

The Home HANDYMAN

September/October 2022 • Vol 32 No 09



SA'S
ORIGINAL
DIY
MAGAZINE



MAKE AN
OUTDOOR CHAIR



METAL AND WOOD
BAR STOOL

DIY ideas for your:

- Bathroom
- Deck
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+plus

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- Make a mosaic frame
- Build a 'hutch' for your Weber



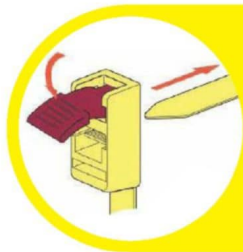
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FROM THE WORKBENCH

Returning to a past passion

Birthdays are great, aren't they? Admittedly, as you get older, they lose some of their excitement, but having a birthday as an 'older person' does afford you some luxuries. I am notoriously hard to buy presents for – I am a man of simple tastes, and I don't like to see money wasted – but this year I got to buy my own present.



So, what did I chose? A guitar, but not just any guitar... I used to spend my evenings refurbishing and refinishing guitars which I would then sell, and buy another one with the profits. Then kids and life happened, and I haven't done it much over the last decade. So, when I got the opportunity to buy my own present, I chose a Les Paul model from local supplier Blackbeard's Den. And I couldn't be happier.

The guitar is topped with a beautiful spalted maple veneer that has an amazing grain, so, after a few days of just admiring the timber, I set about doing my research on how to finish it, and I did a lot of research... Tung Oil or Tru-Oil are generally the go-to products for guitar luthiers who want a natural finish, so I tried all my local hardware stores with no luck (I even tried a gun shop as these oils are recommended for gun barrels). I could buy online, but only in large sizes, and I wasn't scheduled to be heading towards any of the woodworking shops in distant suburbs (with the petrol price these days, every trip has to be weighed up before starting the engine!) However, through my research I came across boiled linseed oil (or BLO as it is known in the industry), which could do the job of not only providing some protection and nourishment for the wood, but also highlighting the stunning grain – have a look at the images to see for yourself. Just a note of caution when working with BLO – it can be highly flammable, so rinse and dry out any rags you use and dispose of them in an airtight container.



After I finished the top, I stained the back of the guitar black and cleaned up the white binding around the edge – the black, white and natural top make for a great contrast, in my eyes at least, and that is what the whole project is about; creating something uniquely for me.

It's been a month and I still have a bit of work to do on it (I am applying a polyurethane spray finish to give it a nice gloss, then it's finishing the neck with Danish Oil and soldering all the components in place), but it has been great fun returning to an old passion and I cannot wait to play it. I am also hydrodipping another guitar of mine, but that's a story for another time!

Gregg



www.homehandyman.co.za

2022 SUBSCRIPTION FORM

Subscription Fees:

South Africa	Printed	Digital
Back Copy:	R38.90 each	R29.90 each
6 months:	R227.00	R181.00
12 months:	R428.00	R359.00

Subscription fees are valid until 31 December 2022

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The Home Handyman is published bi-monthly (6 issues per annum) by WJ Lindeque cc t/a BB Print (CK99/23366/23)

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Printing D & S Press

Distribution On The Dot | 011 713 9322

About The Home Handyman magazine:

The Home Handyman magazine is a specialized D.I.Y. publication and caters for a well-defined niche market since November 1993. The magazine equips its ever-growing readership with relevant D.I.Y. information, knowledge and skills.

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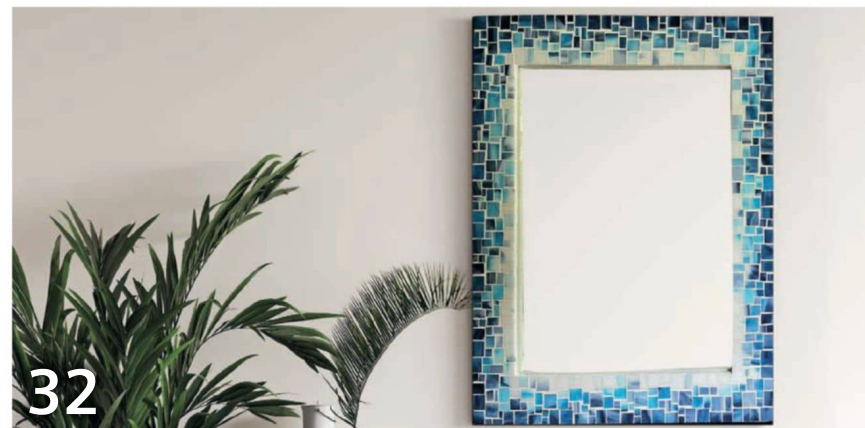
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OFF THE SHELF

Your guide to the latest products in the world of DIY

Eco-friendly wood coating

Introducing Plascon's new wood-coatings range

The latest upgrade to Plascon's wood-coatings range, Plascon Woodtect, has an on point product coding – AQU – to symbolise the word aqua, meaning water, rain or the sea in Latin. The water-based nature of the all-new Plascon Woodtect range certainly increases its appeal from both an eco- and user-friendly perspective.

Plascon Woodtect is completely odour- and formaldehyde-free so as to help protect the environment, the paint application team, and the end users of the space. But these are not the only innovative features; other notable characteristics listed on the range's attractive new labels include the fact that it builds layers, sands well, is fast-drying, and offers reputable mar resistance.

The challenges of wood coatings can range from blistering and bubbling, to cratering and even grain raising. Yet this product range offers double the spread rate of competitors and professionally seals and finishes any wood substrate, making it the obvious choice among wood coatings.

Needing to tint the wood in the most protective manner? Simply select the appropriate base that can then be tinted by employing the Plascon 'inspired tinting' system. Not yet decided on your gloss level? Just request to see in-store samples of how the ultra matt, matt, satin or gloss finishes appear after they have dried.

You'll save on overall expenses and even insurance costs, a great benefit in a time of high inflation, because there is no need to purchase an accompanying solvent or thinner for use with this product range. Just consider the risks of accidental spillage of a solvent or thinner, together with their high volatility and extreme flammability, and you'll breathe a sigh of relief at the wisdom of your choice.

For more information, visit www.plascon.com



Pure power, controlled in four gears, with intelligent kickback

The latest Festool Cordless Percussion Drill TPC 18/4 Basic Quadrive

The Festool TPC 18/4 is considered the best drill that Festool has ever built. It is a powerful, versatile compact unit, with four gears. Whether you are working on wood, metal, or masonry, the TPC is extremely durable thanks to its brushless EC-TEC motor, which has extreme resilience and endurance. The substantial number of attachments, combined with perfectly matched accessories, make the Quadrive an unrivalled percussion drill for a wide range of uses. What about your hand twisting dangerously if the tool suddenly jams? The intelligent kickback stop minimises the risk of this happening.

The main area of use is for production of wooden substructures, and frame structures, the Installation of doors and windows, drilling and screwdriving in wood, metal, and plastic, driving screws into wood up to 10 x 300mm, drilling in wood up to 70mm with Forstner drill bits and drilling with impact in brickwork or masonry.

For more information, visit www.vermontsales.co.za



Saving on repair costs using automotive DIY adhesives

A range of versatile, high-performance DIY adhesive products for the automotive sector is available from Pratley

The range is ideal for various quick, on-the-spot automotive repairs, especially where well-equipped mechanical workshops are often unavailable.

Pratley Wondafix® Auto

A tough yet flexible repair compound that sets black in colour. It can be used for problematic car repairs such as cracked car dashboards, scuffed hoses, damaged car bumper rubber, car air vent pipes and vacuum hoses, vinyl car seats and side panel trim, and cracked windshield rubber seals, mouldings, and flashings.

Pratley Steel Putty

Ideal for applications such as sealing metal water tanks and repairing cracked sumps, metal castings, metal radiators, and metal petrol tanks. It can also be used to fill blow holes and for engine castings. A major advantage of the putty is that the putty can be extensively machined after curing, meaning it can be easily cut, drilled, sanded down, and painted as required. Another significant benefit is it will not corrode, making it ideal for humid environments where corrosion is present.

Pratley 1-2-3® Quickset

A tough acrylic three-step bonding system that is excellent for use on aluminium, able to join almost all well-matched surfaces and substrates. It is ideal for bonding rear-view mirrors to car windscreens. It can also be used to bond metal parts and stiffener ribs to sheet metal instead of spot welding or riveting.

For more information, visit www.pratleyadhesives.com



VOICE YOUR VIEWS

Do you have any thoughts or comments on DIY issues?



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Please include your name, physical address and contact number (office hours)



Jim Dugan

Wins a Makita M9507B Angle Grinder



Prizes are not exchangeable

Sharing my workshop



This is not a novel workshop tip, it is just a simple outfeed table for my tablesaw. What makes it unique is that my 5-year old grandson, Jack, was my shop helper on the build. Many activities in life that we pursue as adults – cooking, fishing, golf, gardening – were often handed down to us when we were young. I learned to use tools from my dad; he learned from an older brother-in-law. My son-in-law is a good husband and dad, but truth be told, my daughter is the do-it-yourselfer in the family. If Jack is going to learn about woodworking, then I am the likely conduit.

Jack and his two younger siblings came to visit my wife and me for the month of August last year. Even as a toddler, Jack was my shadow on home projects. A bit older now, Jack has a longer attention span and more of an interest to learn.

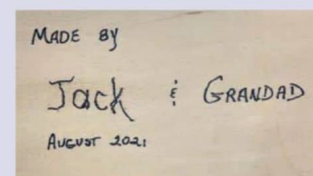
So off and on during the month we worked on the outfeed table from planning to fabrication. Safety was paramount. Machinery was unplugged or breakers turned off and Jack wore his safety goggles and ear protection when needed. He'd help spread glue, stack cut boards, hold a tape measure, and take the last few whacks with a hammer on the finishing nails. I was trying to set a good example, so we would put away tools and clean up after each work session – something I am not always religious about. Jack enjoyed brushing the workbench and handling the push broom like a bulldozer.

This was not a quick project. The processes you and I zip through in seconds took minutes to explain to a

5-year-old. And then there are the questions... and more questions. Which is just fine. Learning to use a Speed Square, he asked "Why is it called a square when it's shaped like a triangle?" Fair question, but my answer was lacking. At the end of the month, my daughter, her husband, and the children left for their six-hour drive home. The outfeed table was not finished but the most important parts were – the memory and maybe the seed of another woodworker planted.

Jim Dugan, by email

Ed replies: What a wonderful story – let's hope that in a few years Jack gets a subscription to The Home Handyman from his loving grandfather!



The future of woodworking

After reading a recent letter by one of your readers, I thought I'd share my views on the future of woodworking. So, in the age of artificial intelligence, where does traditional woodworking fit in? Traditional woodworking will soon become a niche market. The future of this craft undeniably includes competition with technological advances. However, the desire and demand for hand-crafted products will sustain those craftsmen who embrace such a unique positioning and implement savvy marketing techniques. For that reason, successful woodworkers must redefine their roles in the world market in order to stay current and generate profit.

At a glance, woodworking may seem to be the next victim of this ruthless pace towards the next-best thing, but even as old forms are dying out, those that are able to adapt and overcome their dusty trappings can survive.

Woodworking skills are not obsolete and hence will continue to have relevancy. We live in a time where AI exists alongside traditions that have sustained our way of life for centuries. Mankind sources trees from around the world to frame a house. In that same household, there could be several technological inventions that make everyday living that much easier. Smart thermostats, advanced home security systems, and electric car-charging stations: these are just a few of the characteristics that bring a home to the doorstep of innovation. But what lies directly at the very heart of this home? A wooden infrastructure.

Working with wood is a skill very much needed in the future, and not just for home-building. Woodworking traditions make up an entire industry of their own. From carvings, decorations, and instruments to furniture and packaging, crafting with wood requires special skills and knowledge. Therefore, value of woodworking increases as the number of educated individuals decreases. Much

like forging, pottery, and various other hand-skill-driven vocations, similarly woodworking finds its value in the one-off, the unique, the limited-edition, if you will.

Woodworking's value to the average person

To sum up the value of woodworking in a few words, we've come up with a (non-exclusive) list of reasons:

- First of all, woodworking is a relatively cheap pastime available to nearly everyone. Tools and various woods are available at most large retailers, and there are countless tutorials only a click away.
- Woodworking can be considered a form of expression. Hand-crafted pieces don't necessarily need to be mass-produced in order to turn a profit. Like many artists, woodworkers can create what they please and sell what they choose.
- Woodworking teaches patience, precision, attention to detail, planning, creativity, fine motor skills, dexterity, perseverance, and a number of other traits not always gained through traditional education methods.
- Woodworking is responsible for many objects we encounter in our daily lives. For example, there are wooden spoons, stringed instruments, sculptures, figurines, tools, bows, furniture, barrels, and much more. So, take a look around your house: what do you own that is made of wood?
- Working with wood supports a sustainable, green future. Wood can be burned, composted, reused, and recycled. Can you say the same about most of the objects you own?

So, there are plenty more ways that woodworking impacts our lives on a daily basis. In fact, have you ever thought of the number of jobs that require wood and woodworking skills?

Johan Ackles, by email

Ed replies: Thank you for sharing Johan.

Reader's projects



The Home HANDYMAN
www.homehandyman.co.za

Willing to share your latest project with our readers? Send a step-by-step write up of how to make the project, along with step-by-step photographs (at least 300kb) and a picture of the finished product.

Email projects and photographs to:

editorial@homehandyman.co.za



Our competitions – the fine print

Prizes may not be exchanged for cash. The closing date is stipulated by the competition box. If not stipulated, it closes on the last day of the issue. For example: Jan/Feb edition. All competitions close on the last day of February. To enter simply e-mail your answer to: editorial@homehandyman.co.za and include your name, surname, address and a day time contact telephone number with your entry. Unless otherwise stipulated, competitions are lucky draws and the correct entry drawn on the closing date will be the winner. The prize may differ from the picture shown. By entering this competition you agree to all rules and accept that the decision of the publisher is final and that no correspondence thereto will be entertained. This competition is open to all readers of *The Home Handyman* except employees of THH, BB Print and employees who work for the company that sponsors the prizes and their immediate families. Prizes not claimed within 60 days will be forfeited.

Save the date – Hobby-X returns to Kyalami in 2023

Hobby-X 2022 has come and gone but the public's passion for hobbies lives on. It's this passion that drives Hobby-X and they have taken your feedback from this year's event and have started planning for their 2023 event which is scheduled for the 4-7 May at Kyalami Grand Prix Circuit and International Convention Centre.

Hobby-X 2022 was a wonderful start after two years of being unable to host the event due to Covid-19, and for the organising team it was wonderful to experience the buzz created by visitors and exhibitors interacting face to face, enjoying practical

workshops, and experiencing the latest products and trends on show. It was also an opportunity for the organising team to engage with visitors and exhibitors, and it was clear that the love for Hobby-X ran very deep. The general consensus, however, was that the event could expand by offering a wider selection of hobbies. Hobby-X listened, and the planning for 2023 is well and truly underway where they aim to showcase a broader range of hobbies, crafts and practical workshops, whilst still being true to the core foundations of the event.

For more information, visit www.hobby-x.co.za



Stihl sets up new production site for electric and battery-operated products

The Stihl Group is to expand its international manufacturing network by investing around 125 million euros in the coming years in a new production site for electric and battery-operated products in Oradea, Romania. This will enable the family-owned company not only to increase its production capacities, but also to strengthen the flexibility and resilience of its supply chains. "Battery-powered products represent the fastest-growing market for Stihl at the present time," says Martin Schwarz, Stihl Executive Board Member for Manufacturing and Materials. "We expect demand for these products to continue rising faster than any other category in the years ahead. This means that our Tirol plant, which currently manufactures a large portion of our battery-powered range, will one day reach the limits of its space and capacities."

The new plant will be built in Oradea's Eurobusiness Industrial Park and comprises approximately 14 000m². "Stihl generates a large share of its battery-operated power tool sales in Europe,"



says Stihl Executive Board Member Martin Schwarz. "The city's outstanding links to our key markets, its highly advanced infrastructure, and the strong economic environment were all compelling reasons to choose Oradea." The mayor of Oradea, Florin Birta, is delighted to welcome the company to his city: "Stihl's new location is a strategic investment in the municipality of Oradea."

The new Stihl plant will be a state-of-the-art manufacturing facility designed according to the principles of lean production and is to feature a high degree of digitalization in production. In addition to the production halls, the site will comprise offices, a cafeteria, and break rooms for employees. Stihl's plans for the new building also take into account the company's climate targets and carbon footprint by ensuring a sustainable design and energy-efficient production.

For more information, visit www.stihl.com



5 ways to get your kids unplugged and outside



Tracy Williams, Head of Sales and Operations at Rolux and mom of twins, has some ideas on getting your kids to ditch their screens this summer and dirty their hands in the garden instead. Here are some ideas to get your kids excited about gardening this summer:

Pot up containers: Find some containers and let your kids plant them up. Get them to paint some old pots that may be lying around, or let your kids think out of the box – old toys, shoes, wheelbarrows or unused drawers can all be used as containers and give the garden a playful whimsical feeling.

Ensure the container you choose has drainage holes and then fill it two thirds of the way with potting soil. Let them plant and arrange their chosen flowers in the container. Fill in around the roots, firm down the soil and water well. Place in a sunny, sheltered spot and keep the soil moist.

Give them their own patch: Put aside an area of garden and give your children autonomous control over it. Here, they can plant the flowers of their choice and grow their favourite fruits and veggies. Seeds that are quick to sprout and ready to feast on in a matter of weeks include radish, lettuce and

watercress. Big seeds are easier for little hands to handle – try nasturtium, peas, sunflowers and squash. Water regularly and keep weeds out – they need to care for their patch to see results.

Create a bug hotel: Get your kids excited about the many beneficial creepy crawlies in the garden by creating a special place for them. Bug hotels can be a welcome spot for many creatures, with hidey holes, tunnels and cosy beds for spiders, ladybirds, moths, butterflies and caterpillars. Just find a box, pallet or empty plastic bottle and send your little adventurers out to find some nature – they can gather twigs, pinecones, dry leaves, stones, flowers, bark, bamboo, toilet paper rolls and old plastic pots. Arrange these into your chosen framework and put it in a sheltered spot and wait for the visitors to check in.

Give them chores: Kids love to copy their parents. Next time you're outside gardening, get your child involved. Pruning shrubs? If your child is old enough, give them a small pair of

pruning shears and show them how to cut off dead branches. Identify weeds and ask for help pulling them out of garden beds and lawn. Hand them the hose – they'll love being in charge of watering the garden. Provide a rake and get younger kids to work gathering leaves and garden debris. Older kids can be given lawn-mowing duty – give them a time challenge as an incentive.

Start a compost heap: Once they've raked the garden, use all the gathered leaves, grass clippings and twigs to make compost and teach the natural cycle of life. Find a spot in a corner of your garden in partial shade for a bin or a heap. Things you can put on your compost heap include fruit and veggie scraps, grass clippings, twigs, fallen leaves and eggshells. Then wait for the magic – kids will be amazed at how waste can be transformed into nutrient-rich soil.

For more information, visit www.rolux.co.za



BATHROOM DIY: What can (and should) you tackle yourself?

When it comes to bathroom DIY, it's in your best interest to proceed with caution. After all, all that running water means its the room that has the biggest potential for DIY disasters, and any issues could cause serious damage to your home.

However, there are some jobs you can cautiously tackle, whether you're a beginner DIYer or a little more competent when it comes to renovating a house.

Here's our top tips for the DIY tasks you should, can (if you're up to the job) and definitely shouldn't take on as part of your bathroom design project.

Painting a bathroom

Painting is probably the most accessible DIY job for most people, and this is no different in the bathroom. However, you need to make sure you've got the best bathroom paint for the job.

There's a lot of moisture in the air when a bathroom is in use, so a specialist bathroom paint will help prevent moisture being absorbed by the walls, which can lead to issues including mould.

There are other painting jobs you could tackle in a bathroom on a DIY basis, including painting tiles, that are easy to achieve and offer great results.

Replacing a shower mixer bar

Exposed shower bars are usually found in more budget-friendly bathroom installations. These are relatively simple to change, which is great news if the internal thermostat breaks and you find your shower flicking between boiling hot or freezing cold. Most shower bars have the same dimensions for the water inlet and outlets, and it's more than likely you'll be able to find an exact match for match for your current shower bar.

To replace, you'll need to turn the water off at the stopcock. Most shower bars are easy to remove without the need of tools. Once removed, simply attach the new shower bar by screwing back on, ensuring it's the right way round and the filters are in place. Reconnect the hose, turn back on the water and your new shower bar is good to go.

Don't forget, shower heads are super easy to replace too, if yours isn't up to standard, invest in one of the best shower heads and replace your old one as soon as possible.

Putting up shelves

Putting up shelves is DIY 101, and the process is by in large the same for a bathroom as it is for any other room in the house, being sure to use a stud finder/multi detector to ensure there's no pipework or wire before drilling into the wall.

However, if you need to put a shelf up on a tiled wall in a bathroom, that's a slightly different story. To do this, you'll need

to use a diamond tip drill bit suitable for tiles. While you might be tempted to use a hammer setting on your drill, this isn't a great idea and it's almost certainly going to cause your tile to crack or break completely.

Install a shower screen

Replacing a shower curtain with a glazed shower screen can be transformative for a bathroom, and it doesn't require much DIY know-how, just your best cordless drill. Again, you're likely to be fitting a shower screen onto a tiled surface or shower panel.

Use your diamond drill bit for tiles, but for a shower panel, usually made from PVC, a metal drill bit is your best bet. As you'll want to ensure that this area remains waterproof, once you've popped your rawl plug into the wall, it's a good idea to give it a seal with silicone before fitting the shower screen in place.

Renewing grout and sealant

Grubby grout and sealant can make a bathroom look in far worse condition than it is, but fortunately this can be rectified on a DIY basis, that's if the best grout cleaners don't leave your bathroom refreshed, that is. It is, however, quite a fiddly, time-consuming job, so be prepared to put in the elbow grease.

While there are manual tools that can be used to remove grout and sealant, using a specialist electric grout remover or a multi-tool fitted with a grout or sealant fitting will be a lot less work.

It's super important to ensure all silicone has been removed before applying new sealant, otherwise your new layer won't adhere properly and your sealant won't be watertight.

There are all kinds of clever tools you can buy to make applying new grout and sealant easier and get a better finish.

Tiling

Tiling a wall or floor in a bathroom isn't necessarily a difficult task, but it is a skilled one. That means, if you want

a high quality finish and you've never done it before, you're better off leaving it to the professionals, especially when it comes to complex areas such as corners, slanted ceilings, trims and thresholds.

Laying electric underfloor heating

Generally, any electrical work needs to be completed by a professional electrician; however, when laying electric underfloor heating for a bathroom, it's possible to do this on a DIY basis, as long as the connections and any circuit alterations are made and signed off by a registered electrician.

Many types of electric underfloor heating come as easy to install kits.

Installing some sanitaryware

Replacing sanitary such as toilets and basins isn't beyond the grasp of confident DIYers, especially as many will come with step-by-step instructions.



Bathroom DIY to leave to the professionals

Plastering

Plastering walls isn't an area that lends itself well to have-a-go heroes. If you don't plaster properly, your walls could end up worse than they were to start with — finding a good plasterer is an investment in the foundation of your bathroom, giving you a solid base to build the rest of your design on.

Electrics

No question electrics should (and must) be left to the professionals. There's not really any instances where you should be taking on any work which involves new cables or wires. Leave it entirely to your electrician.

Plumbing pipes

Realistically, any pipework should definitely be left to a plumber. The worst case scenario is that a shoddy DIY job causes leaks and mains water to come pouring through your ceiling. Weigh up whether any potential savings on DIY jobs involving any kind of plumbing is worth the risk (and expense) of something going wrong.

ASK FOR IT BY NAME

Sealing – one of the most important jobs in waterproofing your bathroom or kitchen

A well-sealed bathroom and kitchen prevents mould, leaks and water damage to your cabinets.

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Turn your garage into the perfect WORKSHOP

A garage can be a perfect workshop that can cater all your hobbies in style. It is not just concerned with stashing supplies and tools but is a place where you can perform work that you love the most and stay relaxed all the time.

The following are some ideas for people who are planning to transform their garage into a creative workshop.

Light up your garage:

Most of the old garage designs we see today do not have electricity at all. There are also modern garages that have a single unit or limited power supply. If you really want to create a perfect workshop, make sure you have a dedicated power supply for your garage. Keep a generator or other similar power sources for keeping the place bright and powered up all the time.

The work surface:

In order to perform work effectively, make sure that you have a sturdy work surface that should be durable and accessible to all your needs. A well-designed work surface can manage all of your typical projects at home in style. The work surface is not just concerned with performing the work but also comes in real handy in keeping supplies and tools for work, so choose wisely.

Storage capacity:

This is probably the most important feature for designing a

well-planned workshop in your garage. To work effectively, you need good storage facility. Cabinets, storage bins, wall mounted hooks, shelves and other gadgets can help you keep all your supplies organised. This will not only help in creating additional space but will also allow you to work with more freedom and efficiency throughout the time.

Rolling work shelves:

This is an impressive feature that compliments your work surface. Some of our projects at home require additional space due to which rolling work shelves, connected to your work surface, can play an important role throughout your work activities. Rolling shelves are a great option where you can easily slide them up during work and slide them back in after a specific task has been completed.

Manage your flooring:

Bouncy and uncomfortable flooring can create problems for you especially when you plan to perform sensitive work. Smooth flooring designs can be a great relief. It is a perfect way to design your workshop where you can perform your work in a most comfortable way. Make sure you smooth out

those bumps and cracks so you don't stumble during work.

Adding accessories:

Adding creative accessories for your workbench can really enhance the mood and can be highly relaxing. Create spacious windows, use creative lights, hang some photos on the wall or add music. Whatever you do, make the place alive so you enjoy every moment working in your workshop.

Cleaning supplies:

Once you have designed a perfect workshop for your needs, make sure you keep a good stack of cleaning supplies to make your place neat and clean after you're done with your projects. This will ensure a safe and hygienic place for work for an extended period of time.

How to organise your garage the proper way

The garage is the universal space for dumping just about anything, whether we intend it to be or not.

With gardening supplies, chemicals and cleaning products, power tools, pool toys, and last year's Christmas decorations, it's no wonder that they can get disorganised quickly and leave you feeling a little on edge every time you step inside.

Although the garage is home to all of our random bits and pieces, that doesn't mean it has to be chaotic. These large spaces have the potential to be so much more and if you know the right way to lay everything out, you might surprise yourself with how much room you actually have. How do you organise your garage, then?

Although there's not a one size fits all approach to fixing your garage, the first step to organisation is to clean it out so you know you're working with and what needs to stay or go. Secondly, allocate space for everything and use a smart way to categorise everything, so that when it's needed in the future it's within easy reach.

If your garage is looking less than organised, we've got some tips that can help you out. You'll learn how to organise your garage, clean it the easy way, and make the most of the space you have so that it exceeds your wildest dreams, creating a space that you love being in rather than wanting to run away from.

The power of pegs: Pegboards are one of the simplest ways to organise your garage and make use of the space on the walls. You could utilise

one large board or smaller boards for different categories of items, and they make sure everything is easy to reach but stored away neatly.

Categorise your goods: To make everything easier to find, you'll want to keep everything sorted into categories. These categories will be different depending on what you keep in yours, but most people would find it helpful to have a gardening centre, a hanging rack for yard equipment like rakes and shovels, a fishing gear spot, power tool cabinet, and storage area for kids' toys.

Colour coordination: Come up with a colour-coordinated system that allows you to categorise the items in your garage. Smaller bits and pieces can get easily lost, but if they're branded with a coloured sticker or tag, you'll know to place them in the corresponding place so that random items aren't left lying around.

Keep things on display: Not everything in your garage has to be locked away or stored in a cabinet, as some items can benefit from being on display permanently. Gardening equipment like rakes, pruning shears, and outdoor brooms may do better hanging on a board so that it's within easy reach and always there to remind you to get the job done.

Make a monthly effort: Rather than having to do a colossal clean up every year, why not set aside just half an hour each month to get organised. During this time, you can put things back where they belong, tidy up the shelving, and throw anything out that's no longer needed. It'll ensure your garage is always in good shape and prevent things from getting out of control again.



You can't go wrong with an attractive and sturdy outdoor chair – especially one that is collapsible for storage. Now you can freshen up your patio, deck, or even poolside with a new set of chairs, one you can create on your own.

COLLAPSIBLE OUTDOOR CHAIR



Tools and materials

- Mitre saw
- Sander
- Drill
- Bandsaw
- Speed Square
- Beadlock Jig
- Hand Plane
- Clamps
- Wood – 89 x 89mm
- Beadlock tenon 3/8 and 1/2 in tenon stock
- Set of furniture feet (optional)
- Danish oil
- Wood glue
- 80 grit, 120 grit and 220 grit sandpaper

>> DIY Creators

The idea behind this chair serves two purposes mobility and storability. Most of the things I make tend to be pretty heavy. What makes them difficult to transport is that they are usually bulky. Having the back

detach from the seat makes it possible to split the weight and carry. I don't always have a second set of hands to help out. There are times that I would need to pack up the furniture and store it from the harsh elements, and this chair design allows you to collapse in store.

The wood I used for this chair was pine. I cut most of the parts down on the mitre saw; the majority of the pieces are cut straight, but there are also parts cut at an angle.

I split the wood in two; while I use a bandsaw, a table saw could work with some extra effort. What you need to do here is set the table saw to the highest point, then run the wood through the table saw blade. Flip it over, push the wood through, then clean up the saw marks with a sander or hand plane.

The front section of the chair will be cut at an angle to match the sides.

I tilted the table on the bandsaw until the blade lined up with the line I created on the end grain. A bandsaw may be the best way to cut this, but you

can use a hand saw or a reciprocating saw to make this cut.

This timer is rough, so now was the best time to sand; while the parts were loose. I passed over it with an 80 grit sandpaper first, then I made a second pass with 120 grit sandpaper. For now, I got all the parts cleaned up as much as I could.

I used a Beadlock jig by Rockler to make up the joints, but keep in mind, you can use any joining method you find more feasible. The Beadlock system is a great way to improve joint strength when using butt joints. With all the parts sanded, I aligned the parts for the chairback. Then place the two sides down on a flat surface and set the slats in between. Space the parts evenly and place a centre mark across the two sides and the middle parts. Do this for all parts.

Clamp the jig on and line it up with the mark made. You will need to align the jig to the reference mark and drill the first set of holes in position 'A' on the jig. Next, set the jig to position 'B' to remove the jig, clean out the mortise, and drill the rest of the holes.

With so much to drill, I figured it was easier to get these all set up so I could move from one to the next. Once all the reference lines have been placed, this should go by quickly. As you are drilling, dry fit to make sure the parts are aligned properly.

Before you mark and drill the slats in the seat, set your spacing for Part (C) in the diagram. Do this to make sure the back will sit properly. The back should not be tight to the point where you are forcing it, and it should not be loose where it's flopping all over the place. Fine-tune this before drilling and gluing.

Let's go a step further here; we will need to dry-fit all the parts to make sure they fit nicely. Now take a pencil and label the parts as they are assembled. You can label the parts with letters starting with A, B, C, and so on. This will make for a great reminder when you are going through the gluing process, and you need to know which part fits together. After that, repeat the same thing for the seating area.

You will now need to plan the glue-up; you need wood glue, clamps or straps, a bucket of water, and a rag. Focus on one section at a time. Be sure you have that fitted and glued together properly before moving on. I find it easiest to install the Beadlock tenants in the sides first. So, apply wood glue in the mortise, then hammer the tenon. Now glue the parts.



TIP Set the tenons in the mortise and mark it; this way, you know how deep the tenon should be. Do this during the dry fit. When you drive the tenon in, you know that you have enough of the tenon down into the mortise while gluing.

I focused on assembling the back first; then I assembled the

seat section. Set the parts off to the side and allow the glue to set up. Finally, attach the legs using the same method, applying wood glue in the mortise, install the tenon and clamp the parts. The back section to the legs is glued only. You can add additional strength by driving in screws through the bottom.

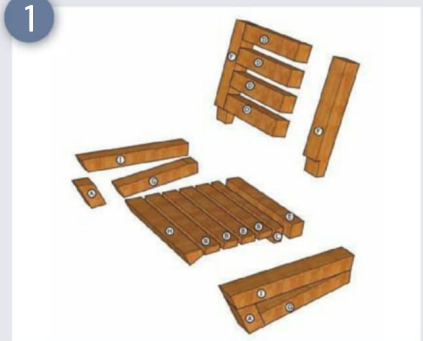
Now that everything is all glued up. I'll pass over it one more time using a sander. If any parts shifted or are offset during glue-up, now is the time to clean it up. You can do so using a hand plane, a chisel, or an orbital sander.

Next I applied one coat of Danish oil. You can use any finish you want, whether it's stain, dye, paint, or just a clear coat. I would suggest picking what fits your taste. Finally, to top it off, varnish was applied to seal and protect.

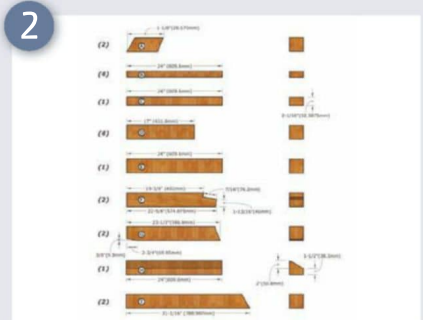
This indoor-outdoor chair could be the perfect solution for quick setup and store away furniture. The best part about this is the storage footprint it requires. You can remove the back and store it within the base of the chair. So, if you have the patience to build these, you can store them horizontally or stack them vertically. It is a great modern looking outdoor chair that is solid and will last for years to come.

I used pine to build the chair, all of which you can find at your local hardware store. As I mentioned, I like the look of the bulkiness of the chair; this adds weight, however, with the ability to break it down, it's easy to transport.

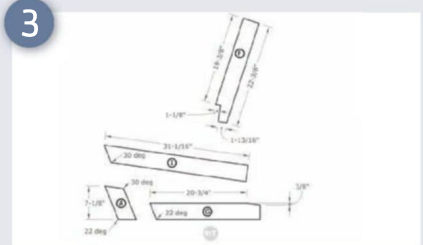
Enjoy this easy store design for your indoor-outdoor space! It's perfect for your patio or even as a gift.



Parts list



Cutting list



The design



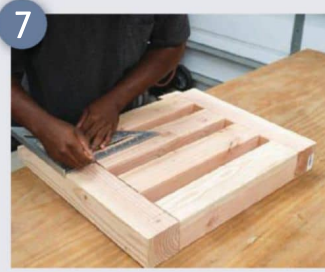
I split the wood in two



5 The front section of the chair will be cut at an angle to match the sides



6 I passed over it with an 80 grit sandpaper first, 120 grit



7 With all the parts sanded, I align the parts for the chairback



8 Clamp the jig on and line it up



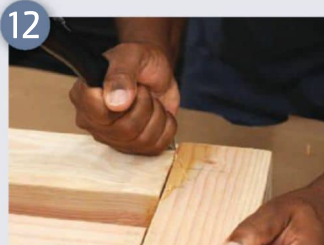
9 Fit together



10 Dry-fit all the parts to make sure they fit nicely



11 When gluing, focus on one section at a time



12 If any parts shifted or offset during glue-up, now is the time to clean it up



13 I applied one coat of Danish oil



14 And then varnish to seal and protect



15 How the chair comes apart



16 This collapsible chair is easy to store

For a high res version of the drawings and the cutting list of this project, email editorial@homehandyman.co.za

The Warmth of wooden floors

The Woodoc Way



Woodoc Water-Borne FLOOR Clear Matt was used to finish this stunning floor.

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Make a two-tier wooden plant stand.

Easy to make PLANT STAND



Tools and materials

- Wooden decking planks:
2.4m (L) x 120mm (W) x 24mm (H) – Quantity: 6
- Timber block:
1.8m (L) x 50mm (W) x 47mm (T) – Quantity: 5
- Stainless steel screws:
4mm x 40mm – Quantity: 78 (Brass as an alternative)
- Combination square
- Pencil
- Tape measure
- Drill (manual or powered)
- 3mm drill bit
- Saw (manual or powered)
- Screwdrivers
- Hammer
- Clamps

Know your tools and follow the recommended operational procedures and be sure to wear the appropriate PPE.

With a number of plant pots on the floor I felt it was time for a little decluttering, and what better way to get them off the floor by building a multi-tier wooden stand.

The stand is made using only wood (planks and blocks), and screws; no brackets or other supports are required. The initial design was created in BlocksCAD before committing to a physical build.

Step-by-step guide

Step 1: Using a standard 2.4m long plank, measure 1.2m with a tape measure, and at this mark draw a line along the width with a combination square. Cut along this line with the saw to create two equal lengths.

This process needs to be repeated creating a total of five equal length planks; one of these planks will be set horizontally at the rear. Therefore, it will require two cut-outs to accommodate the rear legs.

At the rear back corner of the plank mark a 50cm x 50cm square. Cut the square out with the saw. Repeat the process at the opposite end of the plank in the rear corner. Using the remaining 1.2m from the previous process, measure with a tape 45cm and at this mark with a combination square draw a line along the width. Cut along this line with the saw. Measure and cut a second 45cm length.

Step 2: Block timber is used in creating the retainers. Using a standard 1.8m length, measure 1.1m with a tape measure and at this mark with a combination square draw a line along the width. Cut along this line with the saw. This process needs to be repeated with another 1.8m length creating a total of two equal lengths.

Using one of the 70cm remnant cut two 30cm lengths. Using a standard 2.4m long plank, measure 1.2m with a tape measure and at this mark with a combination square draw a line along the width. Cut along this line with the saw to create two equal lengths. This process needs to be repeated creating a total of four equal length planks.

Step 3: Using a standard 2.4m long plank, measure 33cm with a tape measure, and at this mark draw a line along the width with a combination square. Cut along this line with the saw. Measure and cut a second 33cm length.

Block timber is used in creating the retainers. Using a standard 1.8m length measure 1.1m with a tape measure and at this mark with a combination square draw a line along the width. Cut along this line with the saw. This process needs to be repeated with another 1.8m length creating a total of two equal lengths of 1.1m.

Step 4: Using one of the 70cm lengths cut two 18cm lengths. Block timber is used to create the vertical supports. Using one of the 70cm remnants measure and cut a 49cm length. Take another 70cm remnant measure and cut another 49cm length. These will form the middle legs.

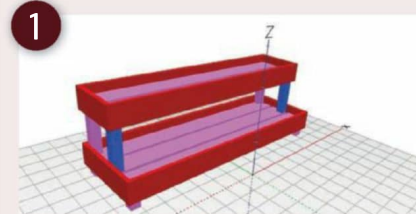
The front legs will be the remnants of the middle legs at 21cm. Using a standard 1.8m length measure 70cm with a tape measure and at this mark draw a line along the width with a combination square. Cut along this line with the saw. This process needs to be repeated creating a total of two equal lengths. These will form the rear legs.

Step 5: If the wood has not been pre-treated to protect it from the elements, rot or pests; now would be a good time to do this before assembly. The ends are particularly prone to degradation. I recommend soaking the ends in a bucket filled with a suitable preservative, then leave overnight. Flip over and again soak overnight.

It's also a good time to paint the sides with any runoff confined to the bucket. Once all ends are treated leave to dry for the recommended period prior to applying other coatings and/or assembly.

Step 6: Lower shelf assembly; take a 120cm plank and a 110cm block. Align the long edge of the block with the long edge of a plank. Centre the block on the plank to leave 50cm on either side, mark the edge line of the block on both ends. Just in case it moves, you have some reference marks.

Using clamps hold the block and the plank together. Orientate the combination with the plank uppermost and the block facing you.



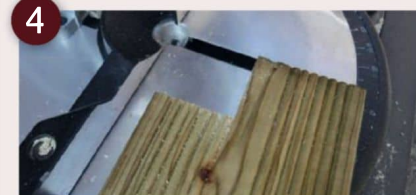
The initial design was created in BlocksCAD



Using a standard 2.4m long plank measure 1.2m with a tape measure



Draw a line along the width



Cut along this line with the saw to create two equal lengths



Using the remaining 1.2m for the lower side shelves

Using the block as a reference mark the middle, half and three quarter intervals and 5cm at both ends.

Step 7: With the combination square, measure 5cm in on the plank long edge and mark a line of a couple of centimetres. Extend the reference intervals on the block up and over on to the plank to cross the lines previously made.

Using a 3mm drill bit create pilot holes for the screws to a depth of 40mm. Fit the screws in the holes. Repeat the process using the 120cm plank with the cut out and a 110cm blank. Alignment should be easier as the block will fit between the edges of the cut out. Clamp and measure and insert pilot holes as per the previous one.

Step 8: Take the two 30cm blocks and position at either end of the two long combined plank/block such that they are flush with the short edges. Ensure the corners are at right angles. In each corner there should be a 50cm x 50cm gap to accommodate the block legs.

Measure and drill a 3mm pilot hole in each plank to align with the block beneath to hold the elements together. In the gap between the planks, lay another 120cm plank and align at the block edges. Leave equidistant gaps between the planks. Measure in at the plank ends 5cm and draw a line along the width. Measure 5cm in from the long edge to cross the line previously drawn, repeat on the opposite long edge.

At the two marks drill 3mm pilot holes 40mm deep, repeat at the other end of the plank. Fit screws in these four holes.

Step 9: Now is the time to fit the sides. Clamp a 120cm plank to the long edge to form an upright lip. Using the previous reference marks of middle, half and three quarter intervals and 5cm at both ends on the long block.

With the combination square measure 5cm in on the plank long edge and mark a line of a couple of centimetres. Extend the reference intervals on the block up and over on

to the plank to cross the lines previously made.

Using a 3mm drill bit create pilot holes for the screws to a depth of 40mm. Fit the screws in the holes. Repeat this process for the other long edge. Clamp a 45cm short plank to the short edge to form an upright lip.

With the combination square measure 5cm in on the plank short edge and mark a line of a couple of centimetres. Create two equidistant marks along this line. Using a 3mm drill bit create pilot holes for the screws to a depth of 40mm. Fit the screws in the holes. Repeat this process for the other short edge.

Step 10: Flip the shelf over to reveal the underside. Two corners will be capped into which the front legs will fit. Each leg is secured by two screws, one at the front and one at the side. The rear legs will fit through the holes and be fixed by two screws, one at the side and one at the back.

Before fitting the screws clamp the legs in place. Ensure the shelf is level by using a spirit level. The process of assembly for the upper shelf is that same as that for the lower shelf. The only exceptions being that no cut out is required in a plank and the depth is two rather than three planks.

Step 11: Once the upper shelf is complete, flip it over to reveal the underside. Fit the middle legs in the front capped corners, fixed by two screws, one at the side and one at the back. Flip the shelf over and position the rear corners over the top of the rear legs. The upper shelf should now sit on its four corners.

Step 12: Check the upper shelf with a spirit level and make any necessary adjustments to ensure its level. Once level fit the screws to hold it in place. Assembly is now complete.

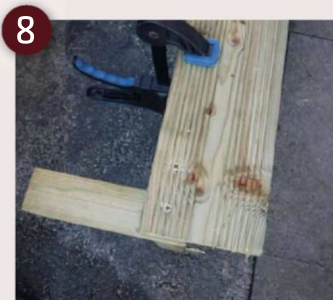
If you have not already applied any protective topcoats now would be a good time to do so. Now place in a suitable location and populate the shelves with plants.



Measure and cut two 45cm lengths



For the lower shelf retainers, measure 1.1m with a tape measure and mark



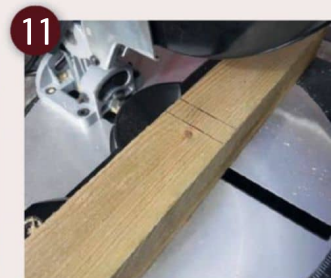
For the upper shelf planks, measure 1.2m



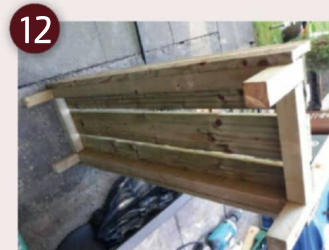
Cut along this line to create two equal lengths



The upper shelf retainers are cut into two 18cm lengths



Block timber is used to create the vertical supports



Assembling the lower shelf



How the legs fit



Tighten the screws



Repeat the process using the 120cm plank with the cut out and a 110cm blank



Clamp and measure and insert pilot holes



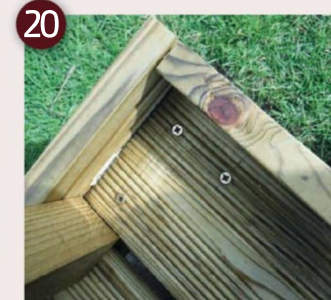
The process of assembly for the upper shelf is that same as that for the lower shelf



The exception is that no cut out is required in a plank and the depth is two rather than three planks



If you have not already applied any protective top coats now would be a good time to do so



A view from the top



This is a simple bar stool I made out of angle iron with a walnut seat.

MAKE A SIMPLE WELDED BAR STOOL

>> Sam Holmes

The angle iron for this project was recycled from some old bed frames, and the wood was from a piece of walnut that I had. The finished stool stands 635mm tall.

The secret with this project is the form I made to help in precisely marking and cutting the angle iron pieces and holding them in position to weld it all together. It was a good beginner welding project for me, and hopefully there are some tips here that will help you if you're making something similar.

Step-by-step guide

Step 1: Begin making a form

I started by creating a form to build the stool on. This was made with scrap MDF. I cut four pieces, sized 185mm by 570mm. These were joined together with butted joints and fastened with screws to form a 200mm square tube, that is 570mm tall.

Step 2: Angled base for form

The base of the form was made using pieces of framing wood that were 90mm wide. These pieces needed a bevel cut so they would angle upward to the top of the form tube.

Using a measuring tape and a bevel gauge, I found the required angle and set my table saw blade to match. The pieces of wood were run through the table saw to create the bevelled edge as needed.

Step 3: Finish base

The ends of the bevelled pieces of wood for the base of the form were cut at 45 degrees, and were fit around the perimeter of the form. (The corners were left with small gaps to allow the angle iron to rest against them regardless of any internal radius that might exist on the metal pieces).

The bevelled base pieces were fixed together with scrap pieces of plywood that were glued and nailed in place. This base perimeter section was not fixed to the upright tube portion – it fits snugly but can be slid off and removed if needed.

Step 4: Mark and cut legs

The beauty of using this form is that it helps you precisely mark the legs where they need

to be cut. There's no real measuring – just hold a piece of metal in place and make the marks.

The lower end of each leg was marked and cut first. To mark these, the corner of the form was hung over the edge of

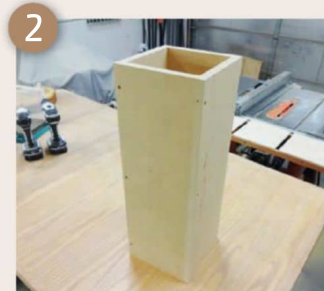
the table and the metal held in place as shown. Using a paint pen, the insides of the metal angle are marked using the form as a guide.

The bottom ends were then cut using my portable bandsaw which I have

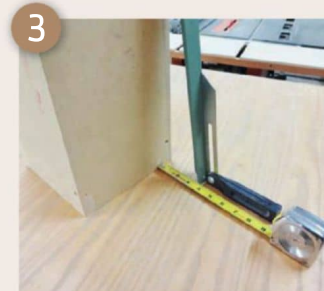
mounted in a homemade stand. With the leg bottoms cut, the pieces are placed back on the form and the top ends marked in the same fashion, and then cut as well. See photos for details if this description is unclear.



I started by creating a form to build the stool on made with scrap MDF



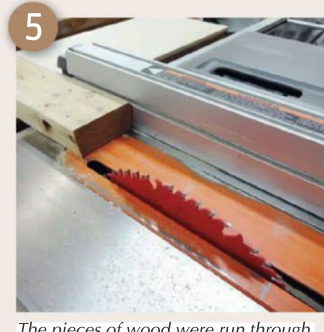
I cut four pieces, sized 185mm by 570mm to form a square tube



Using a measuring tape and a bevel gauge, I found the required angle



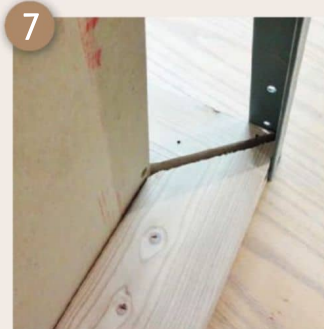
I then set my table saw blade to match



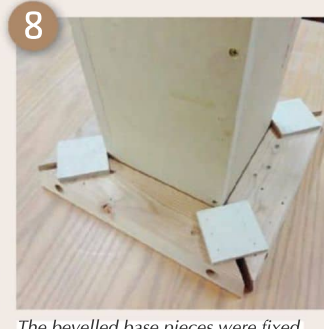
The pieces of wood were run through the table saw to create the bevelled edge



The ends of the bevelled pieces of wood for the base of the form were cut at 45 degrees



The corners were left with small gaps to allow the angle iron to rest against them



The bevelled base pieces were fixed together with scrap pieces of plywood that were glued and nailed in place



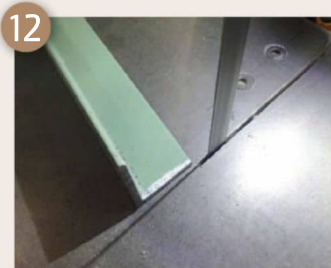
The beauty of using this form is that it helps you precisely mark the legs



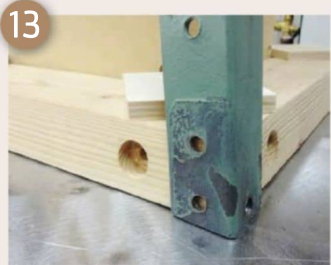
The lower end of each leg was marked and cut first



To mark these, the corner of the form was hung over the edge of the table and the metal held in place as shown



The bottom ends were then cut using a portable bandsaw



With the leg bottoms cut, the pieces are placed back on the form



And the top ends marked in the same fashion, and then cut as well



One done, three more to go



The top of the stool was made with four pieces of angle iron



These were marked using a framing square and paint pen, and cut using a portable bandsaw



These pieces were tack-welded together, and then removed from the form to receive a full bead weld on each joint



Pieces of iron were now cut to create a footrest/lower frame support for the stool



Magnets were used to hold the pieces in a perfect square



These were tack-welded first, and then got a full bead welded at each joint



The footrest/lower support piece was held in place with support blocks on the form with the legs and stool top piece



Tabs made of scrap metal were welded to the bottoms of each foot as well



At this point, all accessible welds were cleaned up with a 40-grit flap disk on an angle grinder



I used a log of walnut for the seat



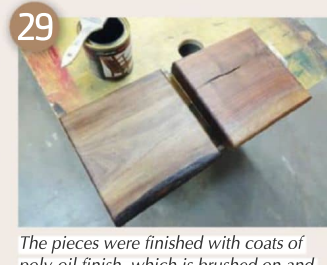
I cut it into two 58mm thick boards



These boards were cleaned up further by running them through a planer



The final seats are 50mm thick and 255mm square



The pieces were finished with coats of poly-oil finish, which is brushed on and rubbed off with a rag, and repeated after 24 hours



The stool frame was spray painted first with a coat of primer



Felt stick-on leg tips were added to the tabs on the bottoms of the legs



Discover all you need to know about the different types of angle grinders and learn how to use an angle grinder safely.

ANGLE GRINDERS - a complete buying guide

Also known as side or disc grinders, angle grinders are portable power tools specifically designed for grinding and polishing. They are used across a variety of workplaces and industries including metalworking, construction, and emergency rescue.

Power to operate the angle grinder may be generated via an electric motor, petrol engine, or compressed air. The handheld angle grinder is the most commonly used and recognised model for practical applications.

The size of the disc should have a direct bearing on your choice of angle grinder. The two most common disc sizes are 115mm

and 230mm. Grinders with larger discs are particularly well suited to heavy-duty applications, whereas those with smaller discs are ideal for finer work. Additionally, it's worth bearing in mind that smaller grinders have a relatively high rpm and smaller discs are also more prone to wearing down quite rapidly.

The following factors should be considered when buying an angle grinder:

- Motor power
- Power source
- rpm
- Arbor size

Different types of angle grinders

There are three main types of angle grinders, each suitable for specific purposes. It is important to understand the differences between each type in order to make a well-informed buying decision.

Cordless angle grinders

Highly practical cordless angle grinders are used across a variety of worksites and projects. These grinders can be transported to different areas without the need for connection to power outlets. Cordless grinders are particularly helpful when it comes to the performance of ladder and scaffold-based grinding tasks as users have no need to worry about the trip hazard posed by trailing wires. However, it is advised to choose models with high capacity batteries to avoid the concern of regular mains power connection.

Corded angle grinders

The assurance of connection to a reliable power outlet will be required in some instances as it is possible to use corded angle grinders as long as they are connected to the power supply. Corded angle grinders are also typically of a lighter weight than cordless alternatives. If you are going to be using your grinder on a regular basis for minor cutting jobs, then you should opt for a model featuring a small disc. You should also account for the ergonomics and level of vibration specific to your chosen grinder.

Pneumatic angle grinders

Offering the ideal blend of performance and durability, pneumatic angle grinders are ideally suited to cutting and shaping metal workpieces. They are primarily used for light-

duty jobs, requiring high levels of precision. Pneumatic grinders require connection to suitable air compressor units, however, they are well-suited to high-precision tasks and are considerably lighter in weight than other angle grinder models. Additionally, some come complete with throttle levers, which allow for a high level of control in the performance of technical tasks such as feather edging and speed grinding.

Variable speed angle grinders

The discs of variable speed angle grinders can be set at different speeds to suit a wide variety of applications. The option of setting the disc at a particularly high rpm allows for the effective completion of high-precision work. Some models also come complete with paddle switches for enhanced control.

Straight angle grinders

The wheel of the straight angle grinder is positioned at a 90-degree angle, making this the ideal tool for grinding outer edges and inner parts of pieces, with different grinding stones attached. The unique disc angle can make straight grinders a better choice than the standard angle grinder in some instances.

What can angle grinders be used for?

Angle grinders are most commonly purchased for the grinding of weld lumps, sharp corners, and other surfaces. However, you can also rely upon these power tools for effective sanding, allowing for the removal of old paint, spots and material defects. Alternative uses for angle grinders include the cutting of materials such as masonry tile, concrete, and metal.

Specific angle grinder uses include:

- Material finishing
- Removal of rust
- Application of matte finishing
- Blade sharpening
- Emergency rescue



Highly practical cordless angle grinders are used across a variety of worksites and projects

How to use an angle grinder safely

Angle grinders typically incorporate a range of safety features for the effective prevention of injury. The slow start is one such feature, stopping the grinder from twisting immediately after being started. The anti-kickback is another valuable feature which ensures that the motor cuts out if the angle grinder gets caught up dangerously on any material. Restart protection will ensure that the angle grinder stays switched off in the event that it has overheated or cut out and been left with the power on. An additional safety feature is the paddle, or deadman's switch, which ensures that the grinder only operates when held in two hands and prevents any spinning should the switch be released.

There are a variety of safety procedures which should be followed when using an angle grinder. To begin with, you should equip yourself with a complete set of personal protective equipment, including a dust mask, ear defenders, and safety goggles. The protective clothing should act as a safeguard against contact with any sparks that fly up when using the angle grinder. There should also be minimal risk of your clothes catching fire during operation.

It is expected that you will alert any helpers and anybody else present before you begin using an angle grinder. You should also take care to organise the wiring in order to prevent serious electrical incidents. The disc should be completely static before the angle grinder is positioned upon a surface to ensure that it doesn't spin and cause significant damage.

These safety procedures should also be followed:

- Make sure that the grinder is switched off before plugging it into a power supply
- Read and operate the grinder in accordance with instructions provided in the user manual
- Select and use the appropriate type of spinning disc for the task
- Keep the safety guard on the grinder at all times
- Use both hands for safe operation of the grinder
- Inspect the grinder before use and replace parts as necessary
- Maintain complete focus and take regular breaks
- Always use safety goggles, especially when you use a wire brush disc



How to choose the right angle grinder

Most tasks requiring the use of angle grinders will be conducted over extended periods of time. It might be necessary to make repeated passes over the workpiece with a small handheld tool before application of the grinder. Durability will be one of the key factors and you must ensure that the appropriate amount of power is generated for the specific task at hand.

Small angle grinders

A small angle grinder typically has the capacity for a disc of seven inches (177.8mm) or less. They can be used for a range of cutting and grinding purposes and are featured across a variety of angle grinders. The most commonly used sizes are the 4" (101.6mm) and 4 1/2" (114.3mm). These grinders typically have the capacity for wheel diameters of up to 7" (177.8mm), with particularly small versions having the capacity for 3" (76.2mm) discs.

What to look for in a small angle grinder:

Ideally, the small angle grinder will be fitted with a brushless motor, meaning that the brushes don't have to be regularly replaced. The brushless motor will also allow for the efficient operation of the cordless model, minimising the build-up of heat and ensuring that the tool lasts for an extended period of time.

The kickback brake is an essential safety feature, ensuring that the wheel is stopped automatically in the event of binding. This will prevent the tool from coming free and causing serious damage. Some angle grinders are also fitted with two-stage triggers, meaning that the safety switch must be flicked to off before the trigger can set the tool into action. This minimises the risk of accidental starts associated with the changing of discs.



Medium and large angle grinders

Angle grinders featuring 7" (177.8mm) discs fall within the medium-size category, while those with discs between 7" (177.8mm) and 9" (228.6mm) are categorised as large. Large angle grinders are purpose-made for taking substantial cuts and scanning considerable surfaces in one pass. They also have particularly high levels of horsepower.

It is quite common for angle grinders in the medium-large size range to be corded. A good quality medium size angle grinder should include motors with a capacity of at least three horsepower (3 HP) while a large grinder would be expected to feature motors with a capacity in excess of 5 HP.

What to look for in a larger angle grinder: It is quite common for large angle grinders to feature overload protection, designed to prevent the grinder from breaking down under substantial weight. The auto shut off is another common feature which alerts you to the need for brush replacement to protect the motor. Some grinders also feature adjustable side handles which allow for a greater degree of flexibility and manoeuvrability. Additionally, there may be the option to fit a vacuum attachment for the effective collection of any dust and debris which is generated during operation of the angle grinder.

Comparing angle grinders

There is a selection of key factors to consider when comparing angle grinders. Read the following descriptions before proceeding to weigh up your buying choices.

Disc size

The angle grinder disc may also be referred to as a head or wheel. There is a wide range of disc sizes available, but some of the most common sizes include 115mm and 230mm. The most appropriate choice of disc size will depend on the task that you want to carry out, however, you must ensure that the disc is compatible with your grinder.

Power of the grinder

Angle grinder wattage (W) is specific to the amount of power which is generated. The required wattage level will depend on the size of the discs. The input power of a corded model will be rated in terms of amps (A), with the corresponding input for cordless models being rated in terms of volts (V). The input

of pneumatic angle grinders is presented in terms of CFM (cubic feet per minute) and there is typically a corresponding pressure in pounds per square inch (PSI).

Speed of the wheels and discs

You should be aware that angle grinders with the capacity for small discs generate a higher rpm than larger models. It is common for the rotations per minute (rpm) to be expressed in terms of 'no-load speed', which is equivalent to the fastest rotation without a disc being installed. A medium-sized angle grinder is expected to go faster than 8 000 rpm, while a larger angle grinder may generate around 6 000 rpm. However, the larger angle grinder will have far more power.



Cordless Innovation Choose a 115mm Angle Grinder

DGA463ZJ 18V Cordless Angle Grinder



BL ADT AFT
XPT

DGA452ZK 18V Cordless Angle Grinder



DGA456ZJ 18V Cordless Angle Grinder



BL ADT AFT XPT

SPECIFICATIONS:

Wheel Diameter: 115mm (4-1/2")
No Load Speed: 11,000 r/min
Vibration Level: Surface Grinding: 10.0 m/s²
Disc Sanding: 2.5 m/s² or less

Sound Pressure Level: 76 dB(A)

SPECIFICATIONS:

Wheel Diameter: 115mm (4-1/2")
No Load Speed: 8,500 r/min
Vibration Level: Surface Grinding w/ Anti-Vibration Side Grip: 6.0 m/s²
Disc Sanding w/ Anti-Vibration Side Grip: 2.5 m/s² or less

Sound Pressure Level: 79 dB(A)

DGA458ZJ 18V Cordless Angle Grinder



BL ADT AFT XPT

SPECIFICATIONS:

Wheel Diameter: 115mm (4-1/2")
No Load Speed: 8,500 r/min
Vibration Level: Surface Grinding w/ Anti-Vibration Side Grip: 5.0 m/s²
Disc Sanding w/ Anti-Vibration Side Grip: 2.5 m/s² or less

Sound Pressure Level: 80 dB(A)



For more info. and your nearest Makita dealer contact Rutherford:
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Batteries, Chargers and discs are sold separately

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Angle grinder FAQs

How do you fit a new angle grinder disc?

It is essential that you disconnect the angle grinder from the electric power supply prior to fitting the disc. You should then press the spindle lock button and nudge the disc until it fits securely in place. The spindle lock button should be held while you remove the clamping flange, which is then attached so the flat surface comes into direct contact with the disc. A wrench may be used to tighten and firmly secure the flange.

What is the difference between an angle grinder and a disc cutter?

The versatile, durable angle grinder is suitable for applications such as cutting, grinding, polishing and sharpening. Conversely, the disc cutter is a small, single-handed cutting blade which is best suited to light cutting applications. The angle grinder is typically heavier and requires some strength to control, while the disc cutter is lighter weight and offers greater manoeuvrability.

What will break an angle grinder?

No matter the angle grinder that you are using, there will always be a risk of breaking the abrasive wheel. However, it is possible to minimise this risk by checking the discs, ensuring the correct mounting, and following the safety procedures. It will also be necessary to mount the abrasive wheels correctly on the corresponding tool.

Angle grinder damage may also occur as a result of kickback. This can happen when the grinder jams with the material being cut or shaped and is more likely to occur if you are using the incorrect wheel or cutting at an inappropriate speed.

Can you cut through metal with an angle grinder?

A high-powered angle grinder can be used to cut through any type of metal. However, there will be a risk of flying sparks and debris when cutting different types of metals. It will be necessary to wear goggles and other types of personal protective equipment during such activities.

What materials cannot be cut by an angle grinder?

A high-powered angle grinder will be able to cut through the vast majority of materials. However, diamond and multi-layered materials have a high level of cutting resistance. You should always use an angle grinder in accordance with the manufacturer's instructions. Do not cut PVC/plastic with an angle grinder as the melting plastic can damage the disc.

Different wheels and disc types

Silicon carbide grinding discs

These discs are purpose made for the shaping of metals. They also allow for the efficient removal of materials and prevention of surface damage. Use of the grinding discs is expected to minimise the need for subsequent processing, allowing preparation time to be saved.

Cutoff grinding discs

These discs are purpose made to cut hard items and materials such as rods, bolts, rebars, and metal piping.

Sanding pads and discs

Sanding pads allow for the efficient removal of old paint in the process of surface preparation. They are also suitable for coarse and fine sanding.

Grinding wheels and discs

The grinding wheel is an expandable wheel, made from an abrasive compound. It allows for a variety of grinding and abrasion functions. Grinding wheels and other forms of bonded abrasives have two key features – the abrasive grains which allow for efficient cutting, and the bond which combines and supports the grains during the cutting process.

Grinding discs are suitable for metal and stone applications across a range of machine sizes. The main use of such discs is in the removal of materials. However, they can also be used for the finishing and preparation of stone and metal surfaces.

Wire brush wheels

These wheels allow for the effective removal of paint and rust. They also enable the removal of burrs from rough-cut metal surfaces.

Diamond cutting wheels and discs

These wheels and discs are particularly suitable for the cutting of concrete, tile, masonry, and granite. However, it is important to make the appropriate selection and use of the cutting blade in accordance with the technique. There are diamond blades suitable for dry and wet cutting.

Aluminium oxide grinding wheels

These oxide-based wheels are suitable for a wide range of applications, including woodworking and the cutting of crumbly materials like cutting boards.

Flap discs and wheels

The flap disc performs a similar function to the wire brush yet features flaps rather than wires. This allows for the effective combination of weld beads with the rest of the metal.

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18V CORDLESS BRUSHLESS ANGLE GRINDER (115mm)

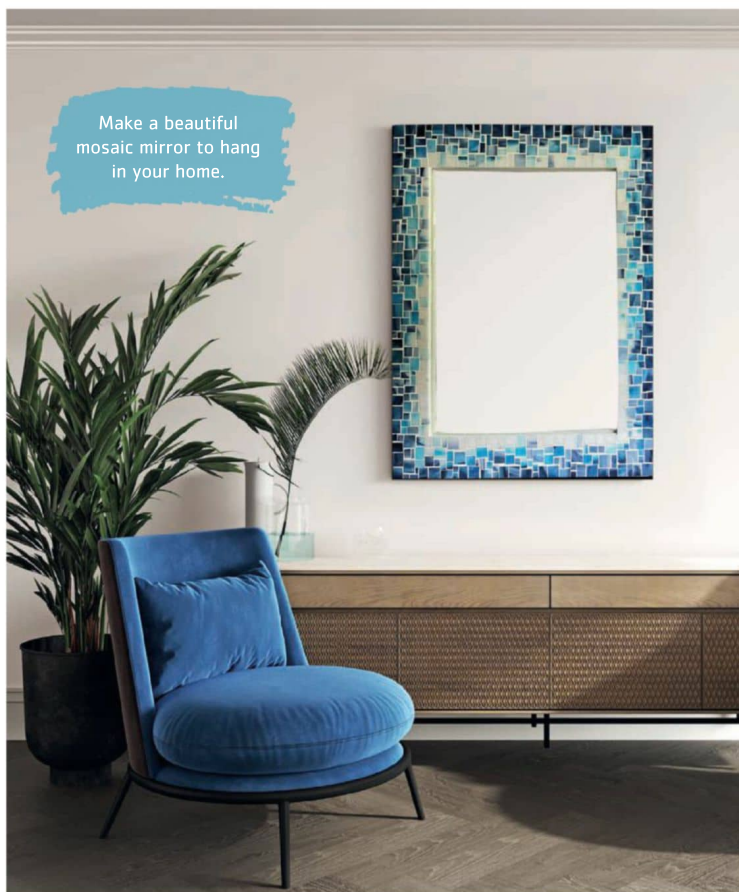


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MAKE A MOSAIC MIRROR

>> Sharron Warren

This mosaic features a shiny glass tile colour gradient that shifts from deep blue to bright white. My finished frame measures about 610mm by 711mm but you can do this project in any size.

I wanted this mosaic framed mirror to have a repeating pattern with a colour gradient moving from dark to light as you travel into the middle. This could be done with a random tile size, but I like to see a set that repeats as it wraps around the frame. If you are stumped for a good place to start, search the internet for flooring stores that have tile layout diagrams to help with installation.

First, consider the pattern or layout of the tiles. A classic layout is the Versailles or French pattern, said to come from the Palace of Versailles in France. It is made of four different tile sizes and includes a total of 12 tiles in a set. This pattern has a nook for the repeat to interlock on all four sides.

Next, I drew an adjusted French pattern that would better suit my design. It is also made of four different tile sizes, but includes a total of 13 tiles in a set. This new pattern only has nooks for the repeat to interlock on two sides.

After looking at the adjusted pattern, I decided I wanted more diversity in tile size.



Tools and materials

- Rubber mat
- Glass running pliers
- Glass wheeled nippers
- Glass cutter
- Glass cleaner
- Straight edge
- Tweezers
- Pointy tool
- Safety glasses
- Band-aids
- Palm sander
- Sandpaper
- Awl
- Vice-grips
- N-95 mask
- Safety glasses (a second pair because you can never be too safe!)
- Measuring/mixing cup
- Weldbond (or similar) glue
- Latex paint
- Mini whisk
- Little paintbrush
- Big paintbrush
- Diamond grit sanding blocks in 60, 200 and 400
- Glass: I used hand-rolled, fusible art glass made by Bullseye Glass Company. This project required 2-1/2 pieces of double-rolled, 3mm, 3-colour streaky sheet mix in white, turquoise and midnight blue. I also used a half sheet of white glass. I also had a leftover mirror from another project.
- Recycled frame: Large Solid Wood Frame for your base. I purchased my inexpensive frame from a local second-hand store for R50. Try to find a frame made of solid wood with a flat face and edges square to the front surface, any rounded edges make it more difficult to work with.

This led to the final layout that includes six different tile sizes with a total of 17 tiles in a set. I only have nooks for the repeat to interlock on two sides.

Using reclaimed items requires extra work. You have to remove existing posters, hardware and any finish. When disassembling your frame, try to save things like the flexi points to reuse at the end. Flexi points will securely hold your mirror in the frame from behind.

I used vice-grips to remove the hardware holding the glass and poster in place. Then, I used a palm sander with 150 grit sandpaper to remove the finish and take the frame down to bare wood.

Next, seal the wood frame. If the wood isn't sealed, then the frame may absorb

water from the thin-set mortar (what you use to glue your pieces down), causing the thin-set to dry too fast and the glass mosaic tiles to fall off.

1. Set the frame on some jars to elevate it off the table. Whisk together one tablespoon of Weldbond and three tablespoons of water in a measuring cup.
2. Spread the mixture evenly with a brush onto your wood. Be sure to cover the top, the four outside edges and the four inside edges that will be decorated with glass tile.
3. Let the frame dry for 24 to 48 hours in a warm place.
4. Flip the frame over and paint the rest of the surfaces with latex paint to give it a finished look. Make sure to paint

the part of the inside edge that might be reflected in the mirror.

5. Wear your safety glasses! Working with glass can be dangerous. When you score and break glass, sharp flakes and bits seem to go flying. Make sure to always wear eye protection!
6. Glass is sharp! Glass is sharp so please use shop safety. Try to be careful and always use safety glasses.

I used sheet glass to create white tiles to wrap the edges of the mirror frame. I would need 2640mm for the outer edge and 1980mm for the inner edge. My cut list:

- Inner edge: fifty-two tiles measuring 50mm x 16mm
- Outer edge: seventy-eight tiles measuring – 25mm x 6mm

Cutting the glass

Always clean your glass with glass cleaner and wipe dry. Clean glass always cuts better. Using a fine line sharpie marker, mark the desired width on the glass.

- Place the sheet glass on a cutting mat. Score the glass with a glass cutter and break the strips apart with the running pliers.
- My glass cutter has a pistol grip filled with a little oil, but any kind of glass cutter will work. A glass cutter scores the glass with its carbide wheel, this scoring of the surface tells the fragment where to break. The wheel is centred at the tip so make sure the wheel is on your marked line, not the edge of the tip that holds the scoring wheel. Now pressing firmly, take your glass cutter and score in one pass. A straight edge helps to keep everything square.
- The running pliers will actually break the glass along the score. Take a moment and look at the ends of the jaws of the running pliers. They are curved, so hold them with the front edge of the jaws curving down or frowning and the score centred on the black mark. It is best to score and break from the middle out, so

you have equal amounts of material on either side of the score. Place the scored glass in the mouth of the running pliers and gently squeeze until you hear a pop. Sometimes it helps to repeat this gentle squeeze on either end of the score. When the centre of the bottom jaw pushes up, the outside of the top jaw pushes down and the glass breaks on the scored line. This is called running the break.

Mix the thin-set mortar. Thin-set is the glue that bonds mosaic glass tiles to the wood frame. First, make sure you wear a mask to protect you from inhaling any tiny particles! Scoop some powdered thin-set into a measuring cup and add water. Stir until a thick paste forms that is thicker than toothpaste and forms a nice mound on its own. I mix the thin-set a little thicker when I need to work on vertical surfaces.

Place a piece of blue painter's tape under the frame edge to prevent the frame from sticking to the work surface. Working along the outer edge of the frame, spread a thick bed of thin-set. Working a piece at a time, press

each tile into the thin-set. The thin-set should squish about part way up the piece. Place the next piece down trying to leave uniform gaps. Thin-set is a structural bonding adhesive made of cement and capable of handling gaps up to about 10mm.

When you get to a corner, trim each tile as necessary. They may not all fit because the thin-set takes up space but it's always better to have extra pieces cut. Now take more thin-set and press it into all the gaps. Wipe any extra off with a damp sponge. Clean your sponge often. Repeat on the inside of the frame. Let the mosaic dry for 24 to 48 hours in a warm place. Again, glass is sharp so please use workshop safety. Please handle the glass carefully and always use safety glasses.

I used sheet glass to create the streaky blue tiles to form a pattern with a gradient on the mirror frame. Make sure to check both sides of the glass to see any difference in colour or pattern. I began by drawing an outline of the mirror frame on my scrap paper and dry fitting the pattern as I cut the tiles. Having a repeating pattern provided me with a cut list to get started I cut

about 6 sets. Here is my cut list for one set of my pattern.

Cut list for one set:

- Four – 12.5mm x 12.5mm
- Three – 12.5mm x 20mm
- Two – 20mm x 20mm
- Four – 20mm x 25mm
- One – 12.5mm x 25mm
- Three – 25mm x 25mm

Continue to cut more tiles as needed to fill in the frame outline. You will need to adjust the pattern to turn the corner. As I progressed around the frame, I did not always stick to the repeating pattern, it was more of a suggestion in some places.

When you like the arrangement and flow of the tiles, take a photo. Now you can really see the entire mosaic with some perspective.

Wearing a mask, prepare more thin-set mortar. It should be a little looser this

time because you are working on a horizontal surface now.

Working in segments, spread a 5mm thick bed of thin-set on the top of the wood frame. Start to transfer the pattern to the frame. Each tile is placed individually, pressing gently to make sure it is set. Again, try to leave uniform spaces between tiles.

Transfer all of your pieces to the frame. They may not all fit. Press extra thin-set into all the gaps. Wipe any extra off with a damp sponge and remember to clean your sponge often. Let the mosaic dry for 24 to 48 hours in a warm place.

Now sand the inside and the outside glass edges with the diamond grit sanding blocks. Use the block at an angle so you are only sanding the edge and not scratching the surface of any of the tiles. Work your way up from 60 grit to 200 grit and finish with 400 grit. There should be no exposed sharp edges now.

Lay your mosaic frame upside down on a soft, folded towel. Then, carefully measure the opening that will hold the mirror. Measure and mark your mirror to size. Then score and break as you did for the glass tiles. Please note that mirror glass is sharp, use shop safety and always wear safety glasses.

Place the mirror in the frame. Cut a piece of corrugated cardboard the same size as the mirror and place in the frame behind the mirror.

Now gently secure both the mirror and the cardboard with flexi points around the edge to hold everything in. They sell a flexi point driver tool specific to these flexi points, but you can use a small hammer if you tap them in at a slight angle and gently press them towards the cardboard. Lastly, add picture hanging hardware to the back.

Now you can hang your mirror and admire all of your hard work!



Tools and materials



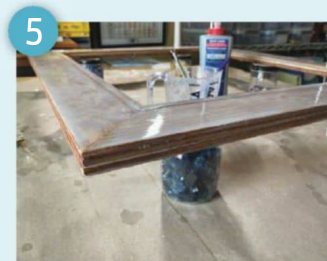
Diamond grit sanding blocks in 60, 200 and 400



The second hand frame I used



Sand the frame



Next, seal the wood frame



Mix the thin-set mortar



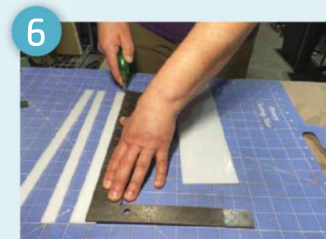
Place the next piece down trying to leave uniform gaps



Sort your pieces of glass into piles



Carry on transferring the pieces onto your frame



I used sheet glass to create white tiles to wrap the edges of the mirror frame



Place a piece of blue painter's tape under the frame edge to prevent the frame from sticking to the work surface



Next, cut the streaky blue tile



Place the mosaic in the shape of your frame



Wipe any extra off with a damp sponge and remember to clean your sponge often



Place the sheet glass on a cutting mat, score the glass with a glass cutter and break the strips apart with the running pliers



The thin-set should squish about part way up the piece



Having a repeating pattern provided me with a cut list to get started



Start transferring the pieces



Now sand the inside and the outside glass edges with the diamond grit sanding blocks



BUILD YOUR OWN HUTCH FOR A WEBER GAS BRAAI

>> Willie Marneweck



Tools and equipment

The machines listed below are not essential but is the most commonly used for this kind of project.

- Table saw
- Planer/thicknesser
- Router table with ½" router (plus tongue & groove cutter set)
- Biscuit slot cutting machine
- Jig saw
- Sanding machine
- Battery powered screw driver
- Suitable clamps
- Some hand tools, e.g., chisel, rasp, drill bits etc.

The popular Weber Q2000 gas braai can be bought with a custom Weber trolley, or as a stand-alone item. This hutch, however, not only houses the gas bottle but also has a drawer and another compartment for

storage. Making the hutch is not a very challenging project but does require an amount of skill from the woodworker and certain machines.

Some information regarding the hutch:

- The overall sizes of the hutch are shown in drawing 1, while drawing 2 shows where all the doors, flaps and drawer are situated.
- The side flaps, delivered with the Weber Q2000, will not be needed, and must be removed.
- The design, utilising frame-and-panel construction, combined with MDF boards, eliminates wood movement concerns. Gaps of 2mm wide are provided all-round the insides of the frames. This allows for wood movement of the panels.
- The panels/doors/flaps are all frame and panel construction. Tongue-and-groove machining can be done on a router table with a suitable set of cutters. Of course, a spindle machine will also do the job.

- The drawings should be read in conjunction with the cut list, which provides the dimensions of all items. The underlined dimensions in the cut list indicate exact final sizes. Dimensions not underlined have bit of excess added which will allow for final cutting during construction.
- All joinery is to be done with #20 biscuits. Avoid fast-curing glue.
- The two doors, drawer front, and front flap are designed to overlay the cabinet edges. The doors will consequently require full overlay, so-called Euro hinges.
- It is recommended that the inside of the front flap be covered with a Formica lay-on, or something else suitable, to keep fat and grease getting into the 2mm gaps.



Finish the cabinet insides (mask where necessary) before assembly. Of course, all 'loose' items, e.g., doors and flaps must also be finished before assembly.

HARDWARE NEEDED			
Description	Qty	Size	Notes
Drawer slides (bb full extention)	1 pr	12.5 x 45 x 350mm	Sliding tale
Drawer slides (bb full extention)	1 pr	12.5 x 45 x 400mm	Drawer
Euro hinges full overlay	4	Standard, slip or click	Doors
Butt hinges steel plated	1 pr	50 (open) x 64mm	Front flap
Butt hinges steel plated (if found)	1 pr	80 (open) x 40mm	Top flap
Handles or knobs	3	Personal choice	Doors & drawer
Caster wheels with brakes	2	75 d mm wheels	Under cabinet
Caster wheels without brakes	2	75 d mm wheels	Under cabinet
Biscuits	+/- 50	Size 20	All joinery
Screws (pozi or sq.)		Various lengths	
Stays (scissors type)	1pr	200-250mm (closed)	Front flap
Catches cabinet type	2		Front flap
Lay-on	1	Approx. 300 x 800mm	Front flap
Cup square bolt plated	1	M6 x 60 (cut to 45mm)	Locating pin

CUTTING LIST						
				Dimensions (mm)		
Item name	Code	Material	Qty	Thick	Width	Length
CABINET						
Style	A	Solid wood	6	<u>18</u>	60	1020
Rail	B	Solid wood	4	<u>18</u>	70	394
Panel	C	Solid wood	2	<u>18</u>	390	895
Rail	D	Solid wood	2	<u>18</u>	70	729
Mullion	E	Solid wood	1	<u>18</u>	70	899
Panel	F	Solid wood	2	<u>18</u>	345	895
Fixed shelf	G	16mm MDF	1		459	850
Front strip	H	Solid wood	1	<u>18</u>	60	850
Divider panel	I	16mm MDF	1		477	588
Bottom	J	16mm MDF	1		477	850
DOORS, FLAPS, etc.						
Style	K	Solid wood	2	<u>18</u>	60	570
Rail	L	Solid wood	4	<u>18</u>	70	336
Panel	M	Solid wood	1	<u>18</u>	332	445
Drawer front loose	N	Solid wood	1	<u>18</u>	118	437
Style	O	Solid wood	2	<u>18</u>	60	450
Panel	P	Solid wood	1	<u>18</u>	332	325
Style	Q	Solid wood	2	<u>18</u>	60	553
Rail	R	Solid wood	2	<u>18</u>	70	829
Mullion	S	Solid wood	1	<u>18</u>	70	432
Panel	T	Solid wood	2	<u>18</u>	385	429
Edge strip long	U	Solid wood	1	<u>18</u>	18	940

How to construct the hutch

Making the cabinet:

1. Start by making the side panels (utilising items A, B & C) and back panel (items A, D, E & F). These are all 'frame-and-panel' construction made according to drawing 3. Note that a completed panel is perfectly flat on both sides, i.e., panels and frames are level. There is a potential danger of a panel shifting inside a frame afterwards. Put a dab of glue in the middle of the rail groove, to catch the panel in the middle (alternatively hammer a short panel pin from 'inside' the frame, not going right through), in order to spike the panel tongue to a rail of the frame.
2. Next prepare the MDF items G, I, and J to final sizes. Join item H to item G with biscuits, noting that H sits in front of G, flush with the top of G. Make the cut-out at the top front edge of item I (18mm deep x 44mm high). The front edges of I and J are left as is and only sanded. MDF may substituted with chip board (suitably edged) but avoid solid wood.
3. Now is the opportunity to drill a hole for the gas pipe and regulator to pass through to the right hand lower cabinet. This idea can only be applied if the pipe is cut and re-joined, or if the plug receives a radial slot the size of the pipe.
4. Machine all the biscuit slots required to join all the cabinet items. This includes the side and back panels, as well as items C/H, I and J.



Before gluing and clamping the panel components, it is advisable to have a few 2 mm thick shims at hand. These can be put in the gaps while clamping is done in order to maintain 2 mm gaps all-round between all the panels and the frames.



Edge strip short	V	Solid wood	2	18	18	560
Drawer side	W	16mm MDF	2		90	450
Drawer front & back	X	16mm MDF	2		90	358
Bottom	Y	3mm MDF	1		390	450
Style	Aa	Solid wood	2	18	60	395
Rail	Ab	Solid wood	2	18	70	774
Mullion	Ac	Solid wood	1	18	70	274
Panel	Ad	Solid wood	2	18	358	270
Sliding table	Ae	Solid wood	1	20	350	580
Locating strip	Af	Solid wood	1	12	25	200

NOTE: Underlined dimensions indicate exact sizes

- Do a dry fit with all the cabinet items. When this proves in order then glue and clamp a subassembly consisting of only the back panel, one side panel and items G/H, I and J.
- Finally, glue and clamp the remaining side panel to the subassembly in par. 5. above. This completes the bare cabinet.

TOP TIP If the drawer slides are attached onto the inside left – hand panel and right – hand side of panel I, before assembly, one does not have to work in the cramped space to do so afterwards. Carefully check the correct placements.

Making the two doors, two flaps, drawer, etc

- The two doors (consisting of items K, L, M, O, P, Q), can next be made according to drawing 5 in the same manner as in the case of the panels in par. 1 above. Once finished, the doors must receive two pocket holes of 35mm diameter with the centres of the holes 85mm from and bottom edges. The outer edge of holes must be 5mm from edge of the style (refer to drawing 5).
- The drawer items W and X are biscuit butt joined. The bottom item Y is nailed (or screwed) on with 25 mm nails. The loose drawer front N will be fitted after the drawer and its slides are installed, but go ahead to drill four countersunk holes near the four

corners, in the inside front of the drawer to later attach the loose front item N.

- Construct the top flap (items Q, R, S & T) as in par. 1 but don't attach the edge strips U & V) until the flap is fitted to the cabinet.
- The front flap (items AA, AB, AC & AD) is similarly constructed as in par 1. above.
- Make the sliding table item AE as shown in drawing 5. Now position the Weber Q2000 symmetrically on top of it. Mark clearly where the feet are standing. Mark the 'footprints' and router the four recesses 5mm deep, enlarging gradually until a good fit is obtained. The top edge can receive a bevel all round.
- Locating strip AF can be made and fitted inside the cabinet as per drawing 2B.

Fitting the removable items

- The doors are fitted with full overlay Euro hinges, be it slide-on or clip-on. After the doors are fitted, they must be adjusted according to standard practice. Adjust so that the doors are flush with the cabinet bottom and a gap of 2mm is left between them. Knobs or handles can also be fitted.
- The drawer is fitted with full extension ball bearing runners.

The drawer runners are fitted according to standard practice. The front N can be attached to the drawer, in direct alignment with left hand door leaving a 2mm gap.

- The front flap, in open position, is held level with the shelf G and pushed tight up against it. The hinges can then be screwed on. Now is also the right time to fit the two stays and the catches.
- The top flap comes next. First the two special hinges must each receive two extra countersunk holes on one flap. The top edge of the cabinet back panel needs two cut-outs (drawing 4). Prepare a piece of scrap wood 20mm thick x approx. 50mm wide x approx. 100mm long (call it a gauge). The gauge is clamped symmetrically to a cut-out on the outside back panel, parallel under the 5mm cut-out. The side of the flap of the hinge with extra two holes is set in the cut-out, with the barrel showing upwards, and the other flap hanging over the gauge. Push this flap against the gauge and then drive in three screws to secure the hinge. Since the top panel is 18mm thick, the gauge leaves a gap (play) of 2mm between the outside face of the flap and of the cabinet outside, when the flap is opened by 270°. Now hold the flap as in the 270° open position underneath the two

special hinges, symmetrical to the cabinet. It is critical that the rear edge of flap be aligned with the barrel of the hinge (in fact, just on the cut line that separates the two hinge elements). Drive in the three screws.

The three 18 x 18mm edge strips, items U and V, must now be glued underneath the flap. This entails cutting mitres at the two front corners and final cut off at the back corners. There is no strip at the back.

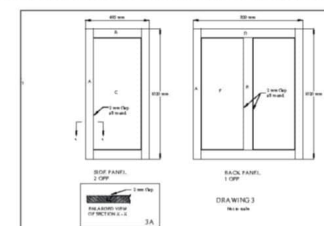
- The next item to be fitted is the sliding table. Disassemble the runners. First screw the drawer members (the loose part) underneath the table (drawing 2A). Keep them parallel. Reassemble the runners and put the table in position inside the cabinet as per drawing 2B. Fit the Weber in its recesses with its lid closed, and irrespective of the indicated dimension of 52mm, the Weber should clear the back panel by at least 5mm.

Remove the Weber and carefully, slowly pull the table out until the screw holes furthest back in the runners can be reached and screws put in. Pull the table forward and put in two screws. The table can now be fully pulled out as much as possible. It will be noticed that when the table is fully forward the release levers of the runners can be reached from underneath to fully remove the table. Push back before removing and make a line directly along the left edge onto item AE.

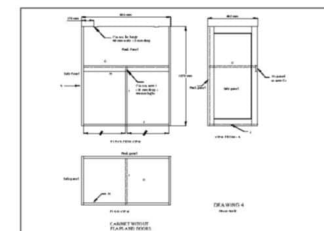
- To fit the locating strip AF the table left hand edge can be marked onto the shelf G. Remove the table. Drawing 2B shows the position of item AF. The strip can be glued and nailed in position. While the table is out, drill a 6mm diameter hole through it as indicated in drawing 2B. Refit the

table and position the Weber in its recesses. Slide the table outwards until the lid can be swung fully open without hitting the back of the cabinet (leave a clearance of 5mm). Again, remove the Weber but maintain this position of the table. With the 6mm hole in the table as a guide, drill a 6mm diameter hole in item AF (12mm deep into it). Push table all the way back and drill another hole in AF at that position. This is the lock position with the table/Weber backwards position.

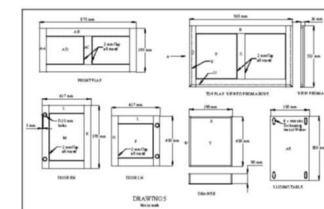
- The locating pin is a plated M6 cup square bolt, cut off to a length of 40mm and round off the tip. This pin is simply dropped into the hole in the table. It should locate on the strip AF at the forward and backwards positions.
- The last items to be fitted are the castors. These are screwed onto the cabinet bottom, situating the two casters with the brakes in front
- Outdoor finish is recommended. Woodoc 30 is a good choice; it can either be brushed or sprayed on.



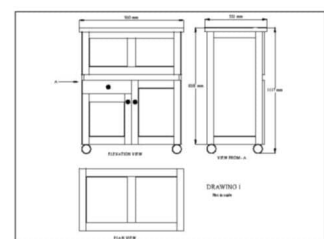
Drawing 3



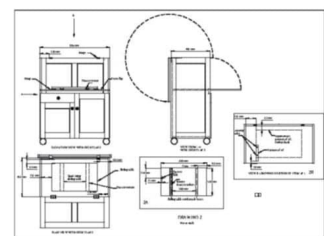
Drawing 4



Drawing 5



Drawing 1



Drawing 2



No tree is perfect. It's subject to defects from the time it emerges as a seedling to the last stages of seasoning.

UNDERSTANDING AND WORKING WITH WOOD DEFECTS

>> Ron Smith

A defect is simply an abnormality or irregularity found in wood. There are many different types of defects arising from many different causes. For instance, there are natural and acquired defects caused by a broken limb or other injury, insect and fungal attack, or rapid tree growth.

There are innate defects caused by the natural characteristic of wood to shrink or expand in response to water vapour

in the air. And, there are artificial and mechanical defects caused by incorrect sawing or machining (conversion), improper drying (seasoning), or improper handling and storage.

Defects may be responsible for reducing wood's economic value, lowering its strength, durability and usefulness, marring its appearance, and in some cases, causing its decay.

Natural wood defects

During its lifetime, a tree is subjected to many natural forces that cause defects in the wood. Woodworkers are quite familiar with these defects – knots, splits, ugly dark streaks or stains, worm holes, even decay. Some of the more common wood defects all woodworkers face include:

Bark pockets: Formed when a small piece of the bark protrudes into the wood. This area is generally considered unsound.

Bird pecks: Caused by birds, especially woodpeckers, which peck on trees mainly to cause panic to the insects living in or under the bark and in the wood of the tree. This causes the insects to come out enabling the birds to eat them. Bird pecking can cause small injuries to the tree, resulting in grain changes that later show up as various forms of figure in the wood (figure is the 'look' or appearance of a piece of wood).

Burls: Burls are a deformed growth formed when a tree receives a shock or injury in its young age. Due to its injury, the tree's growth is completely upset and irregular projections appear on the body of the timber.

Continued tree growth follows the contour of the original burl deformity, producing all manner of twists, swirls and knots in the wood fibre. Usually, this results in spectacular patterns in the wood that can be used to great effect in woodworking. Burl wood is normally darker than the rest of the tree and, in some cases, may be a significantly different colour altogether.

Coarse grain: If the tree grows rapidly, the annual rings are widened. It is known as coarse grain timber and possesses less strength.

Fungal damage: Fungi generally damages timber or wood by discoloration and/or decay. The resulting wood is generally weaker or of a different colour than is typical for that species. The more common effects of fungal damage include:

- **Blue stain** – Common in pine, maple, and many other woods, blue stain (also called 'sapstain') is caused by a fungus that feeds on the sap. It does not live in live trees due to lack of oxygen. The bluish colour (sometimes grey or dark grey) is the fungus itself, not the colour of the sapwood. The colour does not degrade the cellular structure and does not count against wood in the grading process.

- **Brown rot** – A form of wood decay found only in softwoods that destroys the wood's cellulose, eventually causing cracks across the grain. Advanced brown rot tends to leave the wood more brown than normal. It is a precursor to dry rot.
- **Dry rot** – After the wood infected with brown rot dries out, the cell walls of the remaining wood turns into dry powder when crushed. This is called dry rot.
- **Heart rot** – This is formed when a branch has come out of the tree. The heart wood is exposed to an attack of atmospheric agents. Ultimately, the tree becomes weak and it gives a hollow sound when struck with a hammer.
- **Wet rot** – Some kinds of fungi cause chemical decomposition of a wood's timber and in doing so converts timber into a greyish brown powder known as wet rot. Alternative wet and dry conditions favour the development of wet rot. If unseasoned or improperly seasoned timber is exposed to rain and wind, it easily becomes vulnerable to wet rot attack.
- **White rot** – This is just the opposite of brown rot. In this type of fungi attack, the wood's lignin and the wood itself assumes the appearance of a white mass consisting of cellulose compounds. Some of the white rots during their early stages of development form what is commercially termed 'spalted wood.' This wood has a unique colour and figure, and some woodworkers highly prize it.

Insect defects: There are a number of insects that eat wood. Many other insects use wood as a nesting place for their larvae which results in holes and tunnels in the wood. The damage they cause ranges from minor to catastrophic. Some of the more common insects include:

- **Wood boring beetles** – Wood boring beetles, such as buprestid, powder post, ambrosia, furniture, and longhorn, tunnel through wood to deposit their larvae. Some larvae eat the starchy part of the wood grain. Many species attack live but usually stressed trees, while others prefer recently dead hosts.
- **Pin-hole borers** – They damage fresh-cut logs and unseasoned wood, but also attack weakened, stressed, dying trees, and healthy trees with bark injuries.
- **Termites** – Termites not only tunnel through wood in various directions, but eat away the wood from the cross-section core. They usually do not disturb the outer shell or cover. In fact, the timber piece attacked by termites may look sound until it completely fails.

Knots: A knot is the base of a branch or limb that was broken or cut off from the tree. The portion of the remaining branch receives nourishment from the stem for some time and it ultimately results in the formation of dark hard rings known as knots. As the continuity of wood fibres are broken by knots, they form a source of weakness. There are several types of knots:

- **Sound (or tight knots)** – Solid and cannot be knocked loose because they are fixed by growth or position in the wood structure. They are partially or completely intergrown with the growth rings.
- **Unsound knots (or loose knots)** – Knots which fall out of the wood when pushed or have already fallen out. They are caused by a dead branch that was not fully integrated into the tree before it was cut down.
- **Encased knots** – Those which are not intergrown with the surrounding wood.
- **Knothole** – A hole left where the knot has been knocked out.
- **Spike knots** – Limbs which have been cut across or cut lengthwise, showing the endwise or lengthwise section of the limb or knot. These knots generally have splits and severe grain deviations near them.

Raised grain: Anything that gives the wood a corrugated feel. Typically, this is caused by the harder summerwood rising above the softer springwood in the growth ring. The growth rings do not separate.

Shake: A lengthwise crack or separation of the wood between the growth rings, often extending along the board's face and sometimes below its surface. Shakes may either partly or completely separate the wood fibres. The separations make the wood undesirable when appearance is important.



A knot is the base of a branch or limb that was broken or cut off from the tree



There are a number of insects that eat wood; the damage they cause ranges from minor to catastrophic

Although this is a naturally occurring defect possibly caused by frost or wind stress, shakes can also occur on impact at the time of felling and because of shrinkage in the log before conversion. There are two types of shakes:

- **Star Shake:** A group of splits radiating from the pith or centre of the tree in the form of a star. It is wider on the outside ends and narrower on the inside ends. Star shakes are usually formed due to extreme heat or severe frost during the tree's growth. Also referred to as heart shake.
- **Ring Shake:** Also known as 'cup shake' or 'wind shake,' this rupture runs parallel to the growth rings. A ring shake is not easily detected but only becomes apparent after drying. It's caused by any one of numerous factors, including bacteria, tree wounds, tree age, and environmental conditions such as excessive frost action on the sap when the tree is young.

Split: A split is a rupture or separation in the wood grain which reduces a board's appearance, strength, or utility. One of the more typical ruptures of this type is called ring shake. In a ring shake (also known as cup shake or wind shake), the rupture runs parallel to the growth rings. It's not easily but only becomes apparent after drying. It's caused by any one of numerous factors, including bacteria, tree wounds, tree age, and environmental conditions.

Stains: Stains are a discoloration that penetrate the wood fibre. They're caused by a variety of conditions and can be any colour other than the natural colour of the wood. A number of non-wood destroying fungi can cause stains or discoloration. Some stains may indicate decay or bacteria are present.

Spalting: Any form of wood discolouration caused by fungi. It's typically found in dead trees, so if the wood isn't stabilised at the right time it will eventually become rotten wood.

There are three types of spalting that are typically incorporated into woodworking as design elements: pigmentation ('sapstain'), white rot, and zone lines.

Twisted fibres: These are known as wandering hearts and caused by twisting of young trees by fast blowing wind. The timbers with twisted fibres is unsuitable for sawing.

Wood defects due to conversion

Conversion is the process of converting raw timber to forms suitable for woodworking or construction projects. During this process, the following defects may occur:

Chip mark: Shallow depressions or indentations in the surface of a board caused by shavings or chips getting imbedded in the surface during the process of dressing. They may be formed by a planer or jointer.

Diagonal grain: Wood in which the annual growth rings are at an angle with the axis of a piece as a result of sawing at an angle. In other words, rather than running parallel to the long edge of a board, for example, the grain runs at an angle to it. Such wood is not permitted for structural applications in the American Forestry Association guidelines because it lacks the same structural strength as an equal-sized piece that has the grain running parallel to the edge.

Torn grain: An irregularity in the surface of a board where wood fibres below the level of the dressed surface have been torn or broken out by a planer.

Wane: The presence of bark or the absence of wood on the corners or along the length of a piece of wood. Wane, in the form of bark, is more commonly associated with rough milled wood. In the case of construction wood, it can be bark or missing wood.

Machine burn: A darkening of the wood due to overheating by machine knives or rolls when pieces are stopped in the machine.

Machine bite: A depressed cut of the machine knives at the end of the piece.

Machine gouge: A groove cut by the machine below the desired line.

Wood defects due to seasoning

Seasoning is the process of drying wood (either in a kiln or air drying) to an appropriate level of moisture for woodworking and other commercial uses. During this process, a board may become warped.

The term 'warped' is a nonspecific term that refers to a distorted or misshapen board. More specific terms for warping include cupping, twisting, bowing, crook, and spring. Common seasoning defects, including types of warping, include:

Bowing: A curvature formed in the direction of the length of timber. A bowed board is flat, but bent, like a road going over a hill.

Check: A check is a crack which separates the fibres of wood. It does not extend from one end to the other. It occurs across the growth rings and is usually caused by poor or improper drying processes.

Crook: Where the board remains flat, but the ends move away from the centre. Another type of warp.

Twisting: Where the board curves in length and width like a propeller.

Cupping: Where the face of a board warps up across its width such that if one looks at the end of the board, it will

look like a shallow letter 'U.' Is common with plain-sawn wood.

Spring: Occurs when the board remains flat in width, but curves in length like a river going around a bend.

Case hardening: When wood dried too quickly, wood shrinks much at the surface, compressing its damp interior. This results in unrelieved stress. Case-hardened wood may warp considerably and dangerously when the stress is released by sawing. Extreme cases of case hardening leads to honeycombing.

Honeycombing: During drying, internal stresses cause various radial and circular cracks to develop in the interior portion of the wood resembling a honeycomb texture. Honeycombing is among the worst of drying defects because

it's irreversible and usually cannot be detected by looking at the face of the wood.



Defects may be responsible for reducing wood's economic value, lowering its strength, durability and usefulness, marring its appearance, and in some cases, causing its decay

Dealing with defects

Many woodworkers prefer to avoid wood with defects because they detract from the beauty or value of the finished product. For others, though, defects in their works are often highly prized.

Take, for example, wood microphone maker Greg Heumann and tree sculptor Cecil Ross of Bainbridge Island, Wash. They often seek wood with certain defects because they believe they add character to the wood and ultimately their final product.

"I love wood with colour variations, knots, and insect holes because they make each microphone unique," says Heumann. "As long as there is no threat to the mic's structural strength, I normally leave them in as is." Ross also seeks wood with blemishes, knots, and holes. "They form the basis or focal point of my sculpture's design," he notes.

On the other hand, mandolin maker Austin Clark purposely avoids all defects in the spruce and maple he uses to create his mandolins. "My mandolin customers are pretty traditional, so they want the wood in their instruments to be straightforward. Meaning they need to be free of any defects," he says.

Many woodworkers rely on suppliers to ship them the wood they want. Most suppliers are reputable and they are careful to send their customers wood that is generally free of deformed or irregular wood.

On the other hand, woodworkers who buy their wood from a hardware store should carefully check the wood and select only those pieces that are usable. They may have to get permission to sort through the wood and also promise to restack everything when done.

Not all woodworkers, however, want to sort through stacks of wood. Instead, they may opt for the most expensive-grade available, whether it's needed or not.

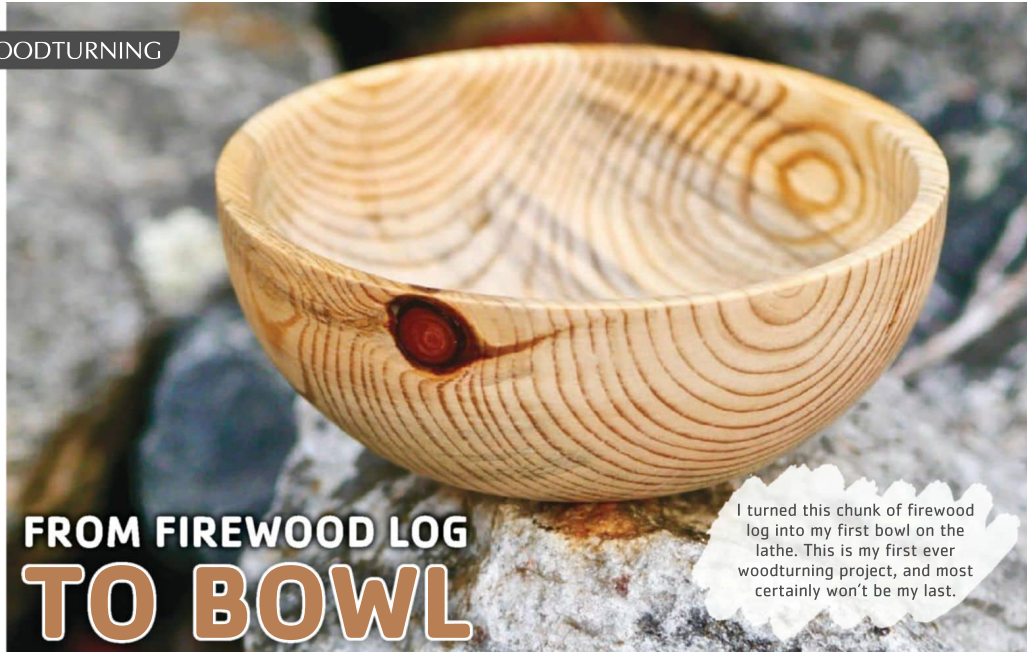
Of course, there are times when the best grade is the best choice, especially for premium furniture makers, but more often, woodworkers can save money and get good wood for their projects by using lower grades. Often, lower-grade boards display more beautiful figure and character than better boards. The catch to finding these pieces, though, is to know the basics about buying wood.

Some woodworkers may even obtain wood from fence rows and fields, and perhaps old abandoned barns or other buildings. But they need to be wary of getting wood that might contain nails or barbed wire which could damage a saw blade.

For most woodworkers, the easiest way to deal with natural defects is to simply avoid using the wood. Another option, though, is to hide the defect. Furniture maker John Landis says, "At times I'll use a knot in a tabletop as long as I can keep it underneath and it doesn't pose a structural problem. I won't sacrifice a beautiful side of a board I can use for making a tabletop if the knot is underneath, not visible, and isn't a structural problem."

Defects can also play a supporting role – provided they enhance the beauty of a piece. For instance, when Landis comes across wood that has attractive burl, he rarely uses it as a slab in and of itself because the wood is usually unstable. Instead, he slices it into quarter-inch thick pieces and applies it to a stable backing inside door panels or uses it as a veneer on furniture.

Wood sculptor Jose Rivera works with various woods, especially mesquite. He often encounters mesquite with knots and longhorn beetle holes, but has learned to incorporate them into his finished pieces. "Knots are common. To me they add to the beauty and characteristic of the wood," Rivera says. "As for the insect holes, I prefer not having them. But they do appear in some of my pieces."



FROM FIREWOOD LOG TO BOWL

I turned this chunk of firewood log into my first bowl on the lathe. This is my first ever woodturning project, and most certainly won't be my last.

>> Johnny Brooke

Turning is one of the most rewarding woodworking skills I've learned thus far, and now every log I see seems to contain a hidden bowl. Now, on to the steps!

Step-by-step guide

First, a bit about the tools required for woodturning... Here are the tools I used on this project. Obviously, there are much cheaper versions of all of these items, if you are on a budget, plus, some may not be available in South Africa – I would suggest visiting your local woodworking or woodturning specialist as they will be able to talk you through which tools and machines will be best for your needs and skill sets.

- Laguna 1412 Bandsaw
- Easy Wood Tools Carbide Turning Tools
- Nova Galaxi 1644 Lathe
- Nova SuperNOVA2 Chuck
- Nova Cole Jaw Set

Cut your log in half lengthwise, then cut a roughly square piece for one of the halves. Mark the centre and mount your faceplate (these are generally included with your lathe, but you might need to purchase one otherwise). Make sure to use strong screws here.

To start, rough out the bottom of your bowl. You want to bring the blank into round and then start to create the shape of your bowl. Remove as little material here as you can, otherwise you'll end up with a smaller bowl than necessary.

Once the bottom is round, cut a tenon and mount the bowl into your chuck jaws. Again, this might be an aftermarket item, depending on your lathe. I used a SuperNOVA2 chuck.

With the bowl on the chuck, start to rough out the inside of your bowl. You want the outside and inside walls of your bowl to be parallel. Wall thickness is personal preference.

Make sure to check for cracks along the way, logs are full of them. If you have a large crack, you can stabilise it with epoxy.

Once you have the shape you want, take a few smoothing passes. Speed up your lathe and take very shallow passes. This should leave you with a nice

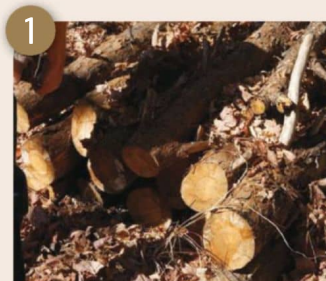
surface, as long as your tools are sharp.

Next, sand the inside and sides of your bowl. This is the last time you'll have access to the inside of the bowl while it's mounted to the lathe, so make sure to be thorough here. I went from 120 to 600 grit sandpaper.

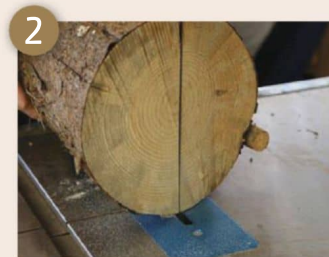
Next, mount your bowl to a set of Cole jaws on your chuck. There are other ways to do this, but Cole jaws are pretty great for this type of task. Cut away the tenon you created in the previous step and then start to smooth the bottom of your bowl. If you make the bottom concave, the bowl will sit flat. This is important.

After you have your shape dialled in, go through the sanding process again. I started at 80 grit here since I had some more tearout due to the low speeds required for the Cole jaws.

I used a spray polyurethane for my finish, simple and quick, and then was done!



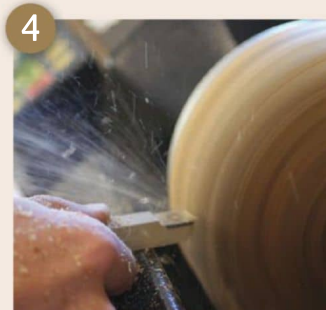
1 First step – find your log



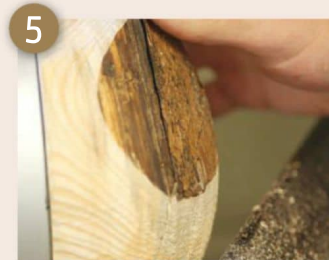
2 Cut your log in half lengthwise, then cut a roughly square piece for one of the halves



3 Mark the centre and mount your faceplate



4 To start, rough out the bottom of your bowl



5 Remove as little material here as you can, otherwise you'll end up with a smaller bowl than necessary



6 With the bowl on the chuck, start to rough out the inside of your bowl



7 Once you have the shape you want, take a few smoothing passes



8 Next, sand the inside and sides of your bowl



9 Next, mount your bowl to a set of jaws on your chuck



10 Cut away the tenon you created in the previous step



11 Then start to smooth the bottom of your bowl



12 I used a spray polyurethane for my finish

THE ULTIMATE TROUBLESHOOTING GUIDE TO ROOF REPAIR

Every homeowner will have to deal with a roof repair during the lifetime of their home. While you want your roof to last for a very long time, accidents can cause damage to your structure. You can tackle some of those repairs by yourself.

If you need to replace your roof, it can cost hundreds of thousands of rands. While you want to avoid spending a lot of money, there are times when it is absolutely necessary to call a professional team to repair your home. For some repairs, you might be able to fix them by yourself. With a few tools and materials, you can keep your home safe and avoid a high repair bill.

When a storm hits your area, it can cause tree branches to fall and damage your roof. If you see a leak, you shouldn't start to panic. Some leaks or ripped shingles do not always spell extreme damage. These issues can be fixed by a replacement of the flashing or installing new tiles on your

roof. On average, the typical roof repair will cost well over R10 000. These numbers may seem high, but these fixes are significantly lower than a new roof installation. In some cases, you can repair your roof for only the cost of materials.

Before you grab a ladder and hit the roof, you need to know about the complications from attempting roof repairs by yourself. Any work on a roof can be dangerous, and you want to proceed with caution. For a professional opinion on the repair, you might need to call a roofing company to check out your roof. If you are uncomfortable handling these issues, then you should hire a contractor to complete the work.

Replace that flashing

Flashing is used to protect the seams that run along your skylights or chimneys. Flashing comes in a variety of materials, but the most common types are plastic or sheet metal. You will find flashing underneath your roofing layers as it protects your home's essential components, such as the venting pipes. If the flashing gets damaged, your roof and the surrounding parts are prone to deterioration from the outdoor elements. These roof repairs are simple. You need to purchase new flashing and swap it out for the damaged pieces. If there are any cracked tiles or other materials, then these parts will have to be replaced as well.

Reseal small areas

On your roof, you might notice that the sealant is used with the flashing. This adhesive is commonly found around the edges of skylights and vents. If you have issues with leaking, then your bond may be worn out. When sealant ages, it can lose its bonding properties. As a result, you will have a roof leak around the vents or other open areas. These problems are another easy fix. You will have to reseal those leaky areas or apply new tar to your roof.

Fix those damaged tile

Throughout the life of your roof, tiles can go missing or become damaged. There are many reasons why you need to replace tiles. Severe weather can blow them off your roof. Animals can also be very destructive. They can dig into your roof and break the tiles.

If you want to repair these issues, you need to remove the old shingles. New tiles can be purchased at your local home hardware store. You might have to replace a large section of shingles for damage caused by ice dams or pooling water. In the future, you need to keep your gutters clean to avoid any of these drainage issues.

Temporary solutions for roof damage

Your roof is tough, but some things can still cause significant damage to your home. Severe weather, falling heavy branches, and wildlife might create punctures and holes in your roof. While it may be tempting to repair these issues by yourself, it is best left to the professionals. They have the materials and skills to repair holes in your roof. In some cases, you might have to reframe the damaged part of your roof.

If a severe storm has hit your area, it may take a few days for the roofing company to come out to your home. You can try to cover up the damage with temporary material and roofing silicone. However, some of these DIY fixes can cause bigger

repair bills. For severe damage to your roof, you want to leave it to the professionals. You should try to tarp the area and keep it covered until a professional company comes to your home.

6 Most common roof problems and tips to resolve them

Now that you know what to look for let's unravel the top 8 common roof problems that every homeowner faces and also the ways to treat them.

1. Faulty workmanship and poor installation

Obvious and unforeseen – faulty installation of roofing eventually increases the chances of roof-related problems and reduces its life. It is very important that roofers should hold immense knowledge about all the aspects of roofing from BUR system installation preparations to the torch-applied mod bit system performance or else these can lead to problems such as premature aging and failure.

Solution: Don't install roofing sheets in extreme weather conditions – too cold or too warm temperature. It can result in wrinkles, blisters, fish mouths and contraction and expansion of sheets. Be sure that you hire reliable roofing contractors for your metal, flat or tile roof installation.

2. Ponding water

Flat roofs often experience ponding water situation during the rains. Blockage in water flow during the rainy season causes ponding. Ponding water situation deteriorates the quality of the roof and leads to seeping.

Solution: Properly and efficiently mop your roof. Improper mopping can block drains and thus result in ponding of water. Remember, before you repair your roof, thoroughly investigate the source of the ponding and eliminate it. You should keep drains free of sand, silt and debris.

3. Roof leaks and moisture

Roof leaks are one of the most common problems that probably every homeowner faces. With any roof – no matter what type, roof leaks make you cringe. There are dozens of reasons for a roof to leak from cheap roofing material to improper

flashing. Inadequate head laps and backwater laps are other reasons that can allow moisture in. An excessive moisture infiltration can cause roof failure and call for a new roof installation.

Solution: Always install high quality seams with the single-ply membrane. Glued and heat-welded seams are a perfect choice for the durable membrane. The membrane will hold water without causing any leaking problem.

4. Clogged gutters

The clogged gutter is the root problem of many problems. You have to be sure that the gutter is not blocked. Clogged gutter can cause drainage problem and puddling.

Solution: Don't forget to clean the gutter regularly to restore proper water flow.

5. Punctures and penetrations

Roof punctures are logically more dangerous because it becomes difficult for homeowners to spot them. Roof punctures create holes in the roof, allowing moisture or leaks into the most vulnerable parts

of the roof. These holes are dangerous for homes as well as they can create serious leaks and damage the interiors.

Solution: If you want to avoid roof punctures and penetrations, then make sure that you or the roofer do not stay on the roof for a long time – especially with heavy tools.

6. Lack of maintenance

There should be no excuse to neglect the maintenance of a roof. If you will neglect your roof, then surely your roof will neglect your protection. Addressing the roofing problems in time can prevent their escalation. Quarterly inspection of the roof is mandatory. All you need to check is broken or missing tiles and shingles, drain, gutter and flashing.

Solution: Convey minor problems to the roofing contractor. This is the best way to maximise a roof's life and minimise expenses.

Note: It is important to inspect a roof after and before all the seasons, so that you could ensure the safety and security of your family members.

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Before you head outside to hose down your deck, read this helpful guide so you know more about the best ways to keep your wooden decking beautiful and squeaky clean.

DECK CARE AND MAINTENANCE

A wooden deck adds beauty and value to your home, and it's a great way to enjoy some outdoor entertaining. When it comes to good maintenance and care, it's important to practice a few proper deck cleaning methods.

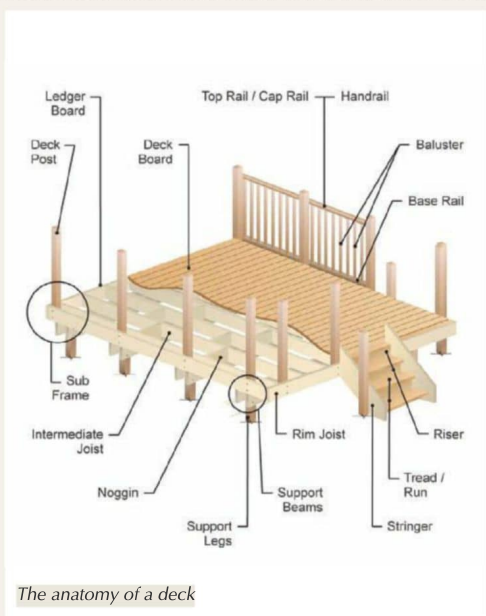
Prep the surface:

When you're ready to do a little deck cleaning, it's crucial that the deck is free of any excess debris. The finish on your wooden decking will break down over time and from exposure to the elements.

Annual cleaning and an application of sealer will keep it looking good as new. Before you start the process, you need to eliminate mould and mildew that can cause your deck to rot.

Remove all furniture and pots off the deck, then sweep it thoroughly. If there's anything stuck between the slats of your deck, use a putty knife or screwdriver to remove it, then sweep it away.

After all the debris is gone, it's time for quick washing. If you have an attachable jet wand, use that to rinse your deck off thoroughly. Make sure that the flow of water is strong enough to wash all of the dirt and debris completely off the surface of your deck. Just make sure it's not too strong or else it could damage the wooden boards.



The anatomy of a deck

Deck cleaning methods:

You can clean your deck a number of ways, but store-bought deck cleaning products are ideal. Read the directions thoroughly to find out if the product you choose requires your deck to be wet before applying the cleaning solution.

It's best to wash down your deck on cloudy days so the sun won't evaporate the cleaner and the water. As you apply the cleaning solution, use a paint roller, a large brush, or a stiff-bristled broom to work the cleaner into the wood.

Let the mixture of cleaning solution and water sit on the surface of your deck for the allotted time frame per the instructions. Don't let the cleaning solution pool or it could cause discoloration. Once you're ready to rinse, start the process from the bottom, working your way up as you spray the rails with clean water. After you're done rinsing it clean, let your deck dry for at least two days before you apply any sealer.

You can rinse the deck using a hose with a nozzle sprayer to get better coverage. Take your time and use sweeping motions until the entire deck is rinsed clean and no more cleaning solution is visible.

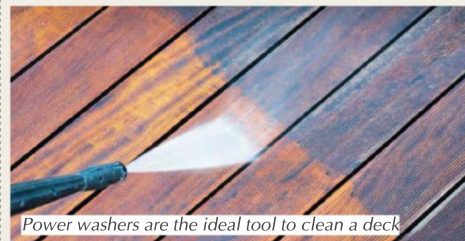
If you prefer, you can use a power washer to clean your deck, but just be sure it's dialled to the appropriate setting. If the setting is too powerful, it can cause serious damage to the finish of the wood.

Sealing your deck:

To truly practice proper deck cleaning, you should seal your wooden deck at least once every two to three years. Adding sealant will keep the deck looking new and protect it against serious damage like mould or water penetration.

You can find deck sealing products at most home improvement stores and they come in a range of different finishes. A clear sealer will let the natural wood grain show through, while sealants with stains give your deck a fresh touch of colour.

The type of sealant you select is entirely up to you, but it's important to make sure that it matches your current



Power washers are the ideal tool to clean a deck

deck's colour and style as closely as possible. If you want to change the colour of your deck completely, go with a sealant that includes an opaque stain.

When you're ready to apply the sealer, wear gloves, eye protection, and a mask to stay safe. Pick a period of two days when you will have clear skies and reasonably moderate temperatures that aren't too extreme.

Start by sanding your deck with 80 grit sandpaper. Look for any protruding nails or screws and replace them as needed. If a nail is only sticking out a little bit, you can hammer it back into place. You should apply your sealer or stain using a paint roller. Cover three to four boards at a time as you go. When you stain or seal the railings, use a smaller roller to get into cracks and crevices.

As you apply the sealer, make sure it does not puddle or dry out. Attempt to apply two thin coats rather than one thick coat for the best application.

Keep an eye on your deck throughout the year and try to keep it free of any debris and dirt. With regular sweeping and a quick wash-down, you can keep a wooden deck clean without too much effort.

Stain or seal your deck every few years to keep it in great shape and looking its best. Always follow directions carefully on any deck cleaning and deck sealing products.

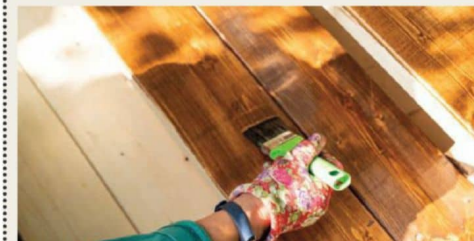
Bring back the colour:

Restoring your wooden deck every now and then can be done as part of a home renovation product and this can often be more important than cleaning your deck on a regular basis.

Wood deck restoration should hopefully bring back a lot of the colour to your decking. This is particularly true if you have not cleaned your decking in a long time or the cleaning process has not restored the beautiful wooden hue to your decking as you would have liked.

What is discolouration?

Your decking is exposed on a regular basis to the ultraviolet light of the sun, and over time this affects the structure of



your decking. It is when this structure starts to break down that you start to see the wood lose its brown colour and turn grey. Not to worry, restoring your wooden deck is relatively straight forward.

Different solutions for different wood:

Non-chlorine oxygenated bleach is perfect for most types of wood and will get rid of most of the stains and restore the wood to its natural colour. They are also good for the environment. Don't use this type of bleach for woods like redwood or cedar, however. The bleach can darken the natural colour rather than restore it.

Instead, for these types of wood, use chlorine bleach. This is toxic, so always consult the instructions and ask for some advice about safety precautions from fellow users. But it's crucial because it lightens the wood rather than darkens it.

A clean deck is a happy deck:

With a few simple deck cleaning practices, you can ensure that your wooden deck will stand the test of time. Keep it free of debris and mould, and wash it regularly for best results. Apply a stain or sealer every few years to maintain and preserve the beauty of the wood. Regular maintenance will keep your wooden deck in great shape as time goes by.

How much does it cost to build a deck – how do you estimate

Estimating costs to build a deck begins with good planning. Materials, tools and delivery all add to the cost. Accurately estimating your materials and having a good plan in place are all factors to consider. So, how much does it cost to build a deck? Read on to find out.

The materials for a new deck are not the only cost involved and depending on the size of the deck, the project can cost thousands of dollars. Accurately estimating costs to build a deck depends mainly on good project planning.

Planning: How much does it cost to build a deck? First check to see if you will need a permit to build/permission from the homeowners association where you live. Make a detailed plan for your deck that includes the footings, posts, framing, decking, stairs, railings, and deck skirt. This will be required for the permit application and will aid you in calculating what materials will be required.

Graph paper is a good choice for handmade drawings or use one of the many inexpensive deck programs that include a bill of materials.

Materials: Estimating costs to build a deck begins with the cost of the materials. Make a bill of materials list starting with the footings and working your way up. Calculate how much concrete you will need and the cost of cardboard forms, post brackets, fasteners, and posts. Don't forget to include gravel or stone delivery and landscape cloth for under the deck.

Framing materials include ledger boards, which attach to the house, joists, rim joists, beams, stair stringers, joist hangers, stringer hangers, post to beam brackets, railing posts, nuts, bolts and washers, lag bolts, screws and bracket nails.

From your drawing, determine the length of all the pieces and the quantities. The fasteners and brackets will add substantially to your budget so estimate accurately.

Determine how many deck boards you'll need and their length. Don't forget you'll use the deck boards as stair treads. Remember to include the fasteners, especially if you use the new composite lumber.

Railing sections typically include an upper and lower rail and the balusters. If you're using a railing system, find out ahead of time if any special hardware is required and include that cost as well. Again, don't forget the fasteners.

Whatever you will use for skirting the deck should also be included in the cost. You'll want to finish the deck with a stain and sealer. Decide in advance what you want to use to include the cost. You'll probably need more than advertised to coat the deck the first time so be sure to add in extra.

Tools: Some tools to rent include an auger for digging the footings and a cement mixer for mixing the concrete, both well worth the additional cost for a half-a-day rental.

On the hand, you'll want a meter long level, plumb bob, mason line, tape measure, circular saw, drill, bits, screwdriver bits, squares, post level, hammer, wooden stakes, and assorted wood for temporary use just to name the basics. If you have to buy the tools, put the tools in the budget.

Bill of materials: Take your bill of materials and head over to the timber yard and hardware store. Find out how much each item costs and add it to the list. At home, total the amounts and your budget is nearly complete.

Over budget allowance: It's a rare project that doesn't have an unexpected cost or two: a board gets cut wrong, you decide to upgrade the railing system or an inspector wants a change. All cost money. Add an extra 10 to 15 percent onto your budget after estimating costs to build a deck. If you don't use it, you're lucky.

BRIGHT IDEAS

Readers share their time-saving, space-saving or innovative ideas

How to tile a wall: tips and tricks



Having recently retiled our bathroom, I thought I would share some of the tips I learned along the way:

1. To remove old tiles from a wall, the easiest thing to do is to smash one from the centre and then work out from there, carefully removing the other tiles in one piece.
2. It's essential to use an adhesive comb when applying adhesive to tiles. This creates air bubbles and allows them to bond to the wall without sliding off.

3. When drilling into tiles it's essential to use a tile drill bit or your tiles will smash, but if you're drilling into tiles already on the wall, you should use a dual tile and masonry bit, allowing you to easily drill straight through both.

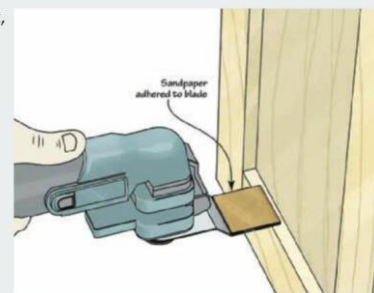
4. Tiles can be cut using a number of different tile cutters to score the tile, the tile can then be placed over another tile and simply snapped into the desired shape or size.

Anton Huxley, by email



A repurposed flush cutting blade helps reach hard-to-access sanding

For sanding those tight, almost unreachable parts of an assembled project, I repurposed a used flush-cutting blade from my oscillating multitool and converted the blade to a sanding tool. After removing pitch and grime from the old blade and



grinding off the teeth, I secured a piece of sandpaper around the end using spray adhesive. This "detail sander" makes quick work in tight spaces.

Marius Swanepoel, Cape Town

Watch your noise levels in the shop

An Apple Watch feature makes the watch vibrate and show a notification if the decibel reading exceeds a specific level for a set amount of time.

My Apple Watch features a Noise app that monitors surrounding sound levels. The watch vibrates and shows a notification if the decibel reading exceeds a specific level for a set amount of time. The app reminds me to reach for hearing protection if the noise level climbs.

The watch also serves many other useful functions in the shop. I can verbally ask it to solve math problems, set timers for finish or glue application, and convert measurements between metric and imperial units, just to name a few examples.

Andrew Spitz, Weltevreden Park



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Please include your name, physical address and a contact number (office hours). You may also include a photograph (300kb) of your bright idea (where applicable).

Please note: Winners' prizes may take up to six weeks for delivery and are sent by the prize sponsor. Prizes are not exchangeable.

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Congratulations to Anton Huxley who wins a Tork Craft Angle Grinder AG 115B -TC20110 from Vermont Sales.



Greet your ghostly and goblin guests with these cute little glowing jack-O-lanterns

This is quite an easy project for the young ones, but they will need some supervision, especially when it comes to handling the glowsticks.

First wipe the jars down with a soft cloth and rubbing alcohol to remove fingerprints. I then used masking tape to completely cover the jar.

Using a black pen or something similar, I drew on some creepy faces and carefully cut the faces out using a razor knife. Next, I sprayed the jars with flat black spray paint (two coats did the trick for me). After the paint was dry, I carefully peeled the masking tape off.

To make the 'glow' I used one glow stick for each jar. Break the glow stick to activate the chemicals and then carefully cut the top off the tube. Pour the liquid into the jar and seal it up, and then dispose of the empty glow stick carefully. Now just swirl the liquid around inside the jar to coat the inside.

Caution: Glow sticks contain chemicals that should be handled and treated with respect. Most glow sticks contain a small glass vial inside the plastic tube that contains a mixture of hydrogen peroxide in phthalic ester. Outside of the glass vial is another chemical called phenyl oxalate ester. As you can imagine, these are not great if ingested or if they get on your

skin, into your eyes etc, so please take care and make sure that you did this part of the project rather than the kids

These lanterns lasted for two hours from the time I poured them until they went out.



1 Gather and clean your jars



2 Wrap them in masking tape



3 Draw the design of your choice



4 Next, spray with black paint



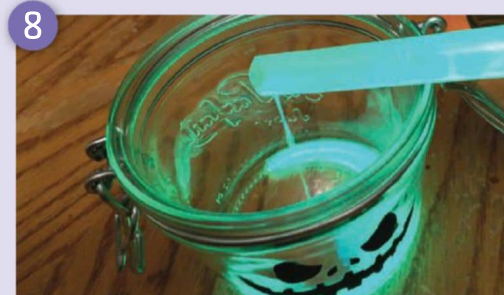
5 Once dry, cut out your design



6 Gather your glowsticks – one per jar



7 Carefully cut the glowsticks once activated



8 Pour the liquid carefully into your jars

ASK OUR EXPERTS

Our panel of experts answer your questions on DIY problems

Repairing chewed wooden doors?

I have some wooden doors in my property which have been badly chewed on the bottom edges. Can anyone please give advice if it's possible to fix this myself, and if so the best products to use? I have a sander already.

Thank you in advance for any help you can give!

Alan Norris, by email

Ed replies: Looking at the state of the doors it is probably better to fit new ones. If you want to try repairing them, however, buy some white 2-part filler. First mix small quantities so you understand how to use it and how quickly it sets. Fill and then shape with a coarse file and sandpaper.



Can I TIG weld aluminium with DC using Helium as a gas?

I know that aluminium is only welded in AC mode because of the unique metal properties that require cleaning and penetration to be both performed simultaneously and the alternating current can do that but I do not have an AC TIG machine available at the moment.

I remember back in the day when an old friend who was teaching me TIG welding long ago talked about how you can use DC machine to TIG weld aluminium but if you use helium as the shielding gas. I did some searching but I failed to find a detailed info about it at www.weldingpros.net/how-to-tig-weld/. I found this article linked to one reddit thread about DC welding aluminium but even that article only states that it is possible but without further details. It does say that in order to do that you need to weld thick aluminium which is exactly what I need to do so it did give me some reassurance. I need to weld two 20mm sheet metals to form an L shape beam.

I have a pretty good DC TIG welder available on me. It has over 200 Amps which means that it can handle the thickness with ease. I also have a big cylinder of helium available but I am not sure if this is something that I can do.

If anyone here had an experience like this I would be very grateful if you could share it with me. How did the metal behave? Did you have a clean or a dirty contaminated weld? Did the oxidation from the aluminium surface go under the puddle?

Ron Howarth, Germiston

Ed replies: The answer is no. DC doesn't work with aluminium; this requires AC welding, which is done by TIG. Yes, what you want to do may be possible, but it'll require a different electrical source than the one that comes in your standard home garage or workshop. You can electrocute yourself with AC or DC voltages – just not both at the same time!



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Our winning query comes from Geoff Hollingdale who wins a subscription to *The Home Handyman* magazine for a year.

How do I work out the compound angles?



In the project, intended for DIYer's learning some basic woodworking skills, the pieces required basic half lap joints using a back saw and chisels, without access to a mitre saw. The desirable outcome would be to have the ends which sit on the floor and the ends which support the glass tabletop cut such that the ends are 'flat' rather than pointed.

Given that only a few basic hand tools are available, and that the angles at which the legs are sitting at 30° and 60°. to the floor and tabletop, what simple method can be used to calculate the compound angles required, and given that each piece can be clamped in a vice to hold the piece prior to assembly, what approach would be suggested to end-up with an evenly cut end?

Geoff Hollingdale, Ferndale

The Home Handyman contributor, Denis Lock replies: I would not try and calculate the angles. Firstly, I do not remember enough trigonometry to do so. Any calculation assumes that the structure is very accurately built. This not the case and in practice the desired angles will differ from the theoretical calculations. More importantly as the compound angles are not going to be cut on a compound mitre saw there is no need to know the numerical values.

I would use one of my fundamental woodworking philosophies: Gauge don't measure. I would dry fit the assembly, place it on a flat surface and using a parallel strip of an appropriate thickness mark the required angles (as lines parallel to the flat surface) directly on two adjacent faces of each piece. You can now cut the disassembled pieces placed in a bench hook with a tenon saw (or preferably an equivalent Oriental pull saw) working to the lines just drawn. This

will provide excellent practice in the use of a hand cross-cut saw. I would dry fit the assembly again, turn it over and mark the pieces to cut for the top.

Geoff Hollingdale responds: Thank you Denis, I did more or less what you described. Begin by wrapping 25mm wide masking tape around the ends of each leg. Find a flat surface to work on; I used a scrap Formica faced kitchen cabinet door. Using a 10mm thick strip of wood, mark, with a pencil, a line around the ends. The resulting compound angle is a bit difficult to wrap your head around as it affects the side of each face of the leg. Deciding how best to cut the angle is another challenge.

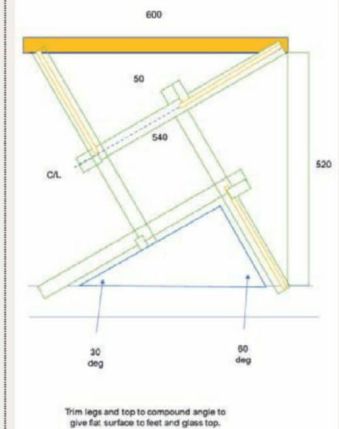
Trying to hold a tenon saw to cut the piece off of the leg is not easy. Definitely the best tool for the job is a Japanese Dozuki saw. My solution for the 'pockets' of the learners is a 24 TPI hacksaw blade mounted in a hacksaw blade holder such that it cut on the backward stroke.

A final touch to complete the compound cut was to mount, using double sided tape, a square (say 120mm x 120mm) of 120 grit sandpaper on the piece of Formica

faced chipboard. Using some 'elbow grease', holding and rotating each cut end on the sandpaper gave a smooth finish to the compound cut end.

The final stage is to place the assembly on a level surface, i.e., the floor, and with the top mounted, check with a level to see if it is 'level'.

Certainly, for the beginner, it's a good exercise in measuring and cutting accurately.



Denis Lock continues his discussion on the use of man-made boards.

EDGING MAN-MADE BOARDS

In my last article I noted how I had changed from a solid-wood bigot and described two projects built almost entirely from man-made boards. The major benefits were ecological and economic. Man-made boards utilise wood material that would otherwise have gone to waste. The cost per square metre of 16mm man-made board is from one fifth to one half of the cost of 25mm solid wood. From a woodworking standpoint the advantages are many: stable material, available in wide widths (no edge-to-edge joining of 150mm boards) and minimal surface preparation. There is, however, no free lunch and there are also disadvantages. The major disadvantage is that exposed edges can be ugly, weak and highly absorbent.

One can't argue: the edges Photo 1 (chipboard) and Photo 2 (oriented strand board – OSB) are ugly. Can you believe that somebody would build a drawer as seen in Photo 1? These edges need to be covered with some material that matches or complements the face of the boards. For some applications the edges have to be waterproofed and for some they have to be strengthened.

The board supplier will edge, at a cost, using a 1mm or 2mm plastic veneer. This assumes you have an exact cutting list as once the boards have been cut to size and edged there is no going back for last minute changes. The DIY'er can buy iron-on edging (1mm thick) and with a hot iron and a sharp knife do a pretty good (though generally not long-lasting) job. Iron-on edging is banned in my workshop. The professional, who needs a lot (and I mean a lot) of edge banding can invest in a portable edge bander. Photo 3 shows the Festool edge bander – a very clever and very expensive tool. I do most of my edge banding using solid wood. I am after all a woodworker. Let me take you through some examples of my projects.

A raw plywood edge can be attractive (Photo 4) if the material is high quality and without voids. Most plywood edges, however, need further treatment. Medium density fibreboard (MDF) has pretty good edges. The frame for the backrest of the storage bench featured in my last article is made of MDF. The edge treatment in this case consisted of flush trimming (it was laminated from three pieces of MDF) with a router followed by a light sanding and then painting). You can see in Photo 5 that the edges have turned out well. The backrest is not subject to major wear and tear, so I am happy with the weaker edge (weaker than solid wood) of MDF. The same is not true of the three lids (which get their share of wear and tear), and these have been edged with solid wood and then painted (Photo 6).

Photo 7 shows a painted drawer of a bedside pedestal. Other than the drawer pull it is constructed entirely from 6mm MDF (the bottom) and 16mm MDF (the rest). I was not happy with the weaker edge of MDF, and I added a 6mm hardwood edge around the false front and to the tops and bottoms of the drawer back, sides and front. After painting the edging is not obvious. Cupboard shelves made from melamine-faced chipboard definitely need edging. We don't want the shelves looking like Photo 1! If the shelf is anywhere near a sink the edges also need to be waterproofed. Photo 8 shows a shelf with a painted 6mm hardwood edge. This solves the aesthetic requirement and the potential water problem.

Thus far my examples have had the hardwood edging painted. Let's have a few examples where the natural beauty of the wood is not hidden. Photo 9 shows cubby hole units behind a bedroom door. The two units are made from 16mm white-melamine faced chipboard. All of the exposed chipboard edges have been covered by a 6mm red oak edging. This edging was

>> Denis Lock



Exposed edges

carefully varnished (no varnish on the melamine) and provides an attractive contrast. Photo 10 is a kitchen unit whose main function is to provide two pull-out disposal bins: one for recyclables and one for compostable materials. It is also made from 16mm white-melamine faced chipboard. Once again 6mm red oak provides the edging and a visible contrast.

The examples of edging thus far have been of raw man-made board (MDF) that was subsequently painted and of chipboard faced with white melamine. Let's now look at some examples of edging boards faced with a solid-wood veneer. The tall boy seen in Photo 11 is built almost entirely from veneered chipboard. The drawer fronts, cabinet sides and cabinet top are made from 16mm chipboard faced with a real cherry wood veneer. The drawer sides and back are made from 16mm chipboard faced with white melamine. All off the edges, including the drawer sides and back are edged with 6mm thick solid cherry. Does the edging stand out and hit you in the face? No it doesn't. At first glance it looks like solid-wood construction. The lesson I learnt from this project is that the 16mm thick sides and top make it look like a knock-down flat pack piece of furniture.

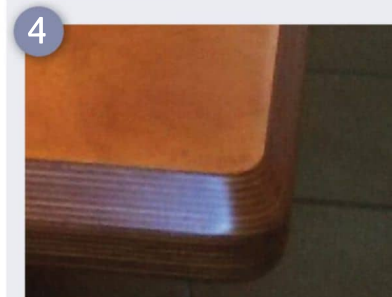
I solved this problem in the next piece of furniture. The oak printer stand seen in Photo 12 (made of red oak veneered chipboard) also contains very little solid wood. The sides and top of the unit have been thickened to 28mm by the addition of 12mm MDF strips on the inside faces and the width of the edging increased accordingly. This project does not look like flat-pack furniture! The right side of photo 12 is a closeup of the drawer fronts: 16mm oak-faced chipboard edged with 6mm solid oak. The corner joints where the edging meets are simple butt joints in this project. As shown in Photo 13 the corners can be mitred. This gives a neater finish. In photo 11 and photo 12 the edging was applied to pre-veneered board, and it is obvious (but not at all unattractive) that the board has been edged. There is a different approach. Here the edging is applied to raw board and then the board plus edging is covered with a layer of veneer as shown in photo 14. I have this veneering done by a commercial veneering service or what is also called a board upgrader. The result of this approach can be seen in photo 15. I believe that the extra cost and effort of this technique is more than repaid. The ugly/weak



Oriented strand board



Festool edge bander



Plywood edge



Patio storage bench



Edged lids



Painted drawer



Shelf edge



Cubbies behind bedroom door

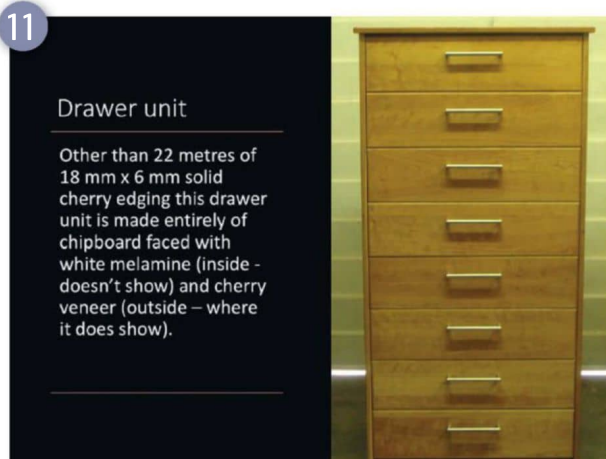
edges of the man-made board are hidden by solid edging but the edging itself is not apparent. Another advantage of this approach is the wonderful figure (grain pattern) match achieved over the three drawer fronts.

I use a lot of MDF to build jigs and accessories. There are times when I need a harder-wearing edge than that of MDF. In these cases, I use a hardwood edging the same as I have already described for a number of furniture projects. Photo 18 shows 6mm oak edging on a router table top. This protects the edge of the Formica laminated to the two faces of the router table top.

Have I motivated you to experiment with edging man-made boards? I will share the construction tips and tricks I have learnt over the years in my next article.



Waste disposal unit



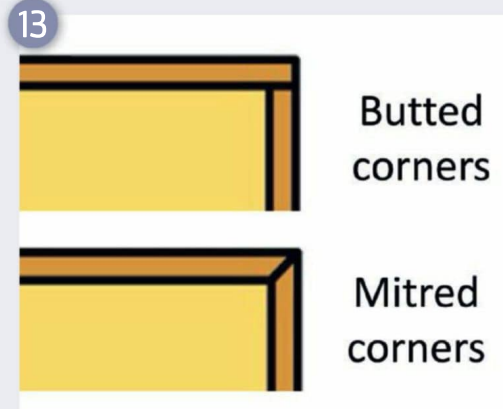
Tall boy

Drawer unit

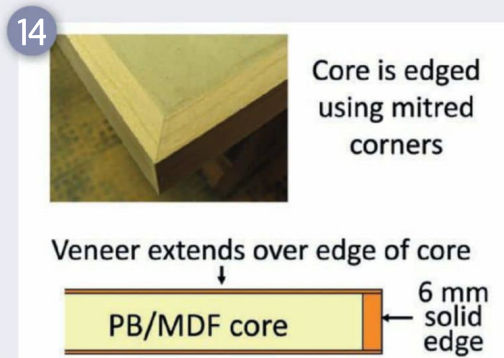
Other than 22 metres of 18 mm x 6 mm solid cherry edging this drawer unit is made entirely of chipboard faced with white melamine (inside - doesn't show) and cherry veneer (outside - where it does show).



Printer stand



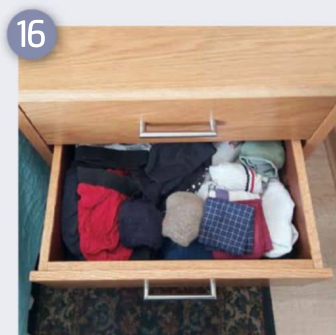
Butted vs mitred corners



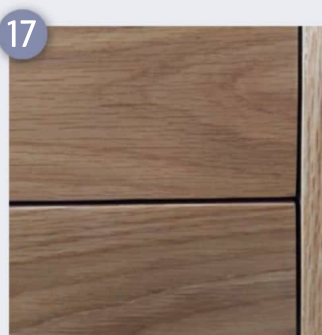
Veneer over edging



Bedside pedestal



MDF hidden



Precise reveals



Edged router table top



ABOUT DENIS:

Denis Lock runs a woodworking school and shop. He can be contacted at denis@tacazze.co.za or 082-267-5948. Visit his website at www.routingwithdenis.co.za

WOODWORKER'S CORNER

Sharing techniques, ideas and a love of wood

Working with wood in warm weather

Moisture is the primary reason why wood expands and contract. Let me explain: Wood is a hygroscopic material because it constantly changes to match the external atmosphere changes.

Wood is a porous material and will always try to match its internal humidity levels with external humidity levels, a state called the Equilibrium moisture content (EMC). As a result, the wood fibres swell as it absorbs moisture and shrink as it releases it – wood expansion and contraction.

If its internal humidity level is lower than that in the surrounding, the wood fibres will absorb moisture and expand when it reaches their saturation point.

But with low air humidity in the surrounding, the wood loses moisture and shrinks. However, note that wood moves with changes in the relative humidity, not just with any alterations in humidity levels. By relative humidity, I'm referring to the ratio of absolute humidity (actual moisture content in the air) to the maximum moisture content at a specific temperature.

Warmer air temperatures will hold more moisture, explaining why absolute humidity can change while the relative humidity remains constant. Conversely, should air temperature rise along with absolute humidity, relative humidity remains the same and, therefore, no movement in the wood.



Finishing in hot or humid weather

It seems that one of the topics we get a tremendous amount of emails about is when folks are having issues due to the heat and humidity. A huge number of woodworkers spray their finishes outside and in doing so, are at the mercy of uncontrolled temperatures. Spraying in these conditions can be risky business.

Most finishes simply do not like to be force dried. When spraying in direct sunlight the surface of the finish will skim over leaving the underlying finish still soft. The finish can then blister; this is most predominant in solvent base finishes. The surface dries and the air that is trapped in the pores of the wood cannot readily escape.

As the air rises it must now break through the dried film and forms a blister. It is a situation where the direct sunlight is the culprit and being able to shade the surface makes a huge difference.

Another issue as a result of the surface drying rapidly is called "blushing", particularly in hot humid areas. Again, the moisture is trapped within the finish as with blistering. The solution

once again is to shade the surface from direct sunlight. If using compressed air, make sure your air is dry and filtered. Turbine systems are the best solution to ensuring clean dryer air.

Lately, the biggest issue is being able to wipe on any non-oil dye or stain in hot/humid weather. Oil-based stains, because they dry so slowly, are usually not an issue. Gel stains, because of their heavier viscosity, dry quite rapidly. Water base stains and dyes can be very problematic. Alcohol/Lacquer dyes and stains can be all but impossible.

For oil base gel stains, have a cloth damp with mineral spirits ready. Work in as small an area as possible. The objective here is to be able to wipe the stain on and off before it sets. The mineral spirits will help to prevent the stain from drying as fast, but it can also produce a lighter colour so often two coats are required. Just be sure to let the first coat dry thoroughly or you run the risk of the second coat softening and pulling off the first coat.

Water-based dyes and stains can be controlled to some degree the same as the gel stain. Use a dampened applicator which can help, as well as working in as small a section as possible.

In the case of dyes, premixed dyes are not as good as powdered dyes that you mix yourself. Pre-mixed dyes have chemicals that speed the drying process, and they are not typically just mixed with water. Powdered dyes that you mix yourself, because it's simply water, seem to dry slower giving more work time.

Without question one of the best ways to apply a dye or stain in hot weather is to spray it liberally, again in as small sections as possible, then immediately wipe it back. The spraying allows for a rapid application of the colourant, thus giving more wiping time before it starts to set.

If spraying is not afforded, then you want a good stain pad; it will hold more liquid and allow you to cover more area faster.

Trying to take a brush or foam brush and apply a colorant in hot weather is all but impossible. The brushes simply do not hold enough material to allow you to evenly wet any sizable area. Just the short time of having to reload the brush is allowing the dye or stain to start to set.

You will also find that using paper towels to wipe off the excess is very beneficial. They absorb rapidly and allow you to wipe the surface quicker. To cut to the chase, the bottom line is you have to move quickly before any of the colorants begin to set. It's not a bad idea to have someone helping you wipe off almost as fast as you wipe on. The general rule of thumb of allowing the dye or stain to set for a few minutes simply put doesn't work in hot weather.

Does warm temperature affect wood?

Yes, warm temperatures affect wood, though indirectly. Warmer temperatures will adjust the humidity levels in the atmosphere.

Warm air holds more moisture, so most shrunken wood cells reabsorb moisture from the atmosphere and expand. Wood can expand and contract in moist warm temperatures. It all depends on the amount of moisture in the wood and the surrounding humidity levels.

Woodworking events at Hardware Centre

Join Bunny Croucamp and the Hardware Centre Randburg team and learn how to build a Braaiplankie. This will not be a project where you get the material and assemble the workpiece. In this project, you will receive a rough billet, and Bunny will teach the special techniques needed to turn this rough piece into a world-class Braaiplankie. You will cut the billet to size, plane the material and sand it until smooth. To finish off, you will use router jigs to cut the grooves and potholes. You will use the different tools to manufacture your

project and increase your Woodworking knowledge along the way.

A Braaiplankie is an essential tool for the expert braai enthusiast and is used to impress your guests around the braai fire. The finished Braaiplankie will measure 600mm x 300mm with a thickness of around 32mm. Best of all, after all the learning you will take home your Braaiplankie! All tools and materials for the project will be supplied.



Woodworking events	
Course objectives:	Available dates:
• Safety	8 October 2022
• Measure and cut	3 December 2022
• Planing with a thicknesser	Cost:
• Using router jigs	R400 per person
• Sanding to perfection	Where:
	Hardware Centre, Randburg, JHB
Contact: 011-791-0844	

HOMES BUILD



Building South Africa up with the re-introduction of Builders Cement

'Builders Cement', a locally manufactured private brand from one of South Africa's leading DIY retailers, officially re-launched nationwide at the end of August 2022. Available exclusively at all Builders stores in the country, this local cement brand offers customers exceptional quality and value.

"We know how much our customers trust the quality of our Private Brand products, and that combined with our favourable pricing structure, and local manufacturing, makes Builders Cement the right product choice for South Africans," says Munier Solomon, Marketing Operations Manager at Builders.

Builders' partners with local manufacturer

To produce and supply the cement, Builders has partnered with local cement manufacturer, Cemza. There will be two locally produced variants, both of which comply with the ISO 9001 and 14001 standards. The 32.5N bag will be available first and can be used for several applications including domestic concrete work to large building projects, as well as being cost effective for all masonry and plaster applications. A key feature is the fineness of this product which improves workability and cohesion. Later in the year Builders will roll out the 42.5N, which can be used for domestic general use and major developments, building projects, civil and construction concrete, mortar and plaster applications.

"Our capability to produce high volumes at an affordable price means all customers can reduce their operational costs without compromising on the quality," adds Solomon.

Builders Cement is easy on the environment

Concrete is the most consumed substance after water, and it requires high amounts of energy to produce. The environmental impact results in a carbon footprint that accounts for approximately 5%-8% of global CO₂ emissions, according to the International Energy Agency (IEA).

Because of this, Cemza's products have the lowest carbon footprint compared to other local manufacturers. With zero CO₂ emissions for clinker production (the backbone of cement production), they have the most advanced and efficient grinding mill in the country that is enhanced by slag substitution of anything between 50%-70% in its products.

This makes Builders Cement an environmentally friendly product. In addition, it is an innovative offering for customers and businesses who face high operational costs and price increases across the construction sector. It is produced locally, therefore offers better value for customers by saving them money and time.

For more information, visit www.builders.co.za

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Price valid until 31 October 2022

Many homeowners look for ways to increase the value of their homes and a common and efficient way of doing so is through upgrades. However, not all upgrades are equal and, whilst many will deliver on returns, there are some remodels that can work against you and could even make your home less desirable.

8 things that can lower your home's value

Some renovations will actually cost you money in the long run. Just because you regard something as an improvement doesn't mean that potential buyers will feel the same way – and you could significantly decrease the pool of potential buyers if you're not careful.

Outbuilding your neighbourhood

In other words, spending more than you can recoup in your neighbourhood. Every suburb has a ceiling price beyond which few buyers will go, so it's not wise to turn your house into the most expensive one in the suburb, especially in a tough market when buyers are spoilt for choice.

Wallpaper or textured finishes on walls

Both are difficult to remove, so think twice before using either to do more than just one feature wall. If potential buyers love the house but hate the walls, knowing that a time-consuming project lies ahead might cause them to decrease their offer.

Too much carpeting

Most buyers would be happy to have carpet in the bedrooms, even if it isn't quite to their taste, but carpeting throughout is likely to put off many people, especially as carpets are quick to show signs of damage. Conversely, hardwood floors in good condition can actually increase the sale price of a home.

Bright and bold paint colours

Bright and bold paint colours don't appeal to everyone and can even turn off a potential buyer who might lack a bit of vision. If you do love brighter hues and can't resist using them in your home, then it's advisable to give it a fresh coat of paint with more neutral tones before you put it on the market.

Amalgamating bedrooms to create a bigger room

This might seem like a good idea to a young couple with no children or to retirees whose children have left home, but reducing the number of bedrooms in your home isn't a good idea in terms of resale value. Most potential buyers will be families with children and, even if the bedrooms are small, having enough means each child can have its own room.

Removing closets

For most people, there is no such thing as too much storage space in a home and having more wardrobes and storage areas than other homes is, in fact, a big selling point. So, think long and hard before removing a closet in favour of another upgrade like increasing the size of a bathroom or bedroom as it can hurt your home's appeal and value.

A hot tub

Even more so than swimming pools, Jacuzzis are a big gamble. They take up space in communal entertainment areas, require constant maintenance and home buyers with small children might consider them a safety hazard. If you're really keen on having one, consider a portable tub which is easily removed and which you could potentially take with you when you move.

DIY projects

Unless you really know what you're doing, do-it-yourself projects might not save you money in the long run because work that looks anything less than professional will be perceived by buyers as shoddy workmanship as well as unfinished projects on which they will have to spend money.



ARTIFICIAL GRASS



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Both kits include Shear & Scissor sharpener and Secateur sharpener



For more product details, see individual rotary mower, secateur and shear sharpener pages

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