, putting less stress on the integrity of the fence.

Stockade — Another popular early American style, it offers a classic New England look with panels consisting of thinner 3-in. pickets butted together with tight spacing.

Basket Weave — Attractive when viewed from either side, this style is very strong and makes an appealing privacy fence. It’s also an attractive backdrop for plantings. Vertical 2x2 spacers are weaved between horizontal fence boards for a unique-looking fence.

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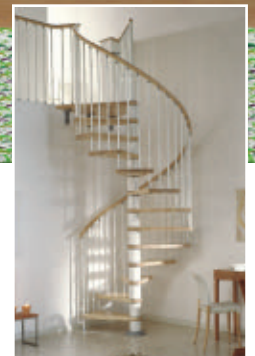
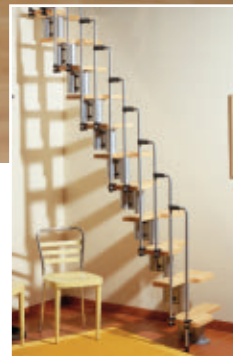
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FENCE FACTORS

Because of the spacers, each fence board needs to be longer than the distance between posts, so it can bend to fit. Be sure to cut the boards to fit each section individually.

Vertical Board on Board — Another privacy fence, this attractive design requires three rails with boards attached to each side.

Post and Rail — This fence combines an open view with exceptional sturdiness. The different types available allow you to create a unique look for your landscape. Add wire mesh or stainless steel cable inside the fence for containment of pets or children.



© Natallia Khlapushyna

For a rustic appearance, a post-and-rail fence made with round posts creates a uniform look that flows with your landscape.

BUILD A FENCE GATE THAT WON'T SAG

Wooden fence gates are notorious for getting out of whack. The wood's inherent instability during temperature changes coupled with the heavy weight of the gate can stress the wood connections as well as the metal hardware, causing the gate to warp, sag and eventually require replacement.

A "No Sag" gate kit with metal brackets can solve the problem. Available at most hardware stores, the kits typically include two hinged brackets, two non-hinged brackets and an assortment of mounting screws. The kit is designed to fit a gate 25 to 72 inches.

The brackets comprise the corners of a square gate frame made of 2x4s. Predrill all screw holes to avoid splitting. Once the square frame is complete, fasten it to the fence post, ensuring it is level and plumb. Check its swing for smooth unobstructed performance and make any necessary adjustments. Then, using quality decking screws, fasten the 1x boards to the reinforced gate frame using two screws at each 2x4 location.





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FENCE FACTORS



© Vitaly Iskakov

This post-and-rail fence features mixed materials. With a 6-gauge welded 4x4 mesh pattern, this option from Wild Hog Railing preserves visibility while being extremely durable.

BOARD STYLES

Dog Ear — The dog-eared fencing style remain a popular and economical choice. Dog-ear boards can be used in several styles of fencing, from privacy to shorter, picket-style spaced fencing. The term "dog-ear" applies to the shape of the top of the boards. Instead of a flat top, the boards have the corners sawed off, providing a "dog-ear" shape, or half-hexagonal shape, to the top of the boards.

Picket — Picket style fence-boards have deeper, steeper corner miters at the top for the more pointed appearance of a traditional picket fence.

For a rustic boundary or accent for your property, consider the following fence styles:

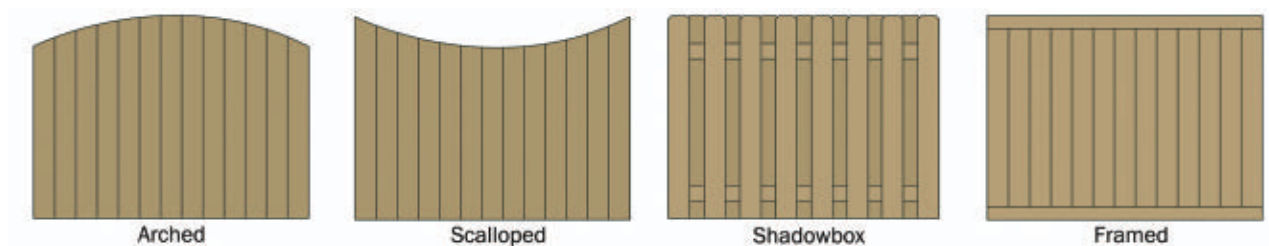
Split Rail — Use Western Red Cedar in either two- or three-rail design for a true Appalachian look.

Round Post and Rail — Made with round posts, this system creates a uniform rustic appearance that flows with your landscape.

Ranch Rail — This is a popular look for equestrian containment. A stately take on the split three-rail design, this system can be finished in white or black, often with capped posts.



With a basket-weave style, vertical spacers are weaved between horizontal fence boards for a unique-looking fence.



Common panel designs.

Gothic — The tops of these fence boards feature additional detail for a more ornate and classical look.

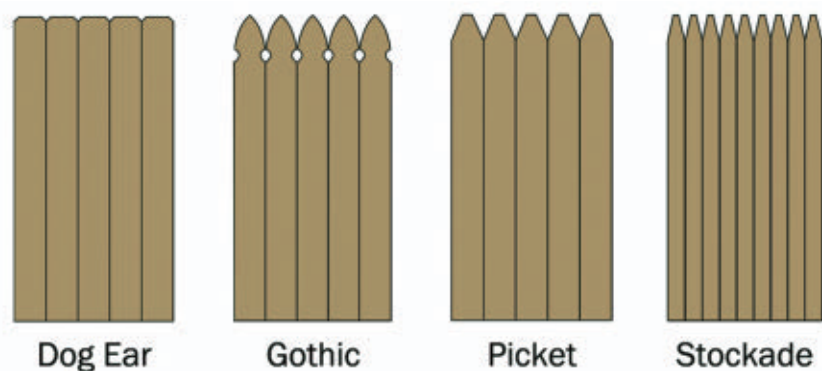
CUSTOMIZE YOUR FENCE

Workability and adaptability are two key benefits of wood fence systems. These benefits allow you or your design professional to create a unique system. Boards or pickets can be topped to match or create a design. Fence posts can also be topped to match your boards, or if left as a flattop post, the addition of unique post caps will put the last finished detail on your fence. Caprails and fascia boards add elegance and create a more formal look. And arbors, trellis and pergolas can be incorporated with fence systems, creating your own personal touch and look.

ADDING THE GATE

The gate is the most important part of your fence, and since it's also the only moving part, it's most susceptible to sagging, sticking or slipping out of alignment. Properly designed gates will use quality hardware to help maintain proper operation.

Strong gate posts are critical for wood fences. Wood's tendency to warp and twist can cause any gate design to become misaligned.



Common fence-board styles.

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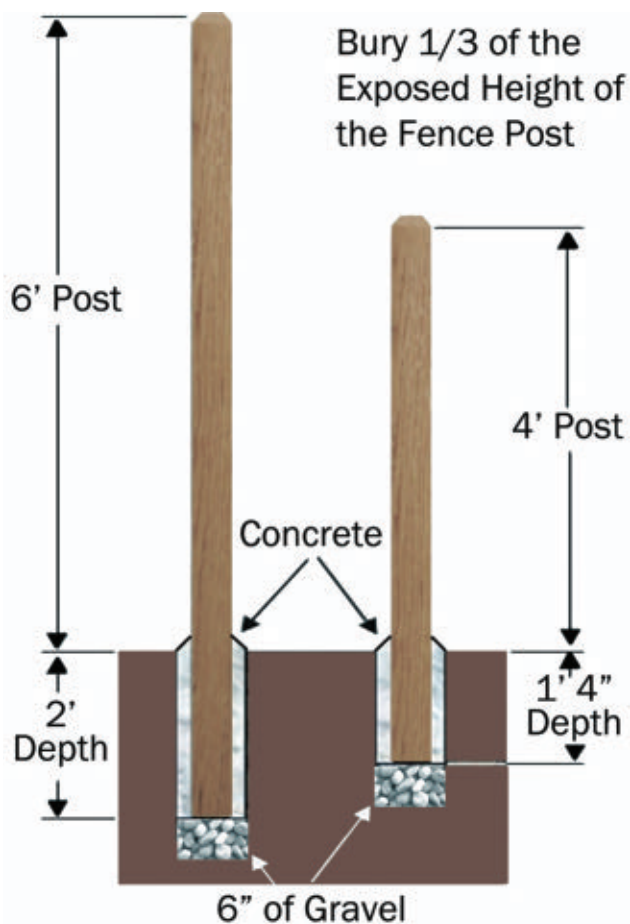
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FENCE FACTORS



To better ensure longevity of the wood gate, consider using steel posts for the posts. Steel is a solution for natural warping and twisting of wood posts.

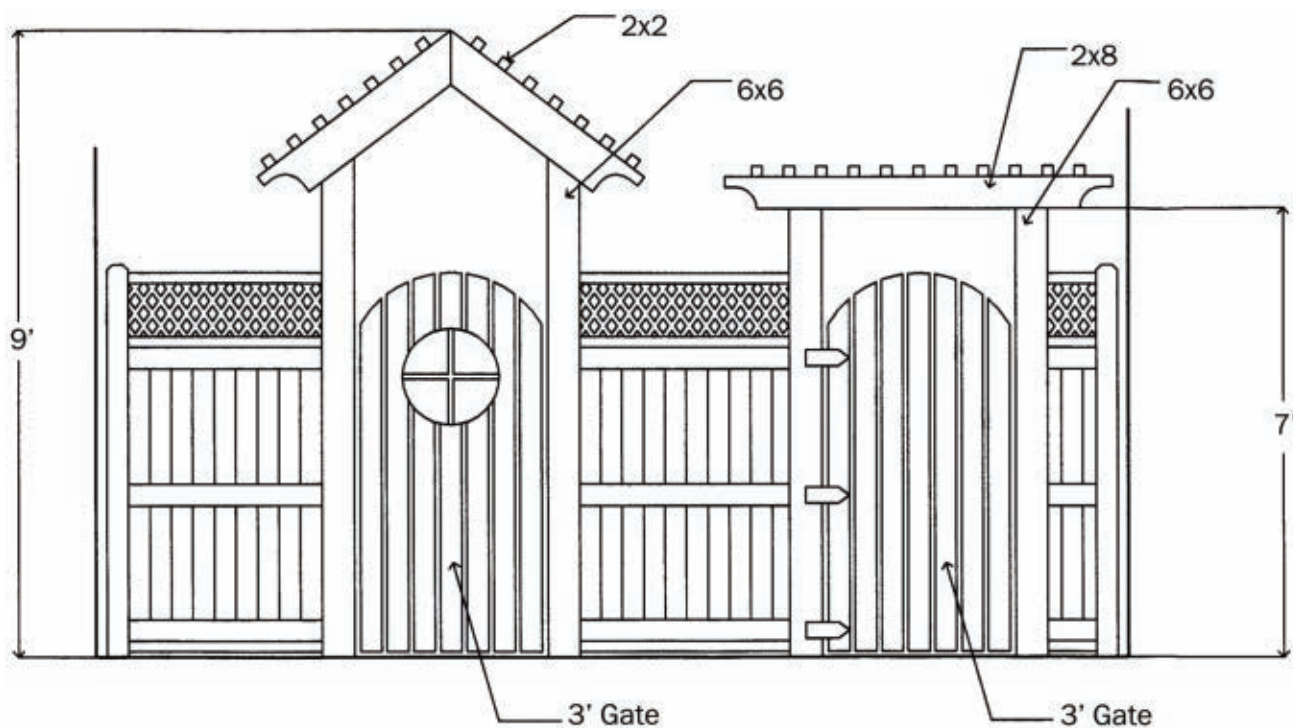
Make sure the size of your gate post can handle the weight of the gate. Wider gates require larger posts that will not bend under the stress created from opening and closing the gate.

Several types of gate hardware are available. Gate hardware that is coated with an epoxy and then a polyester finish will yield long-term resistance against fading and rust. Another option is gate hardware with plastic and stainless steel components that allow you to lock the gate like your front door, featuring reliable latching action with a sleek design.

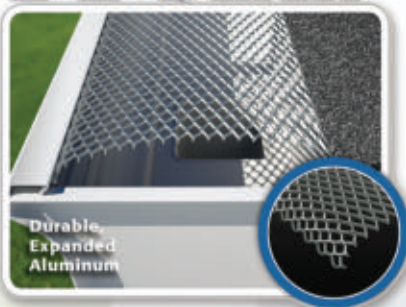
Gate frames are another source of failure with wood gates. For a wood-frame gate, consider using a gate sag prevention kit that includes a turnbuckle for adjustments as the gate wears. **EHT**

Proper post installation helps ensure a long-lasting fence.

Mix and match fence styles to create a customized look that suits your needs.



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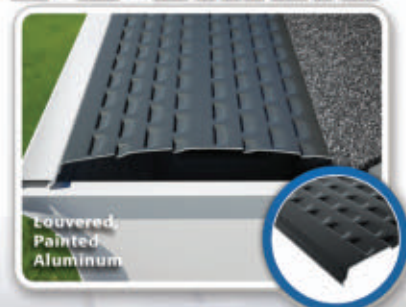
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One Fence to Rule Them All

By Mark Clement

Every so often I run across a project I love so much that while I'm building it, I find myself saying: If there was one project I'd like to do over and over, it'd be this one. This happens to me with decks and playsets, because people use them, and I'm literally building fun.

It's not usually my experience with fences, but this one has many design and installation elements of both, so I suppose it's no surprise. Also, I absolutely love the way this fence looks. It is ridiculously robust and its simple, solid design gets reactions.

The materials for this fence are not some flimsy, light-reflecting ode to other materials' ironic impermanence. Built from two main components—6-in. pressure-treated round poles and treated 2x6x10—this fence has uber detail and texture. It has two good sides, so neighbors are happy. As Robert Frost wrote: "Good fences make good neighbors" is the stuff of poetry, but also real life.

So is pulling string lines, digging holes, and cutting boards, so let's leave the poetry to the poets and rattle this thing together. Here we go:

DESIGN AND PERMITS

If you're a DIY'er, don't be afraid of applying for a building permit. Sure, you can skate under the radar for lots of stuff, but if you blow a fence or a neighbor is unhappy, you just poked a hole in a keg of problems that are a hundred times worse than the permit.

A permit is an insurance policy.

You'll need a "platt" of your property, which shows the property lines. You draw a line on that indicating where the fence goes. The building official will tell you that it (usually) can't be taller than 6-feet, that there has to be a gap at the bottom for trimming grass, and that, at a certain distance from a driveway or sidewalk, it has to taper down to 3-feet so you can see people as you pull out of the driveway.

LORD OF THE FENCES

Property Line—I've always been lucky enough to find the steel rod marking property lines, but you have to look for it. If you build a fence 6 inches on your neighbor's yard, you just built them a fence. Once I find the property line, I set my fence 2 inches inside it. Better safe than sorry.

Design—This fence draws from my love of the substance and organicness (is that a word?) of wood, especially when I get to use round poles (aka, pilings). I once used them to build a playset and I have loved them ever since. This fence is simple like Hemingway's prose, but not simplistic, also like Hemingway's prose.

I set the posts on the line, then ran the horizontal planking front to back. The 2x6 waned and gapped and delivered a wonderfully nuanced feature rather than a wall. For a no-gap, straight up look—which I'd also love—use a V-joint tongue and groove. It'd be drool-worthy to any wood lover.

STRAIGHT-LINE LAYOUT

String, pulled tight, is straight. Just ask the Egyptians.



The posts of this fence are made of 6" pressure-treated round poles.

Getting a string straight for a fence job is hard. Most dudes make some kind of 2x4 stake and bash it into the ground to mark their lines. This is difficult, inaccurate and weak.

Instead, I use gas pipe cut to a point with an angle grinder. I drive two into the ground like a nail to a 22-degree-ish angle and pull my string between it. To get the string tight, I wrap it around the threads of the pipe and cinch it with a knot called a trucker's hitch. The knot is

easy to tie and is so powerful you should be careful not to break the string.

POST POSITION

My love affair with this fence starts with the posts.

Using the string, I mark the post locations 9-feet on center. If I'm off a hair, who cares? We'll get to this in a minute.

Then, I dig my post holes. While frost matters where I live (Philadelphia) it may not matter



I map the layout by pulling string between lengths of gas pipe staked into the ground.



Tighten the string by wrapping it around the pipe threads and cinch it with a trucker's hitch. Brightly colored string offers high visibility.

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To position the posts, I pound 4x4 “stretchers” into the surrounding dirt to help brace them during adjustment.

where you live. I say that because the post depth isn’t determined entirely because of frost. It’s also because wind blows and children climb. Any post needs ballast from the earth to stand strong.

At the bottom of the hole, I drop a few inches of 1/2-in. pea gravel. Next, I drop the posts. The string is my guide.

To hold them in place before pouring concrete, I use what I call “stretchers” to bridge the hole. And, I wish I thought of this 20-years ago: A 2-pound sledge is ideal for tapping them into soft earth and nudging the post around in the hole.

Post holes were marked 9’ on center, and each post was anchored with 80 lbs. of concrete.



Be sure to set your posts deep enough to support this heavy-duty fence.

I plumb them in both directions and trap them with a bridge-block. My preference is to pour concrete, so I do that. An 80-pound bag makes these things near skyscraper permanent.

Slats—This lot sloped, so I cut the first course of slats lengthwise

to match the slope. Essentially, it required ripping a 2x6 in half. Every site will be different, so judgment calls should be made. The goal is to match the ground while keeping the gap your inspector wants, and getting the top of that first board level.





The lot was sloped, so I ripped the first course of slats thinner to follow the grade.



Cut the first courses to fit, but run the rest of the slats long.

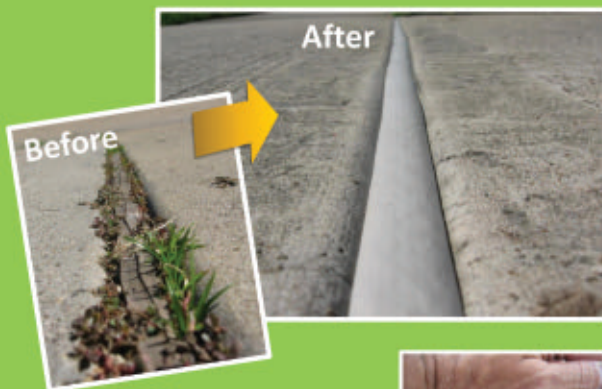


For the first and second full courses cut the boards to your desired length. For the rest, run them long.

I used #10 x 3-inch Spax HCRx coated screws to fasten the boards. For reasons too innumerable to mention, I love them. And I could have gun-nailed this to be sure. But as I thought about it, it would have saved me little to no time. Maybe this is just opinion, but there is time lost in hose-dragging and going from one side of the fence to the other that is made up by simply walking around the other side with a cordless impact driver and whaling in the screws.

Cut 'em—With all the slats installed up the 6-foot limit. Use a level, mark a plumb-line, then (like a deck boards) strike a line

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LORD OF THE FENCES

and cut all the pieces at once. And, if you follow MyFixitUpLife on Facebook and have seen the keyboard warriors who know more than I do about everything, then you know it's unequivocally easier

to cut from the bottom up rather than top down.

Transitions—Where the grade dipped, and I didn't like how much the transition varied from panel to panel, I added a cham-



Attach the slats using quality exterior-grade fasteners, such as these #10 x 3" Spax HCRx coated screws.



Snap a line and cut all the ends of the slats at once.

fered transition piece at the top of the lower panel.

Lawn—Grass won't grow back magically from where the holes have been dug. And it'll take a beating from all the walking and digging. Whether it's a house I'm flipping or a customer's house, I advise letting the lawn grow for a few weeks before the fence job. It'll better be able to handle the piles of dirt thrown on it and recover from the digging and other activity.

In my book, there is no better mulch for grass seed than grass clippings. So, after the fence is in, I sow seed over exposed dirt, then I mow the long grass with a side-discharge mower (remember those?) and shoot the clippings at the base of the fence.

This traps the seed and holds the water—daily watering is required for grass seed to take.

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LORD OF THE FENCES

TAKE NO A-FENCE

And there you have it, a fence that could keep elephants in. Or out. Maybe. I never tested it for that. But of all the fences I've built, this one rules them all. Want one? **EHT**

Editor's Note: Mark Clement's YouTube channel is www.YouTube.com/MyFixitUpLife

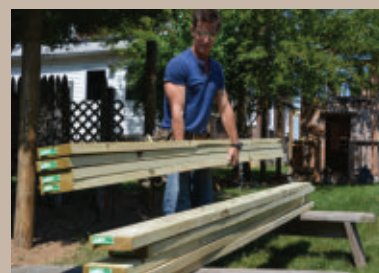


Where the grade dipped, I chamfered a transition piece at the top of the lower panel.

A FEW ODDS AND ENDS TO MAKE LIFE EASIER

Wood and materials storage is a challenge. Since a fence like this one has hundreds of parts, storing them at the optimal height and location helps. This is true for any home-improvement project, but some bear this out more than others. For projects like this I build timber bunks. They're about 16-inches high, made with 2x10 and you can park a dump truck on them. They're the ideal height for putting down and picking up the many treated 2x6 slats on this job.

I can't be happier with how setting the slats front-to-back makes me. I enjoy looking at this fence from all angles. It has received many comments on our social media pages (MyFixitUpLife) and, as I said in the intro, I'd build this again in a heartbeat.



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On this fence, the front end of the slats attach against the face of one set of posts and then to the back of the next post in line.



Sowing new grass seed will help repair the lawn after all the dirt work.



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Rough Sawn Pine Patio Cooler



portion of the cooler. I fastened these four parts together with two 2-in. screws at each corner. Make this upper frame snug. Later on you will be installing screws through the cooler and into this frame.



I love backyard barbecues, and for many years we used two Coleman coolers to store beer and soda. While this worked fine, I wanted something better looking, easier to access and maneuverable. After seeing a vintage rolling cooler at a media event I attended, I decided that I'd like to make one of my own.

The first step is to gather all of your materials together and decide what type of wood you want to use. I chose 12-in. rough sawn pine because I really like the rustic look of it.

BUILDING THE FRAME

I had an old Coleman cooler sitting around so I chose to use that. I removed the handles, drain spout and hinges.

Tipping the cooler upside down on my workbench, I started this project by constructing an upper and lower frame. This frame is used as a skeleton to the project, and all of the components from the siding, legs, top sill and lid will attach to it.

I constructed the "upper frame" out of framing material. I ripped scrap 2x6 down to 1-1/2x2-in. and built a frame to enclose the top



Next, I built the bottom frame. This is the frame that will hold the cooler and take the weight when full of beer and ice. This frame consisted of a perimeter of ripped down 2x6 stock and two wood stretchers bridging the frame.

CUT THE SIDE MATERIAL

With the cooler upside down on my work bench and my bottom frame on top of the cooler, I then measured the height of the wood sides.



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Important Note: Deduct the thickness of the wood you are using from this side material measurement. This is important because you will later be covering the upper frame with this wood. If you don't take this step, your lid will not align and close correctly. I neglected to do this and had to add rough sawn spacers to the lower frame stretchers to make up for this error.

I ripped the rough pine down to 6-in. wide boards and then added a bevel to the cut ends for a decorative touch. To add the bevel you can use a block plane and do it manually, or set up a router and a bevel bit.

Note: throughout this project I tried to hide or eliminate cut edges when I could. Areas that could not be avoided ended up being on the top lid, and I'll describe how I dealt with that later in the article.

ATTACH THE SIDE BOARDS

I attached the 6-in. side boards to the upper and lower frames using DAP DynaGrip Wood-Panel-Trim adhesive and 2-in. galvanized finish nails driven with a pneumatic nailer.



Note: The DAP DynaGrip Wood-Panel-Trim can be used for bonding all trim materials including wood, foam and PVC. It is a latex formula that wipes off and washes off your hands fairly easy. The

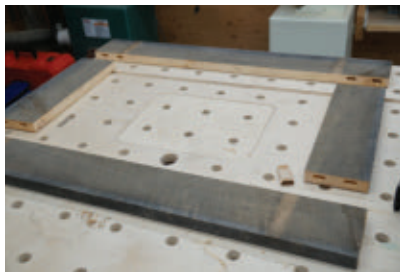
new DynaGrip adhesives were designed to deliver high-strength bonds in hours and to provide exceptional performance even in extreme weather conditions.

When installing the boards, I spaced them evenly on the front face and left any filler gaps at the corners. Depending on how large or small the end corner gaps were, I filled them with scrap boards or left them. The areas are getting covered by the legs in the next step and will be hidden.

Note: The bottom is left open to drain and allow air to dry the back sides of the frame and side panels.

MAKING THE TOP SILL

The top sill covers the upper nailing frame and also overlaps the sides enough to hide the end grain of the legs, plus some additional overhang. I chose 1-1/4-in. overhang (3/4-in. leg coverage + 1/2-in. overhang).



The top sill is constructed out of four rough sawn boards with live edges facing out and the cut edges facing the cooler.



The boards fit snug around the cooler's perimeter. I left 1/8-in. of a space on all sides to avoid conflict with the lid closing. The top sill boards join together with butt ends. To ensure a solid fit I fastened them with a Festool Domino XL joiner and then glued and clamped.

Once the glue dried, I slipped the top sill over the cooler top and secured it to the framing with DAP DynaGrip adhesive and finish screws.

Note: This cooler does not have side handles, but the sides of the top sill lend itself to an intuitive handle, so I installed a few screws through the top sill and into the upper frame at this location. Keep the screws close to the cooler so the top lid hides them.

BUILD THE LID COVER

I then installed the Coleman plastic lid onto the cooler and measured the exposed sides. Ripping four boards to that size and fastening them together with finish nails gave me a skirt that would hide the sides of the lid. I secured this to the Coleman lid by fastening screws from inside



the lid and into the wood. Take care to use the correct length fastener, and not over-penetrate the wood.



I finished the top of the lid by ripping a 12-in. rough sawn board into two even boards to completely cover the skirt trim I created. I used the Festool Dominos and glued this lid together, and then attached

the lid to the sides with adhesive and finish nails.

When all this is complete, secure the cooler to the upper frame with screws. I then applied some adhesive on the Coleman lid top and placed it into the wood

casing. I used 4-6 screws, from the outside of the rough sawn wood into the upper cooler lid.

ATTACH THE DRAIN VALVE

Part of the nostalgic look of this cooler is the cool brass water

TOOLS NEEDED:

- Miter saw
- Orbital sander
- Table saw
- Pneumatic nailer and 2" nails
- Drill
- Tape measure, ruler, pencil
- Wrench
- Bar clamps
- Speed square
- Sander / hand sander
- Hand plane or router with bevel bit
- Forstner bit or hole saw set
- Wood glue
- DAP DynaGrip Wood Panel Adhesive
- Galvanized screws of different lengths

MATERIALS NEEDED:

- Cooler to use an insert
- 4" PVC riser, 1/2" threaded piping,
- 1/2" threaded coupler
- Brass knob spigot/valve
- Four locking caster wheels
- 2 Hinges
- Handle(s)
- Bottle opener
- Bottle cap catcher
- Paint Brush
- Minwax stain – Early American 230
- Wood – I purchased 1x12 and 1x4 rough sawn wood for this project
- Reuse some of the cooler parts: Keep drain plug parts and the lid strap and stainless steel screws.

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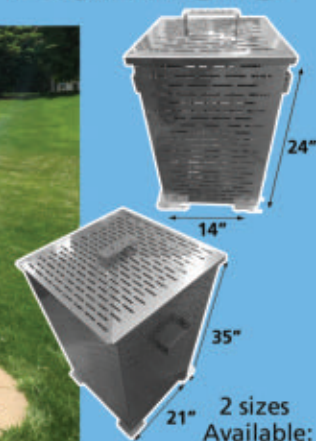
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PROJECT NEXT

spigot. I purchased some 1/2-in. PVC piping to connect the brass spigot to the hole in the side of the cooler.

Mark where the hole will go through the side of the wood sur-

round. Then, drill a small hole through the wood from the inside. Next, use a larger Forstner or spade bit or hole saw from the outside to finish the full sized hole. The size of the bit will

depend on the diameter of the pipe you're using.

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the supplies. I used the plastic hardware that came with the cooler to attach to the threaded 1/2-in. threaded nipple. The 1/2-in. coupling secured to the other side of the cooler. I then used a 4-in. long 1/2-in. riser to go from the coupling to the spigot/shutoff valve. I reused the stop nut and washer to the original cooler drain.



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Note: I had to play around with pipe lengths to make this work, and in the end I added a wood block to the outside of the cooler to account for the extra pipe length.

ATTACH THE LID TO THE TOP SILL

With the new wood-covered lid in place, on the back of the cooler, I measured in equal distance and marked my hinges on the lid and



top sill. Using a sharp chisel I recessed the hinges on the top sill only. I then installed the hinges and also reinstalled the lid strap that came with the cooler. This strap keeps the lid from flopping over and will now protect the brass hinges.

ATTACH THE LEGS

I used 1x4 rough sawn boards for the legs in order to avoid having cut edges. I attached the two legs together with three 2-in.



screws and then mounted them to the case, butting up tight to the top sill. Once in place, I fastened them with eight 2-1/2-in. screws into the top and bottom frames.

ATTACH THE HARDWARE

For the lid handle, I deviated from the normal handle look and instead opted for an old tarnished brass sash lock. I used the Domino cutter to cut a slot for the lock. To open the lid, you simply lift up the lock and pull.

I also mounted a YETI bottle opener, I chose the YETI opener because it's cool looking – you pick what you like.

ATTACH THE WHEEL CASTERS

To attach the wheels, I added a block of wood (3/4x1x6-in.) on the inside of the legs for additional

support and also to support a shelf. I placed the rough edges of the block facing out and used adhesive and screws to attach it to the legs.

I then fastened the casters to the bottom of the legs with four galvanized 1-1/4-in. screws.

BUILD A LOWER SHELF

I decided to attach two stretchers, one attaching the front legs and the other the rear legs. The idea was to allow for a “open slat” type shelf.

I ripped all the scrap rough sawn boards I had, favoring the ones with live edges, to 3/4x2-in. strips. I then ripped the 3/4-in. side down to 1/2-in. strips. Using a Ridgid belt sander, I sanded the end grain. I also used the belt sander to add bevels to the ends for decoration. The coarse abrasion of the belt sander helps maintain the rough sawn appearance.

STAINING THE EXPOSED END-GRAIN AND EDGES

The last part of the project was to blend in the exposed end-grain and edges. I used a Minwax Early America 230 stain to darken the wood. I then rubbed a graphite pencil over this area and rubbed it in with sandpaper and a rag. The effect was to create an old, weathered, dirty patina to match the rough sawn boards.

FILL WITH BEER AND ICE AND SERVE!

The best part of this project will be filling it with ice and beer and enjoying it. The casters will allow me to wheel it off of my screen porch and onto the patio or pool deck. I can then wheel it back to store it and keep it from the rain. This cooler is going to be a great addition for your summer barbecues, events and parties. **EHT**

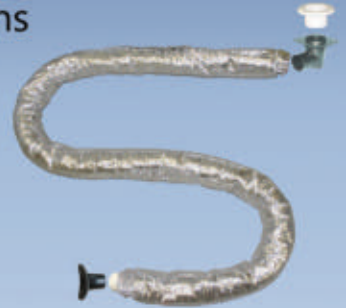


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How Bad is a Rear Main Seal Leak?

Keep your engine oil where it belongs.



of the main bearings in your engine, which needs to be constantly lubricated by oil. The constant bath of oil combined with the spinning motion of the crankshaft will cause a rear main seal leak to allow a significant amount of oil to leak from your engine as it's running. The gaskets in your engine can also cause leaks, but since there is no relative motion there, the leaks are often slow and more of a weeping or seeping than a drip or stream.

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Maybe you've gotten the news that your vehicle has a leaking rear main seal. Or perhaps you've started to notice oil dripping from the back of your oil pan and have wondered if you may have a rear main seal leak. No matter why you're asking, "How bad is a rear main seal leak," the answer unfortunately is, it's bad.

A leaking rear main seal can cause a lot of problems with your vehicle. The rear main seal is the seal that goes around your crankshaft at the rear of the engine. The crankshaft in your engine is

held to the bottom of your engine block using main caps at each of the bearings. The oil pan is then bolted on over that, and a seal has to be placed over the crankshaft in between the block and the oil pan. This seal helps keep dust and dirt out of your engine and helps hold the oil inside the oil pan.

The reason a leak can be so dangerous is due to the nature of the seal. The inside of your rear main seal is in contact with your crankshaft as it is spinning around thousands of times every minute. This seal is also right next to one

Also, once your rear main seal starts to fail, the rotation of your crank shaft can cause the problem to go from bad to worse extremely quickly. Rear main seals usually start to leak due to a worn surface or a small crack, and the constant stress of rubbing on the spinning crankshaft can make worn surfaces or cracks get much worse very quickly.

A rear main seal leak can cause problems for your engine because it can allow such a significant amount of oil to leak out very quickly. Most engine oil leaks will lower your level to a dangerous point over a matter of weeks or even months. A rear main seal leak, on the other hand, can cause your engine oil level to drop to dangerous levels in a matter of minutes, or perhaps even more

quickly. Your vehicle is equipped with a low oil-pressure light, which can help alert you to a problem, but if your engine has low oil pressure it may already be too late, and damage already may be done.

A low oil level in your engine is one of the quickest ways to cause permanent engine damage. A low oil level will uncover your oil pump's pickup screen, causing oil to stop flowing through your motor leaving your camshaft, bearings and valves to move without lubrication. Also, a low oil level means your crankshaft is no longer splashing in the oil, which helps cool and lubricate your main bearings, rods and piston rings. Even at normal driving speeds this lack of oil can cause permanent damage to happen in a matter of seconds.

If you've discovered a rear main seal leak in your vehicle, seal the leak today before it's too late. Head to your local auto parts stores and pick up a bottle of BlueDevil Rear Main Sealer. Simply add BlueDevil Rear Main Sealer to your vehicle's engine oil to recondition and rejuvenate your rubber seals. Your rear main seal leak will stop over your next few trips in the vehicle, guaranteed. **EHT**

Editor's Note: This article was sponsored by BlueDevil Products®, manufacturers of quality sealants for the automotive aftermarket industry. The company currently supplies over 400 distribution centers across North America, South America, Europe, Asia and South Africa. For more information visit: www.gobdp.com.

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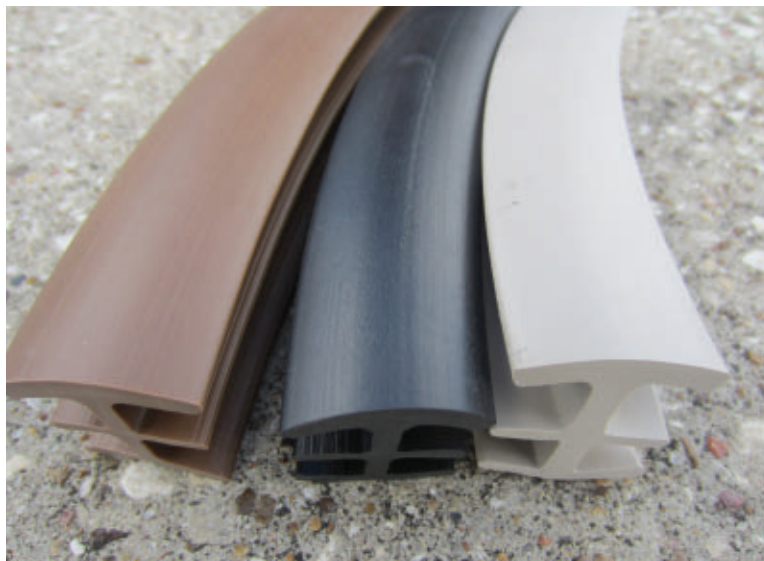
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HOT PRODUCTS

TRIM-A-SLAB

Are open expansion joints in your driveway growing weeds, or even getting dangerous? Are you tired of spraying chemicals, or find that the caulk-like materials are too messy to apply, and they just don't look nice? The alternative to the traditional cure-in-place sealants is a new method of expansion joint repair using elastomeric seals. Trim-A-Slab is a flexible, rubber-like material that is easy to press into concrete expansion joints. It fills joint gaps fully with a rounded "crown" that will make your driveway, sidewalks or patio look great, and be much easier to clean. Under the crown is a pair of anchoring beams that seal out weeds and water, eliminating open spaces that can cause trips and falls. Trim-A-Slab also helps maintain the integrity of your slab by preventing the soil beneath from being washed out by weather or pressure washing. Made in the USA, Trim-A-Slab can be trimmed with a PVC cutter, or even pruning shears, and is also removable and replaceable. It can be used to cover extension cords for holiday decorations without posing a trip hazard. Available in gray, black or walnut, in straight lengths or coils up to 50 feet in length, Trim-A-Slab sizes correspond to typical expansion joint spaces; 1/2, 3/4, 1 and 1-3/8 inch. Visit www.trim-a-slab.com.



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Quikrete Lightweight Fiberglass Reinforced Stucco (FRS) is 35 percent lighter than traditional pre-blended stuccos, making it easier and faster to transport, stage, mix, pump, place and finish. In addition, Quikrete Lightweight FRS is one-hour fire rated and contributes to U.S. Green Building Council LEED credits. Working with lighter bags decreases fatigue, increases speed and prevents mistakes. Quikrete Lightweight FRS is a Portland cement-based plaster blended with recycled, coated Expanded Polystyrene (EPS) beads,

uniformly graded sand, and alkali-resistant glass fibers. With unmatched durability, flexibility, workability, coverage area and ease-of-application, Quikrete Lightweight FRS is available in 50-pound bags and 1,950-pound bulk bags. It can be troweled or spray-applied on traditional three coat scratch, brown and finish systems from 3/8 inch to 7/8 inch as well as one coat systems. One 50-pound bag yields the equivalent coverage area of a traditional 80-pound bag of pre-blended stucco. Visit www.quikrete.com.

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Cali Bamboo has launched GeoWood, an engineered hardwood that combines real timber layered over GeoCore—Cali's stabilizing limestone composite foundation. A "rock solid" hardwood flooring with exceptional AquaDefy water resistance, GeoWood Flooring comes at a lower price point than solid wood planks. The full GeoWood collection will include real oak, hickory, maple, walnut, and bamboo. The beauty layer atop each plank is up to 1.2mm thick and features sustainably farmed woods and lumber from Lacey Act Compliant managed forests. The limestone composite core fortifies each GeoWood plank and resists indentation from high heels, pet claws, and furniture. Its composition translates to 50 percent better dimensional stability, meaning less expansion and contraction, and as little as 24 hours of acclimation required before laying down planks. AquaDefy technology ensures diehard moisture protection, making GeoWood perfect for bathrooms, kitchens, and below-grade spaces like basements. Shielded by a 10-coat scratch resistant finish, GeoWood planks are ideal for spaces with heavy traffic. The flooring is backed by a 50-year residential warranty and a 15-year commercial warranty—double the industry standard. The lightweight, easy-to-cut planks feature a click-lock system for easy installation, and the flooring can be floated or glued down over any type of even subfloor. Visit www.CaliBamboo.com.



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PRODUCT PROFILE



This family enjoys the harvest from their raised bed garden while also enjoying their beautiful Wolmanized® Outdoor® Wood deck.

Creating Raised Planter Beds with Wolmanized® Outdoor® Wood

By Belinda Remley

It is a beautiful Saturday afternoon during the summer at the Rumbaugh house. Dad, Andy, beckons daughter, Kerry, to join him in the backyard. Together they stand in front of their raised bed vegetable garden, scanning for any ripe fruits of their labor. Seven-year-old Kerry jumps with excitement as she spots their first ripe tomato.

"Every time we head back out to the garden," says Andy, "we get excited to see any vegetables we have grown. It's even better when we get to enjoy fresh vegetables in our dinner just hours after they are picked."

The Rumbaughs, like many families, are interested in a semi-sustainable lifestyle, where they are responsible for growing much of their own food. Moving to this fresh way of thinking also caused them to regard gardening practices. So when it came time to actually build the garden, Andy chose to create raised planter beds. He is not alone. According to a recent study commissioned by Lonza, raised planter beds are second only to deck building and remodeling in outdoor projects that could be built with wood. Raised bed gardens are a project that even a novice can tackle.

"We started gardening about 10 years ago when my wife and I bought our first house," says Andy. "I looked at some plans and decided that I would attempt to build a raised bed. By the time we moved into our next house, I felt very confident when I built my second set of gardens. It just took a few pieces of Wolmanized® Outdoor® Wood (2x6s and 4x4s), screws, my circular saw, and my helper, Kerry." Andy said he built two raised bed gardens in just a few hours. The good thing, he adds, is that the planter beds can be used year after year because they are built using Ground Contact preserved wood.

According to Jay Hilsenbeck, Residential Product Manager of Lonza Wood Protection, choosing the right wood for its intended use

is imperative for a finished project to last. Jay explains that the treated wood industry's governing body (American Wood Protection Association or AWP) voted a couple of years ago to redefine the selection and use of preserved wood. AWP, comprised of industry professionals, laid out a new set of guidelines spelling out when it is appropriate to use Above Ground preserved wood versus Ground Contact preserved wood. "Ground Contact preserved wood is treated to a higher retention level than Above Ground," explains Jay. "That simply means there is more preservative in ground contact preserved wood to offer necessary protection for more demanding end uses like raised beds."

The AWP guidelines say that Above Ground preserved wood is intended for the parts of a project that are at least 6 inches above the ground, where the wood dries easily, and where it is well-ventilated around all the boards. Ground Contact preserved wood is versatile enough to be used in almost any application; in addition, it must be used in applications where the wood will come



Raised bed gardens complete, Andy Rumbaugh and his young gardening apprentice, Kerry, work to add rich planting soil.

in contact with or be within 6 inches of the ground or fresh water is critical to the structure and difficult to repair or replace is in certain physically above ground uses with harsher conditions (moisture, debris build-up).

"As an example, deck boards that are not subject to prolonged wetting from sprinklers and have good air flow around them can be treated to Above Ground retentions," Jay further explains. "Decking understructure such as posts, joists, and ledger boards should be treated to Ground Contact retentions."

In the case of Andy's raised bed gardens, the wood should be preserved to Ground Contact retentions because all of the pieces come in contact with soil and will probably be wet regularly as Andy and Kerry water their vegetable crop.

Homeowners like Andy choose preserved wood for their do-it-yourself projects. According to Lonza's study more than a third of DIYers have used preserved wood for an outdoor project in the past year.

"I like working with wood because it is flexible enough for just about any backyard project," says Andy. "If I have wood left over from one project, I can use it on another and I don't need any special tools. As a beginner, I just had the basic tools – a hammer, a drill and a saw. They worked just fine. Now I have more experience and more sophisticated tools, which I use only because they make the project faster."

However, when a project is too intense even for the seasoned DIYer, these weekend warriors often turn to professional outdoor building contractors. Just as with the casual user, these professionals recommend and use treated wood. According to Lonza's study nearly 60% of outdoor projects completed by professional contractors employed the use of preserved wood.

It is worth noting that some maintenance is necessary for outdoor projects just as an owner would maintain a car with regular oil changes. Similarly, homeowners can easily and inexpensively perform maintenance on their decks. Recommendations include cleaning and applying a surface water repellent every couple of years to keep the project looking beautiful. However, for projects such as decks to maintain that just-built appearance or to change the color as styles change, staining every few years is recommended.

As Andy reflects on his raised bed garden – year two – he is looking forward to the planting, nurturing and harvesting. "It's great to have the raised beds ready to go," Andy says. "And they still look great and are as sturdy as they were last year. I just have to work the soil a little and get planting."

Belinda has been promoting the wood industry for more than 24 years. She is a Marketing Communications Specialist with Lonza Wood Protection, a leader in wood preservation.

Note: To see a plan for a raised bed garden or other fun backyard projects such as a picnic table or a storage bench, visit www.WolmanizedWood.com/plans.

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