

The Home HANDYMAN

May/June 2019 • Vol 29 No 5



SA'S
ORIGINAL
DIY
MAGAZINE



MAKE A HAT STAND



RECYCLED ART BOT

Quick fixes for common household problems

- Cracks in the wall
- Replacing tiles
- Fix leaking taps

+plus

- Prepare your fireplace for winter
- All about abrasives
- Care for outdoor metal
- Make a hose reel



RSA R39.90 (VAT incl)
Other Countries:
R34.70 (Excl. tax)

Learn how to waterproof your roof

Driving through the river instead of taking the bridge?

Amarok can. Now with an 8-speed
automatic gearbox.



Volkswagen Amarok.
Greatest load capacity.

McCarthy Volkswagen **Wonderboom**

Cell: 083 488 8529, Tel: 012 567 9345



**Commercial
Vehicles**

CONTENTS

FEATURES

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

Address: PO Box 24938 | Gezina | 0031 | RSA

Office: 065 849 3264

Fax: 086 234 5026

Email: editorial@homehandyman.co.za

Publisher Hannes Lindeque

Associate publisher Allan Swart: allan@homehandyman.co.za

Editor Gregg Cocking - editorial@homehandyman.co.za

Feature writers André Gous, Annalien Grensemann, Catherine Reimers, Clifford Roberts, Kim Roberts, Kin Le Roux and Warren Schmidt

Sub-editor Margaret Chamberlain

Technical consultant Denis Lock

ADVERTISING REPRESENTATIVES

Wilma Lindeque 065 849 3264

Email: advertise@homehandyman.co.za

Yvonne Botha 082 563 6685

Email: yvonnebotha@homehandyman.co.za

Ruth Schultz 083 583 5243

Email: ruth@homehandyman.co.za

HOW TO SUBSCRIBE

Email: subs@homehandyman.co.za

Fax: 086 234 5052

Online www.homehandyman.co.za

Layout & design dee@stormdeezigns.co.za

Printing House of Print | 011 474 8750

Distribution Republican News Agency | 011 248 3536

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.

The views expressed in this publication are not necessarily those of the publisher or its agents. While every effort is made to ensure the accuracy of the contents of this magazine, neither the editor nor the publisher can be held responsible for any omissions or errors. Images used are for illustration purposes and are not endorsed by *The Home Handyman*. Every care has been taken to ensure that all the information and projects presented in this publication are accurate, reliable and safe. It should be noted, however, that the ideas for design and product use are presented as suggestions only! The editor strongly advises that the reader check local by-laws and consult a qualified professional before undertaking any project and cannot be held responsible for any loss, damage, injury or death resulting from any information contained here.

Copyright: *The Home Handyman*, 1994. Copyright is expressly reserved and no part of this magazine may be reproduced or transmitted, in part or whole, in any form or by any means, electronic or mechanical, including photocopying, recording or any information storage or retrieval system without prior permission of the publisher. All enquiries regarding editorial correspondence, manuscripts and photographs should be directed to the editor.

12 Solutions

Warren Schmidt offers solutions for common DIY problems

19 Woodworking

Learn how to create a simple laptop stand

20 Vehicles

A review of the Changan Minivan

22 Abrasives

All about sandpaper

24 Outdoor

Care for outdoor metal and steel

26 Swimming pools

Combat load shedding with a pool cover

28 Roofs

Find out how to waterproof your roof

31 Techniques

Jazz up an old picture frame

34 Metalworking

Make a coat and hat stand

38 Woodworking

Use your offcuts in a new way

40 Metalworking

Make a DIY air compressor hose reel

44 Fireplaces

Prepare your fireplace for winter

46 Energy efficiency

Going off the grid

50 Young DIY'er

Make an Art Bot with the kids

 www.facebook.com/TheHomeHandymanmagazine

 @TheHomeHandymanmag

 <https://za.pinterest.com/homehandyman/>



17

REGULARS

6 Off the shelf

All the latest products for the DIY'er

8 Voice your views

Your chance to air an opinion

10 DIY matters

News, views and reviews from around the globe

49 Bright ideas

Readers share their innovative time-and-space saving DIY ideas

52 Ask our experts

Your DIY queries answered by our panel of experts

54 A woodworker's diary

Denis Lock shows how to use your woodworking skills when hanging bathroom fittings

58 Woodworker's corner

Sharing techniques, ideas and a love of wood

61 Coffee corner

From our workshop to yours

64 Tailpiece

Annalien Grensemann talks about the therapeutic nature of DIY



22



38



44

Competitions & giveaways

8 **Win** a Makita M9203B finishing sander

49 **Win** a Tork Craft 172 piece rotary mini tool kit and a 135W Rotary tool

52 **Win** a Upat sponsored hamper including a toolbox, tape measure, spirit level and more

The Home HANDYMAN



www.homehandyman.co.za

2019 SUBSCRIPTION FORM

Subscription Fees:

South Africa	Printed	Digital
Back Copy	R35.50	R27.95
6 issues	R209.00	R169.00

Neighbouring countries: R528.00 for 6 issues

Overseas by Air Mail: R618.00 for 6 issues

Subscription fees are valid until 31 December 2019

Subscriber's details:

I would like to receive a printed/digital copy.
(Please indicate)

Start subscription with the issue?

Name:

Email:

Postal Address:

.....

Postal Code: Tel:

Gift subscription from:

Tel: Email:

Direct Deposit / EFT Payments:

EFT - (Electronic Fund Transfer) directly to our account:

ABSA Bank

Branch Code: 632 005

Cheque account: **BB Print** 404 881 8651

Reference: "Sub + HH + surname"

(example SubHH-Lindeque)

Fax/Email proof of payment plus this completed
subscription form to 086 234 5052.

**Please Note: There is an additional deposit fee of R39 if
payment is made in CASH.**

Contact us:

Email: subs@homehandyman.co.za

BB Print | PO Box 24938 | Gezina | 0031 | Fax: 086 234 5052



Find us on
Facebook

FROM THE WORKBENCH

It feels good to be back! Fourteen years after sending my last issue of *The Home Handyman* to the printers, I am back in the editor's role and I couldn't be happier.

However, so much has changed...

In 2005, your cell phone was just that – a phone. You called people, you sent an SMS and you took fuzzy photos on a 1-megapixel camera. Nowadays, well, your phone is an essential part of everyday life, an incredibly technical piece of equipment which has replaced the alarm clock, diary, map book, CD collection and video camera we used in 2005.



And it's not just the technology that has changed. In South Africa, we have our fourth president in 14 years, and in America, Donald Trump (imagine saying that in 2005...) succeeded Barack Obama who succeeded George W. Bush, who was in office in 2005, to become the American president. Climate change is an accepted reality, and Facebook (which was only founded in 2004) along with a host of other social media sites and apps, has changed the way people connect and interact with each other. The next step? Artificial intelligence and virtual reality – two concepts which were merely the fodder for sci-fi films in the early 2000s.

Imagine trying to explain to somebody in 2005 what Bitcoin is? And how Uber has changed the way so many travel? Or how a family, who are famous for being famous, somehow became amongst the most influential people in the world (I'm looking at you, the Kardashians). Despite all this change, DIY, however, is still the same. Yes, the power tools have better ergonomics, additional features and longer battery life, but the simple joy of creating something with your own hands, or fixing something yourself without having to pay someone else to do it, is the same.

Fittingly then, this issue of *The Home Handyman* deals with solutions to common household problems. We feature an article to help you deal with all those nagging problems around the home which tend to accumulate over time, including cracks in the wall, leaking taps, leaking toilets, sagging cupboard doors and so much more. Elsewhere, Denis Lock explains how to use your woodworking skills to hang bathroom fittings and another article explains the ins and outs of waterproofing your roof.

I hope you enjoy the read, and if the feedback we received at *The Home Handyman* stand at the recent Hobby-X Joburg show is anything to go by, readers are delighted to have the magazine back. We encourage you to share your ideas, projects and thoughts with us so that we can continue to grow from strength to strength.

Enjoy,

Gregg

Bright

The Woodoc Way



Introducing new Woodoc Colours BRIGHTS!

Suitable for use with Woodoc Water-Borne- and Solvent-Based Sealers.

Our website has full details and "How-to-do"-advice.

Use our new **Woodoc Wizard** to help find
your perfect sealer. www.woodoc.help



Woodoc[®]
FOOD FOR WOOD™

Woodoc Customer Care: For friendly, personal assistance and advice, phone Toll-Free 0800 411 200,
during office hours. Visit www.woodoc.com Woodoc WhatsApp +27 66 302 4702

OFF THE SHELF

Your guide to the latest products in the world of DIY

Professional sawing

Powerful high-torque motors for maximum sawing power and rapid work progress

It is not just robustness and durability that matter when sawing in timber construction, but also performance, efficiency and precision. Festool offers a comprehensive range of saws for versatile applications for these exact requirements: from circular saws with guide rails and cross cutting guide rails, to pendulum jigsaws, sword saws, sliding compound mitre saws, through to bench-mounted circular saws for mobile use and a huge range of drilling machines. Always equipped with powerful, reliable motors or powerful battery packs with AIRSTREAM technology for cordless versions.



With the HKC 55, HK 55 and HK 85 circular saws, Festool offers a powerful generation of pendulum cover saws with a flexible FSK cross cutting guide rail system in three lengths: 240, 420 and 670mm. Both the HKC 55 cordless circular saw and the HK 55 and HK 85 circular saws can be combined with the FSK cross cutting guide rails. A quick fastener makes it possible to quickly connect and disconnect circular saws and cross cutting guide rails. Uniform cross cuts can be made quickly and with a high degree of repeat accuracy thanks to the adjustable angle stop for angled cuts between 0° and 60° in both directions – for example when cutting panel materials, roofing boards, shuttering boards and construction timber to length.

With powerful high-torque motors for maximum sawing power and rapid work progress, the circular saws have been designed for universal use in the workshop, on the construction site and for assembly. As the guide wedge is integrated in the spring-loaded protective cover, it enables the user to make safe, unhindered plunge cuts. Both the cordless HKC 55 and the HK 55 cable variant are ideal for series of cuts up to a cutting depth of 55mm. Meanwhile, the HK 85 ensures rapid work progress with its 2300W motor. The ability to convert to a groove cutter for transverse and longitudinal grooves adds to its range of applications. The proven TS 55 circular saw and the TSC 55 cordless variant are popular in the industry for precise plunge cuts.

For more information, visit www.vermontsales.co.za or call 011-314-7711

Chalk paint

Two new neutral colours added to popular paint range

Annie Sloan is widely recognised as the leader in the decorative paint revolution which has taken the world by storm over the last three decades. Now Annie Sloan introduces two new neutrals to the Annie Sloan Chalk Paint Palette 2019, with the launch of Chicago Grey and Svenska Blue into the South African market. Annie says: "Neutrals are the backbone of any colour scheme," and Chicago Grey and Svenska Blue are bound to inspire creativity. These beautiful neutral tones work fabulously with each other as well as a base for other colour schemes.

Chicago Grey is a cool, fresh and modern grey, with a hint of blue. Suggestive of the architecture in Chicago. A perfect neutral for industrial interiors, or muted Scandinavian styling. There are very few Chalk Paint™ colours this new neutral doesn't work with. Here a scheme including Paloma, Old Violet and Louis Blue works well with the pattern, stripes and texture of the fabric selection. Svenska Blue is a traditional Swedish neutral rather than a French-inspired shade. This crisp and cool toned blue-grey is evocative of the colours seen throughout Swedish manor houses in the 17th and 18th century. This design works with French Linen, Country Grey and Coco which balances the warmer olive tones in the fabric choice.



For more information, visit www.anniesloan.com or www.chalkpaint.com

Powerful jig saw

The Makita MT Standard Duty Industrial M4301B Jig Saw is robust, strong and powered by a motor that produces a powerful output of 450W

The M4301B is truly versatile and able to cut many different materials (wood, steel, metal and plastics) with its straight cutting and three orbital settings. By fitting the right blade for the job the saw's cutting performance is not compromised. An adjustable steel base plate offers good blade support and makes for easy angle cutting ranging between 0 - 45°. The blade holder accepts B-type bayonet blades, fitted as standard. The variable speed control allows the operator to adjust the blade speed according to the material being cut. Depending on the type of material, up to 3 100 strokes per minute can be achieved. Wood 65mm thick and steel 6mm thick can be accurately and flawlessly cut. A very useful stroke of 18mm is achieved during cutting. Weighing 1.9kg with a 2m power supply cord the M4301B provides the user with Simple Solid Power.

For more information, visit www.makita.co.za or call 011-878-2600



Limited edition measuring kit

A collectable kit for all your measuring needs

To commemorate 130 years of existence across the globe, with 70 in South Africa, Stabila is launching the limited edition 80AU 1889 Series Measuring Kit, consisting of a 1m black spirit level, a 60cm yellow level, a 40cm white level and a 7cm Pocket Pro, which is ideal for checking electric boxes and other small-space items.



The kit is aimed not only at collectors who have been purchasing similar commemorative Stabila sets every decade, but is ideal for anyone who needs a full set of levels, from the bricklayer to the electrician. Those fortunate enough to obtain the kit can also purchase a yellow padded protective carry bag for safe and convenient transportation on-site.

It's a perfect gift for DIYers or those in the construction industry, whether just starting out or long-time professionals. The 80AU's precision is unquestionable, with a 0.5mm accuracy and improved range. It is also made from a thicker aluminium than previous levels, making it more robust.

Built on a history of developing and manufacturing innovative measuring tools, Stabila has gained a global reputation for accuracy and reliability. Uninterrupted success with a variety of technical designs and patents for 130 years has seen Stabila maintain its position as a global market leader in the spirit level sector, combining rules, spirit levels, and measuring tapes.

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

See your
product
in this
space!



The Home HANDYMAN
www.homehandyman.co.za

To advertise in
The Home Handyman's
Off the Shelf,
please contact Wilma
on 065 849 3264 or
e-mail:
advertise@homehandyman.co.za

VOICE YOUR VIEWS

Do you have any thoughts or comments on DIY issues?



Share your
opinion

**The Home
HANDYMAN**

www.homehandyman.co.za

Send us your views, ideas and opinions and you could win a Makita M9203B finishing sander.



Send your queries to:
editorial@homehandyman.co.za or
P.O. Box 24938, Gezina, 0031

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



Ernie Pagel

wins a Makita
M5802B circular saw

Prizes are not exchangeable

Ernie's DIY holiday house



The question always asked is, "Are you finished building your house/holiday house?" The answer is very clear – building a house is never finished. There are always changes that need to be made for one or other reason. In Afrikaans there is a saying, "Kan 'n mens nie so of so maak nie?" This is always asked by the wife, so my belief is that a 'mens' is a man.

I was asked if it was possible to build a room downstairs at our holiday home in Dwarskersbos and, yes, it could be done. I am fortunate enough that both my sons are in the draughting business and they offered to draw up the new plans for the extensions that were then approved by the local municipality.

In the meantime, local builders helped us build the concrete foundation and plant the poles for the deck for the extensions. This was completed over a weekend prior to us going to complete the extensions.

With the help of my sons, we built the deck that was also the cover for the new room. I consulted a well-known architect for help with the deck and how to waterproof it.



The deck was built in the normal manner except for the flooring, where weatherboard was the main footing. The weatherboard was sealed with a sealer and on top of this, fibre cement sheets were placed in the opposite direction to the weatherboard and sealed again. With the deck completely sealed, non-slip tiles were laid on top.

The railings were completed at home and transported to the holiday house. The extensions were built with wood, and learning from the original building process, we completed all the frames at home and transported them to Dwarskersbos.

We first put all the frames in place for the room, including the windows and the frames which were clad with loglap wood to complete the outside of the room. Only after this could we remove half of the sliding door and complete the inside of the house. This was done over a long, long weekend.

With the outside complete, we moved to the inside. The walls and ceiling were clad with Rhinoboard and the



floor was covered with laminated flooring. The cupboard was built in Cape Town, transported and installed.

With the room finished, my eldest son suggested that we change the stairs from stairs with a landing to a single set of stairs. They are a bit steep, but still according to the minimum requirements in the building industry.

With the drought in the Western Cape, the lush grass had been reduced to just about nothing. This broke my heart and we decide to sink a well point with the hope of finding some underground water. Luckily, this was reached at a level of only 2.8 metres. A pump was connected and the water pumped to a tank and from the tank via a pressure pump to the sprinkler system. The grass is a lush green again!

The pitbraai was completed and during the summer, this is the place where we all get together to braai or just sit around the fire and enjoy the tranquillity of the West Coast.

Ernie Pagel, by e-mail

Great job Ernie! Thank you for sharing the story with us. – Ed.



Thank you Home Handyman and Makita

Wow, look at what I've just received! A brand new Makita orbital sander. A million thanks to *The Home Handyman*, Makita and Rutherford. I will definitely add this to my collection of sanders.

I just cannot wait to test it out and I am sure that all the table tops I make with this sander will come out just grand. Thanks again



James van Heerden, by e-mail

Looking forward to seeing more of your work! – Ed.

Welkom terug

Ek was bly om te sien dat *The Home Handyman* terug is op die rakke. Ek hou daarvan om dinge self te doen, en as ek nie weet hoe nie dan vind ek uit.

Ek stel belang in toekomstige projekte en wil graag die volgende voorstelle maak vir oorweging.

A. My veselglas "splash pool" het opknappwerk nodig: Hoe om die verbleikte teëlpatroon bolangs te

vervang, en soos ek dit sien eers die onderlaag en daarna die teëlpatroon.

B. My vrou vra asseblief dat ek die T.V. kamer opgradeer. Gooi uit die ou staan tipe eike-houtkaste en installeer iets moderner. Bv. melamien tipe afwerking kaste /rakke onder met plat T.V. gemonteer teen muur. Dankie ook vir al die raad.

Theo Pretorius, by e-mail

Dankie Theo – ons wag vir die fotos! – Ed.

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 2019. All competitions close on 28 February 2019. 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.

Corobrik playing its part in looking after the planet

While many organisations are scrambling to meet increasingly stringent sustainability legislations, Corobrik continues to exceed expectations by implementing advanced technologies and forward-thinking approaches to keep ahead of the curve. One such sustainable undertaking is the rehabilitation of Corobrik's Rinaldo Road Quarry in Durban, an area which is now being developed.



"The daily effects of global warming are now impacting the lives of people everywhere, and it is both a moral and legal obligation for companies to implement green practices," said Musa Shangase, Corobrik's Commercial Director. "Corobrik's overriding principle has always been to minimise environmental impact wherever possible. This has seen us researching best practices and techniques

worldwide, and investing in the latest technology, all to reduce Corobrik's carbon footprint."

Shangase said that in July 2018, Corobrik's KwaZulu-Natal and Gauteng factories undertook comprehensive certification audits: "All of them retained their ISO 14001 (Environmental Management Systems) and OHSAS (Occupational Health and Safety Management Systems) 18001 certification," he explained. "We

envisage that within the next couple of years, our factories in the Free State and Mpumalanga will also achieve these certifications."

A sustainable production process has resulted in a sustainable product. The clay bricks rate highly with respect to their energy efficiency in terms of thermal properties and durability. "We have adopted the 'Good Business Framework'," concluded Shangase. "This programme broadens the depth of understanding and commitment within the business from a sustainability perspective. We will continue to research and invest in lowering environmental impact in production while creating an energy-efficient product that benefits the consumer."

For more information, visit:
www.corobrik.co.za

DIY boom in the USA

The home remodelling market in the US expanded by more than 50 percent since the end of the Great Recession, according to Improving America's Housing 2019, a new report released today by the Harvard Joint Center for Housing Studies. The report finds that, as homebuilding struggled to meet the nation's growing housing needs, spending on improvements and repairs to both owner-occupied and rental properties hit a record of nearly \$425 billion in 2017.

"With new construction slowly recovering from historic lows, 40 percent of the country's 137 million homes are at least 50 years old," said Abbe Will, Associate Project Director in the Remodeling Futures Program. "The aging of the housing stock has been a boon to the remodeling industry, with spending surpassing investment

in homebuilding every year for over a decade, and contributing 2.2 percent to US economic activity in 2017."

The steady uptick in house prices in many markets and the aging population are also driving increased spending on home improvements and repairs. Rising prices mean growing home equity, which provides owners both the incentive and

the means to undertake more and larger projects. Additionally, older households have higher homeownership rates than younger households, and many have the resources to afford major renovations, including accessibility modifications that allow them to remain safely in their homes as they age. Households 55 and over account for half of all improvement spending by homeowners today.





A new year with new hopes

The end of 2018 marked the start of new opportunities for fifteen learners from eMbonisweni and Hazyview in the White River region of Mpumalanga. They had enrolled in MTO's Silviculture Forestry Skills Programme, where over three months they were taught the ins and outs of the forestry industry, in particular, cultivation and care of trees until those are ready for harvesting.

One of the successful recipients of the programme is Faith Mbali Maseko, age 24: "Being part of the MTO Silviculture programme was one of the best things to happen to me. I always loved the environment and nature. But attending the skills programme gave me a chance to learn more about forestry, the environment and how to take care of our environment. I love being outdoors and close to nature. It gives me peace of mind. I've fallen in love with forestry and will surely pursue a career in it."

For more information, visit: www.mto.co.za

Bathroom shelves are back

The bathroom once used to be the ugly step sister of interior decor. Always hidden behind a door, it wasn't a room your host would invite you into when showing you around their impeccable home. How things have changed. Now, the bathroom is the one room in the home that homeowners are taking pride in by updating with top of the range fixtures and glam sanitary ware.

Just like the 'shelfie' phenomenon that's taken over Instagram, bathroom shelves are now a thing to behold. You'll find thousands of Instagram posts dedicated to the humble bathroom shelf – expertly curated to resemble something out of a decor magazine. Maybe it's time to have a rethink about your bathroom?



May highlights on the Home Channel: The Home Team

Join The Home Team, Leah McLeod, Anthony Scott, James Bawden and Julia Green, as they renovate and restore a run-down 1950s suburban home. With DIY tips, design and landscaping projects, The Home Team will help you navigate your next DIY project or renovation, while turning this ordinary home into a renovator's dream. Aired on Tuesdays from May 21 to July 26 at 7pm on the Home Channel.



The lucky Hobby-X winner is...

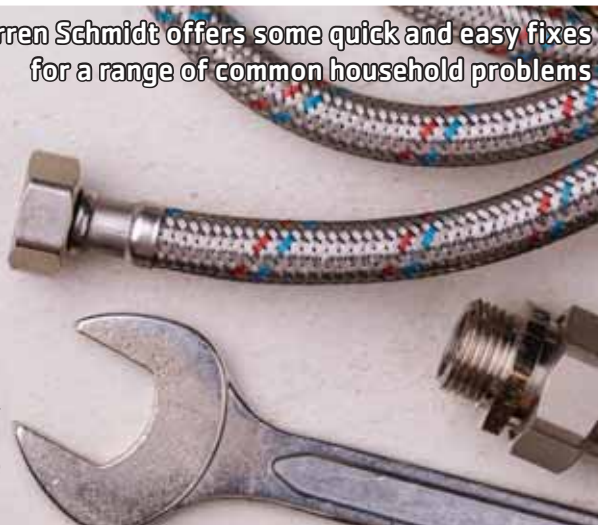
Congratulations to I.M. Ebrahim from Crown Mines who was drawn as the lucky winner of a Woodoc hamper valued at R1500. The winning entry was drawn from the host of entries received at *The Home Handyman* stand at the successful Hobby-X show which took place in March at the Ticketpro Dome in Northgate.



GET IT FIXED!

Someone once stated that it's the small things that count. Wear and tear on everyday household items is commonplace. The sooner you address these issues, the less you'll need to do later. All these repairs are within grasp of any competent DIYer. If you are stuck, many hardware retail outlets will offer you free advice on how to solve the problem and which products to use

Warren Schmidt offers some quick and easy fixes for a range of common household problems



Cracks in the wall

Cracks in the walls should not be ignored and the underlying cause must be identified. There is sometimes a bit of structural movement when new homes are built, but these should be minimal if the structure is of a high building standard. Expansion or contraction might cause small cracks in the wall. Damaged plaster can also occur when items of furniture or a stepladder bashes into the surface. Holes drilled for picture frames, shelving or curtain rails may also need to be filled once those items are removed.

If you repair a large crack and it reappears a few months later, you may have a more serious problem at play, such as structural movement. This can be caused by a weak foundation or subsidence. Moisture and damp penetration is another cause of failing plaster. Before trying to repair the damage, make sure that you have treated the cause of damp penetration (such as a leaking pipe or outside moisture ingress into the brickwork). Failure to fix the damp problem will simply result in further damage.

Fixing a small- to medium-sized crack or hole:

- Remove any loose bits of cement or plaster.
- Mix the correct filler at the correct ratio as per the manufacturer's instructions. Check whether the product is for indoor or outdoor use.
- Depending on the type of crack, use a medium to broad flexible steel scraper and push the filler into the crack. Make sure the filler is firmly compressed.
- Smooth off the excess filler. You can leave a millimetre or two above the wall surface, as this can be sanded flush later. Allow the filler 24 hours to dry.
- Once dry, you can sand the excess filler until flush with the wall surface.
- Paint the surface with matching paint or simply repaint the entire wall or room.



An acrylic sealer can be used to fill in any gaps or recesses between the ceiling, wall and cornices, as well as along door frames.



Preparing the wall surface prior to filling



Applying the filler



Sealing gaps with acrylic sealer



Seal sanitary ware

Blocked drain pipes

Every homeowner will have to confront the dreaded blocked drain at some point. As a general rule, blocked drains situated at basins or kitchen sinks are usually easy to sort out. However, if the blockage occurs further down in the main drainage pipes, a specialist company or plumber may need to be called in. Roots or broken pipework might be the problem, or else a compact blockage at a joint or bend.

The drainpipe underneath a kitchen sink or bathroom basin is usually made from 50mm PVC pipe. A rubber trap (either white or black) connects the drain to the PVC pipe. A plunger can be used to clear the blockage if it is not too compacted. Alternatively, chemical drain cleaner can be used to loosen up any blockages. Some of these drain cleaners are quite volatile and dangerous, so always read the instructions carefully and wear protective gloves. The rubber trap can also be removed by loosening the hose clamp (also called a jubilee clamp). If the blockage is further down in the 50mm PVC pipe, then a mechanical drain rod may be necessary to reach and break the blockage. These pipes should be accessible through inspection eyes found on the elbow bends. A piece of wire can also be useful for unblocking the drainpipe but be careful that it does not become stuck!



Worn flexi-hose

The flexi-hose is often responsible for another common household water leak. Each side has a rubber washer and if these are worn, water can leak from the damaged side. Very often, when these are fitted, they are overtightened and as a result, the rubber seal can tear. Another problem that may occur is when the flexi-hose is bent tightly near the ends causing the tips to break. Flexi-hose comes in a range of sizes, so make sure you use a suitable length to prevent having to force it in position when it is being connected.



*A serious problem!
Frayed flexi-hose water pipes
behind a built-in bath.
A round hole saw was used to
access the pipes and the hole
can be covered afterwards
using a fibreglass repair kit*



Den Braven Silicone-Sanitary
is ideal for sealing kitchen
and bathroom fixtures.

It is specially formulated for joints around kitchen tops, washbasins, and bath and shower cubicles where fungal and mildew growths tend to occur. Den Braven Silicone-Sanitary contains broad spectrum anti-fungicide and bactericides. It is waterproof, resistant to moisture and very durable.

It is easy to apply with an applicator and comes in a cartridge, in a choice of clear or white.



Den Braven Sealants

Do it right the first time

Available from hardware stores
www.denbraven.co.za
or call us on 011 792 3830

Please contact us for further product,
technical information and technical assistance



Leaking taps

Dripping and leaking taps are a common household problem that is generally easy to repair. The root cause is usually a worn rubber seal or washer. These can be purchased from any hardware or plumbing retail store. Taps (or faucets) come in a wide range of designs and styles and some of them might be difficult to work on. Be careful of the chrome surface as spanners and other tools can easily scratch or tarnish the surface.

Regularly inspect and clean the spout filter to remove accumulated grit and debris. These gritty particles can clog up the spout and cause back pressure when the tap is turned on. On most taps they are easy to unscrew using a shifting spanner. Once off, tap the gauze filter on a surface or use a nail brush to clean the filter. Rinse off with water and replace it back into the spout.



There are two small recesses on the tap spout filter for the adjusting spanner to grip onto



The spout filter clogged with debris



Small grit and sand particles clogging up the filter

Leaking toilets and troublesome cisterns

A leaking toilet is usually the result of a worn or frayed rubber seal situated at the bottom of the cistern. It can be easily seen inside the toilet bowl where a steady trickle of water flows down the sides. Left unattended, the wasted water can be quite significant.

The flush mechanism inside the cistern can break or disintegrate after time and the entire unit may need to be replaced. These components come in a range of sizes and designs, therefore make sure that you purchase a matching set that fits into the cistern. These flush kits are generally easy to install, but the instructions on the packaging can sometimes be difficult to interpret.



A push-flush toilet showing the cistern



Time to replace a broken flushing mechanism

A.SHAK

Est. 1958

0861 1ASHAK

0861 127 425

E: sales@ashak.co.za

www.ashak.co.za

TilePrime

The easy way to change the look of wall tiles, Melamine cupboards and other smooth surfaces!

First Prime ...

DIY
MADE
EASY

Then Paint ...

- Apply TilePrime with a brush or roller
- It is economical & easy to use
- TilePrime offers excellent adhesion
- Clean equipment with water afterwards
- TilePrime is dry after 24 hours
- Once dry it is transparent
- Apply paint over TilePrime
- TilePrime is compatible with most paints

Do not paint kitchen work surfaces!



1 Litre covers \pm 10 m²

Also available:

• AQUALOC • DRIKON • KONKLEEN • LIQUIDRAIN • PLASTERKEY • ROOFFIX • SCREWG00 • TILELOC and more!

Visit our website for further details on all these products and how they make DIY easy!

TIP:
For best results
clean surfaces
before priming.



CLEAN/DRY
SURFACES

TIP:
Use masking tape
to mask areas you
do not want painted.



REPAIR
CRACKS



APPLY WITH
BRUSH OR
ROLLER



How to replace a cracked or broken floor tile



Cracked, chipped and broken tiles can really ruin the look of your home, but there is also an added risk of water penetration into the tile installation. This could lead to further damage particularly if the tiled area is outside. Replacing the broken tiles immediately, helps to avoid this.

Before starting the project, check the surrounding tiles. If they sound hollow, there may be a bigger problem and it is advisable to get professional advice. Ideally there should be spare tiles saved from when the tiles were originally purchased, to be used as replacements for damaged tiles. Alternatively, use a similar tile that will blend in with the existing ones, or choose one with a pattern that can be installed as feature tile to create a new look for your room. Use the original grout brand and colour, or as best a colour match as possible to the existing grout colour to blend the new section with the rest of the tiles.

Use a grout rake to remove the grout from around the cracked tile all the way to the substrate. Carefully rub the blade back and forth in the middle of the grout joint being careful to avoid touching the edges of the adjacent tiles.

Once the grout has been removed, cover the surrounding tiles to protect them, then break the damaged tile with a hammer. Remove the fragments with a chisel, working from the centre out to avoid damaging the surrounding tiles. It is also important to remove any adhesive that remains on the substrate and make sure the surface is clean and dry.

Working carefully, remove the grout that remains attached to the sides of the adjacent tiles using a small chisel and hammer.

Prime the cleaned area with a slurry coat of latex-based primer liquid mixed with a cementitious powder primer, to improve adhesion of the new tile to the surface. When the slurry is touch dry you can install the replacement tile.





Mix the tile adhesive



Apply a quick-setting tile adhesive to the back of the tile

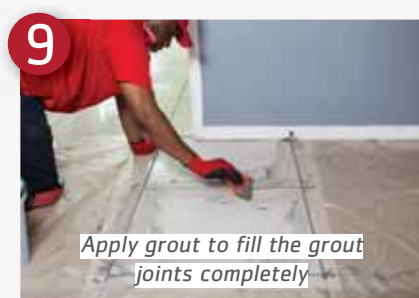


Use a spirit level to check that the new tile is level

Mix a small bag of quick-setting tile adhesive with a mechanical mixer to a creamy, lump-free consistency. Wait for 3-5 minutes and mix again. When replacing tiles, it is not always possible to apply the tile adhesive directly to the surface, in which case apply the adhesive in a solid bed onto the back of the tile, ensuring complete coverage. Gently trace the notched side of a floor trowel through the adhesive to create 'ridges'.

Position the tile in place, pressing down firmly. Use a spirit level to check that the face of the replacement tile is flush with the surrounding tiles. Scrape any excess adhesive out of the joints between the tiles before the adhesive dries and allow to dry for at least 6-8 hours before grouting.

Use a 2kg bag of wall and floor grout in the colour you have previously matched to the rest of the installation. Mix the grout mixture with a mechanical mixer then apply to the grout joints with a squeegee, making sure to fill the joints completely. Carefully clean excess grout from the tile face with a grout sponge then leave the grout to set fully before walking over the replacement tile.



Apply grout to fill the grout joints completely

For more information, visit www.tal.co.za or scan the QR code to watch their how-to videos on YouTube



THE SCIENCE BEHIND BEAUTIFUL SPACES

THE TAL MULTI-LEVEL SYSTEM FOR REPLACING CRACKED TILES

**1 STEP 1
PREPARATION**
Remove the cracked tile and
clean away the existing adhesive

**2 STEP 2
PRIMER**
TAL Keycoat +
TAL Keymix 5kg

**3 STEP 3
ADHESIVE**
TALFIX 5kg + TAL Bond +
Replacement tile

**4 STEP 4
GROUT**
TAL Wall and Floor
Grout 2kg + TAL Bond



Fitting curtain rails

Curtain rails can be replaced without too much difficulty.

What you will need:

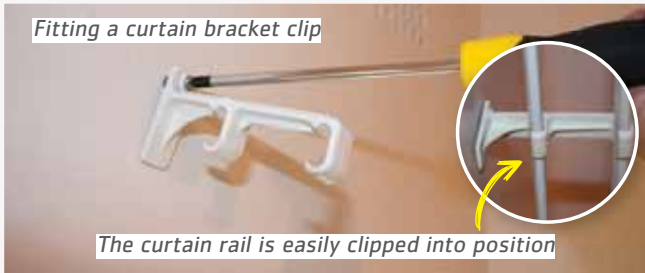
- Electric drill with 5.5 or 6mm masonry drill bit
- Wall plugs and screws
- Spirit level
- Pencil for marking

Fitting the rails

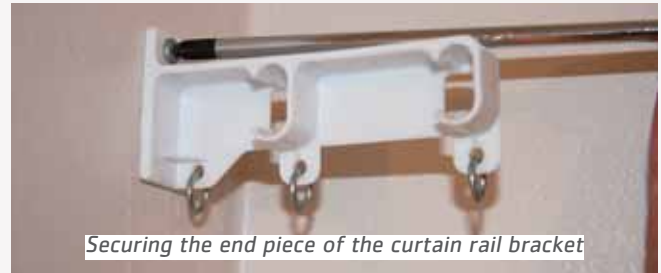
- Depending on the length of the curtain and weight factors, approximately 3 or 4 rail brackets will be needed. These must be spaced equally apart.
- Measure the length and height of the curtain and allow for some extra space below so that the curtain does not drag on the floor.

- Mark the position of the brackets and use a spirit level to make sure they are level. Drill the holes, fit the wall plugs and fasten the brackets to the wall.
- Clip the curtain railings into the brackets. It helps to insert the hanging clips beforehand and these can be kept in position using some electrical tape which can later be removed.
- Hang the curtains.

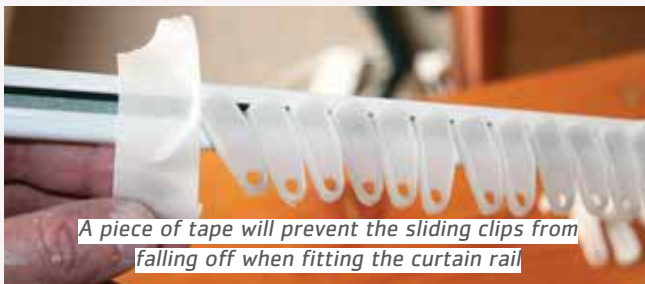
Fitting a curtain bracket clip



The curtain rail is easily clipped into position



Securing the end piece of the curtain rail bracket



A piece of tape will prevent the sliding clips from falling off when fitting the curtain rail



Attaching the curtain to the rail

The essential home toolbox

Every DIYer should have a well-stocked home toolbox, but if you're a first time DIYer, here is a list of essential tools that will see you through most repair jobs:

- Claw hammer – invest in quality and make sure the handle is solid and head well balanced.
- Hacksaw with assorted blades.
- Utility knife with adjustable blade settings (commonly referred to as a Stanley knife). Again – invest in quality.
- At least five screwdrivers – small and medium Philips or star-headed and small, medium and large flat headed.
- Shifting spanner
- Pliers
- Side-cutter

- Medium-sized spirit level
- 5m steel measuring tape
- Electric drill with assorted drill bits

The tools mentioned will see you through most basic DIY jobs, however, some useful additions include:

- Cordless drill/driver with set of different heads
- Pop-riveter
- Wire strippers
- Set of flat spanners
- Ratchet spanner and socket set
- Hot glue gun



Mobile laptop stand

One of our reader's shares his solution to a common problem: creating a neat and tidy space to work at and store your laptop

>> Rut van Broekhuizen

Cutting list

- Two upright legs (pillars) – 600 x 90 x 20mm
- Two cross base stands – 350 x 65 x 30mm
- One cross member – 550 x 110 x 18mm
- Two table top mounts – 360 x 55 x 20mm
- One melamine table top – 660 x 500 x 16mm

Consumables

- Sixteen 5 x 38 chip board screws
- Woodglue
- Four 50mm rubber castors
- Four M10 x 30mm or M8 x 30mm machine screws to mount the castors



When I became tired of packing up and moving my laptop from the table every time I used it, a stand similar to a PC stand became the option for me. The stand had to be easy to build and assemble and inexpensive as well. In this case I had plenty of ash around, which is nice to work and looks beautiful when polished or varnished.

Assembly

After cutting and sanding all pieces to a smooth finish, I cut the rebates and cut the round overs with the required router bits.

Glue and fit the upright legs to the base stands then glue and fit the cross member

to the uprights. Next, glue and fit the table top mounts to the uprights. Drill the required holes for either the M8 or M10 machine screws. Fit the castors to the cross base stands then apply sanding sealer and allow to dry. When the unit is dry, sand it again with fine 180 or 200 grit sandpaper. Finally wipe with a cloth dipped in thinners and apply varnish.



The components for the project



Fitting the legs, base and cross member



The table top mounts in place



The Changan Minivan

The Chinese manufactured range of Changan automobiles offers commercial minivans, single cab and double cab light trucks which can handle payloads of up to one ton. But before we go any further let's be clear about one thing; these vehicles are workhorses and not luxury family cars. It is an asset; a tool to generate income.

Technical specifications

Displacement:	1243cc
Output:	72kw
Torque:	119nm
Tyre size:	165/70R14LT
Payload:	1 ton
Fuel tank:	40 litre
Overall length:	3980mm
Overall width:	1620mm
Overall height:	1890mm
Ground clearance:	155mm

At first glance the Changan Minivan appears interesting and I looked forward to driving the vehicle. It is a small, compact delivery van with huge headlights and high tail lights. It measures almost 4m long, 1 620mm wide and 1 890mm high and has seating for five people (of average size).

The Minivan, like the trucks, has a cab-forward cabin, meaning that you are actually sitting on the engine. However, it was noticeably quiet inside the cabin and we could easily have a conversation without raising our voices. The cab-forward cabin provides more legroom and space in the cabin but nothing to protect you against a head on collision. Not that these vehicles are very fast on the open road, but again, it is a city

delivery van and has a top speed of 120km/h without a load.

The front cabin is spacious and the interior is practical with all the instruments within easy reach. It has all the basic amenities needed and comes standard with luxuries such as a built-in AM/FM radio with AUX port and clock, electric windows, air conditioning, interior light, plenty of space in the doors' side panels and cup holders.

The two front seats are cloth covered with enough support for your lower back and have enough space above your head. The back seat sits three across with a metal divider between the back seats and the load area which prevents items falling over on top of the passengers (it can also be used to securely transport animals or as a security van).

The load capacity is great, and with some clever packing, the back half of the cabin can hold plenty of goods. The driver and front passenger have large doors, while the rear passengers have sliding doors and the rear tail gate lifts up.

The Changan Minivan's four cylinder, 1243cc, petrol engine has an output of 72kw which is adequate for most people. It is paired with a five-speed manual gearbox. The fuel tank's capacity is 40

litres which can easily cover a range of over 1 000km per tank on the open road.

Driving experience

The seats sit quite high, making it possible to notice any traffic problems in the distance and made driving in traffic a pleasure. On the open road, and even on a rough gravel road, the vehicle behaves well provided that the tyre pressure is correct.

The steering is not powered and requires muscle power to turn it sharply. What impressed me though was the short turning radius of 6m and how conveniently the vehicle could be parked driving backwards.

The Changan Minivan is available in four different models with a small price difference between the entry level and top of the range model. The vehicle comes with a three year or 100 000km, warranty and Changan offers 24-hour road assistance.

**Hannes Lindeque is the publisher of The Home Handyman magazine*

Resources

For more information, or to book a test drive, call 011-668-0300, or visit www.changansa.co.za



www.jmcsa.co.za

CARRYING YOUR BUSINESS FOR THE LONG HOLD

As promised, JMC has delivered the first 10 Years of value and service

3 YEAR/100 000 KM WARRANTY

**2 & 5-Seater
AVAILABLE**



**1 Ton
PAY LOAD**

**GIVE YOUR BUSINESS A BOOST
WITH THE AFFORDABLE *MINI VAN* SERIES**

**72 KW - AVAILABLE IN
STANDARD AND LUX**



GAUTENG: CENTURION 012 660 1097 EAST RAND 011 915 8444 KEMPTON PARK 011 394 7908 **PRETORIA** NORTH 012 546 4503 SILVERTON 012 804 7077
WEST RAND 011 668 0300 **NORTH WEST:** RUSTENBURG 014 592 5400 KLERKSDORP 018 462 4041 **KZN:** ESTCOURT 036 352 3150 PIETERMARITZBURG 033 394 2595
PINETOWN 031 702 7874 RICHARDS BAY 035 789 2655 **FREE STATE:** BETHLEHEM 058 303 5661 **BLOEMFONTEIN** 051 447 7042 WELKOM 057 050 0050
LIMPOPO: MOKOPANE 015 491 2855 TRICHARDT 017 638 0725/6 **EASTERN CAPE:** HUMANSDORP 042 291 0086 PORT ELIZABETH 041 484 1905
NORTHERN CAPE: KIMBERLEY 053 807 9403 UPINGTON 054 338 8833 **WESTERN CAPE:** PAARL 021 871 1317 PAROW 021 930 4613
SWAZILAND: 00268 2518 7867

T's and C's apply

The first step to finishing many DIY projects is sanding. Whether you choose to use a power sander or to sand by hand, you first need to select the right type and grit of sandpaper for your job

It's about the grit

Make sure you select the right sandpaper for your application

Sandpaper is one of many different types of abrasives. Sandpaper can be traced back to 13th century China where crushed sea shells, seeds and sand were bonded into cloth or paper using gum. In 1921, 3M invented a sandpaper using silicone carbide grit and a waterproof adhesive and backing, referred to as wet and dry sandpaper.

The use of sandpaper is not only restricted to woodwork but also has a range of applications elsewhere, such

as for metalworking as well as levelling fillers in ceiling panels and dry walling. This article explains the different types of sandpaper as well as the grit sizes.

Types of abrasive material

Silicone carbide and aluminium oxide are the two most common abrasives used in sandpaper. Chromium oxide is used where very fine grit is needed and emery (a dark coloured type of rock) is used in sandpapers designed for polishing

metals. Other materials, such as garnet (also a type of mineral rock), are less commonly used in sandpaper designed for wood.

What is a wet and dry sandpaper?

Wet and dry (or wet or dry) sandpaper is basically sandpaper that can be used with water or certain rubbing compounds. It is usually used for sanding and polishing of metals, as obviously



Apply gentle pressure when sanding and let the sandpaper do the work

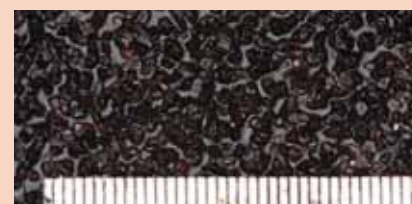


The grit size and other information such as sandpaper type are printed on the back of the sandpaper

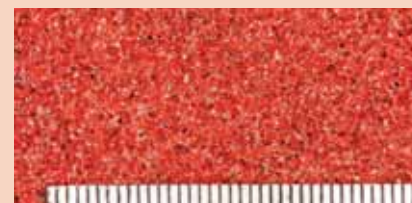


Sanding tips

- Always work in a well-ventilated workshop, garage or room when sanding. Wear a protective mask when fine dust particles are present as well as eye protection, especially with belt sanders.
- Exercise due caution when sanding certain varnishes, paints and oils which may heat up and release noxious odours.
- Always be vigilant when operating belt sanders and large commercial sanders. The moving parts can easily trap a hand or remove fingers. Some abrasives can easily remove skin.
- When using machine sanders, always apply gentle pressure and never force the machine down on the surface.
- Select the correct sandpaper for the job.
- Start with a larger grit size and change to a finer grit size for finishing work.



Medium-sized grit, in this case 60.
Scale bar in mm



A much finer 80 sandpaper is ideal for finishing on most wood types



A fine 180 sandpaper



Custom-sized sandpaper is available for most sanding machines, however, sandpaper is easy to trim to size

using water on timber could tarnish the surface or cause swelling of the wood.

Grit size explained

The grit size of sandpaper simply refers to the size of grit (abrasive material) used in the sandpaper. Choosing the correct grit size is very important to ensuring you get the job done efficiently with minimal wastage. How many times have you seen someone sanding away for hours on end because they're using the wrong type of

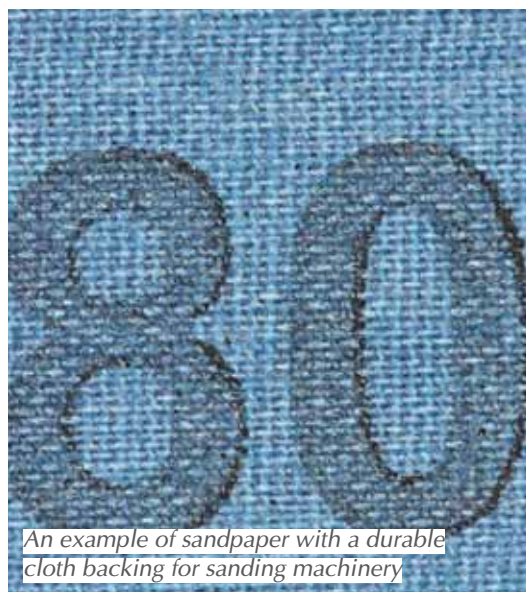
sandpaper for the job?

Grit sizes usually range from 12 (very coarse) to 600 or higher (extremely fine).


Grit sizes 60 to 120 are used for most woodworking applications, but a finer grit size may be needed for finer woodwork. The letter 'P' sometimes seen in front of the grit size means that the sandpaper is graded in accordance with the European FEPA Standard. FEPA is the Federation of European Producers of Abrasives.



Certain woods may contain oils which might impact on the effectiveness of the sandpaper



An example of sandpaper with a durable cloth backing for sanding machinery



South Africa's climate is often unforgiving, yet there are steps you can take to protect metal items kept outdoors from the elements

HOW TO CARE FOR YOUR OUTDOOR METAL ITEMS

Outdoor metal items exposed to the elements need to be treated correctly to ensure their longevity

Considered the most durable material for outdoor furniture, metal can last a lifetime if it is taken care of properly. Most metal outdoor furniture, artwork or fences are finished with paint, varnish, or powder coating to prevent rust, and while aluminium doesn't rust – which is why it is recommended for coastal areas – it can still oxidize, causing pitting and dulling the finish. Although protective covers are often available for specific lines of furniture, resist the urge to protect your treated metal furniture with a plastic tablecloth, because it can trap water, humidity and heat that could damage the finish.

Metal furniture is best cleaned with a cloth or sponge using water and mild, non-detergent soap and wiped dry. Abrasive scrubbers or cleaners should not be used as they can scratch the finish, potentially exposing the metal to rust-inducing moisture. For ingrained dirt, use window cleaner or a non-abrasive multi-purpose cleaner.

When cleaning, keep an eye out for scratches or any signs of rust, especially at the joints. Apply touch-up paint to scratches to prevent rust. If rust or mould is present, sand the area lightly using fine-grit sandpaper and apply rust-proof touch-up paint. To remove oxidation from aluminium furniture, use a solution of equal parts white vinegar and water. Avoid alkaline cleaners as they cause oxidation.

Rust tends to make outdoor metal furniture practically unusable, staining clothes and looking unsightly. It is best to attack rust early and nip it in the bud, or you can wait until you have a full-blown war on your hands.

If you're not into chemicals and you want to remove the paint along with the rust, use a power tool such as a grinder, sander, oscillating tool or drill to remove rust. A grinder fitted with a stripping disc, grinding wheel, fibre or flap disc makes quick work of heavy rust on large objects. But keep the tool moving so you don't gouge the metal. For smaller jobs, use a traditional sander. To get into small areas, use a 'mouse' sander, an oscillating tool with a carbide rasp or sanding pad attachment. Whichever tool you choose, always start with the coarsest abrasive. Once the rust is gone, switch to a finer grit to smooth out the swirls and grooves caused by the coarse grit. For the smoothest paint job, finish sanding with 400-grit wet/dry paper.

If you prefer the chemical route, note that rust remover chemicals contain either phosphoric or hydrochloric acid to dissolve the rust. They're harsh chemicals that give off intense fumes, so suit up with rubber gloves, goggles and a respirator. Apply the chemicals with a paintbrush and wait the recommended time for the chemicals to work. A tooth brush can be used for those hard-to-reach spots. Then scrape off the liquefied rust. You won't get it all in a single step – count on multiple applications to completely remove heavy rust build-up. Consider a gel formula when removing rust on vertical surfaces as it will cling better and result in less runoff.

There are, however, newer non-toxic and acid-free soaking solutions available. These chemicals dissolve rust. Start by cleaning off any oil or grease, then dunk the rusted part in a tub of the rust remover solution. Keep in mind that this is a soaking solution – you can't paint it on or spray it on, so if you have a large object, such as a table or a chair, it will not be practical.



Rust tends to make outdoor metal practically unusable, staining clothes and looking unsightly

Caring for stainless steel

The stain resistance of stainless steel stems from an extremely thin but tenacious and self-repairing film which forms on the surface. This film imparts the properties of stainless steel: stain resistance, non-tainting of food, hygiene, cleanability and the aesthetic appearance that make stainless steel the ideal choice for many household products.

Stainless steel does not chip, flake or crack and is unaffected by the normal conditions of household use. Routine gentle cleansing will reward the owner with a product which retains its properties and appearance through many years of constant daily use.

Routine cleaning

Sassda, the Southern African Stainless Steel Development Association, says that the best method for cleaning stainless steel is quite simply soap, or a mild detergent (such as Sunlight Liquid®) in warm water, applied with a soft cloth or synthetic sponge. Rinse in hot water and dry with a soft cloth or allow to 'drip' dry. Occasionally, the use of a mild household cleaner (Handy Andy®) and fine synthetic scourer (green Scotch-Brite®) or a brush with nylon bristles may be used. Routine cleaning applied over several days will generally remove heavy soiling and staining.

Removing stains

Adhesive labels	Remove labels by soaking in a hot soapy solution and rubbing with a cloth or sponge. If adhesive remains, remove with a soft cloth soaked in alcohol (Mentholated Spirits) or an organic solvent (Benzene).
Food stains	Use a mild household cleaner (Handy Andy®). If heavily stained, pre-soak in hot detergent. Use a synthetic scourer with fine abrasive cleaners (e.g. Vim®, Ajax®). Repeat if necessary.
Tea and coffee stains	Use a thin paste of washing soda (Sodium Carbonate) or fine household cleaners (Handy Andy®, Vim®, Ajax® made with hot water, on a synthetic scourer.
Fingerprints	Pre-treat marks with alcohol or organic solvent. Follow by routine cleaning.
Grease, fats and oils	Wipe off excess with soft paper towel. Pre-soak in warm detergent.
Water marks/ lime scale	Prolonged soaking in a 25% vinegar solution will loosen the deposit. Continue cleaning as for food stains.
Chemicals	(For example swimming pool acid (hydrochloric), battery acid (sulphuric), tile cleaners (hydrochloric acid), undiluted bleach.) Rinse immediately with large volumes of water. If staining/ damage has occurred, contact Sassda (visit www.sassda.co.za).

Make it last:

How to protect and preserve outdoor metal items

For outdoor metal items exposed to the elements, it is recommended that you treat your garden treasures with a coat of clear polyurethane before putting them outside, and repeating the process from time to time to keep the finish looking new.

While polyurethane can be applied with a brush, you may find it far simpler to use spray polyurethane, which comes in a choice of matte or glossy finishes. Inexpensive and easy to use, it goes on in seconds and dries quickly. Be sure to follow the manufacturer's instructions for safety and a smooth application.

Quick tips for protecting metal from rust:



- Clean the item with a lint-free cloth, even if it's brand-new. It's a good idea to treat any metal items that will stay outdoors with a quick wipe down with mineral spirits, too. This will remove any residue that might prevent the polyurethane from bonding to the item's surface.
- Protect your work surface with a dropcloth and lay the item flat.
- Apply one light coat of polyurethane to the exposed surface and allow it to dry.
- Flip the item over and apply a light coat of polyurethane to the opposite side.
- Repeat the process a second time for added protection.

Remember to repeat your polyurethane treatment at least once a year. With a little bit of extra finish and a few minutes of your time, your metal garden art or furniture will provide many years of enjoyment.

Over the past few years, South African homeowners have had to get smart about pools, with various local crises necessitating a rethink on how pools are used and maintained. In a relatively short period, the new 'normal' has become a covered pool that consumes less water and power

Combat loadshedding with COVERED POOLS

The EnergyGuard cover is the only dual-purpose thermal cover on the market, offering natural heating as well as power saving



**DID YOU
KNOW**

When the first power crisis began in 2006, there wasn't a pool cover on the market designed specifically to reduce power consumption. PowerPlastics Pool Covers saw the gap and decided to design a solution and the result was the EnergyGuard GeoBubble cover and the Energy-saving Solid Safety Cover.

South Africa was a late adopter of pool covers when compared to Europe, but the drought that nearly brought some provinces to their knees in 2017/18 caused an almost overnight uptake, with thousands of pools being covered on a weekly basis. The water crisis has eased but the need to conserve power is another reality that pool owners need to adapt to, according to PowerPlastics Pool Covers.

For an average domestic pool, 12% of the household's electricity bill can be directly

attributed to the pool pump. "Pool pumps really are among the heaviest consumers of power in the domestic setting," says Carolyn Idas of PowerPlastics Pool Covers. "Reducing your filtration times and running a pool pump in off peak hours may seem like less of a 'life and death' scenario than the home running out of water, but if all pools scaled back filtration times, it would make a huge difference to how much power South Africa needs on a daily basis. The supply and demand equation is still not balanced and even when loadshedding is

not happening, there is still a significant power crisis running in the background of the economy. Loadshedding is never far away!"

Made from the technically advanced and highly durable GeoBubble material, the EnergyGuard cover uses a process of selective transmission to block out the specific rays from the sun that algae feed on. By stopping algae growth, chemical input can be reduced and the improved water hygiene allows for a 50% reduction in filtration time. The EnergyGuard cover is also the only dual-purpose thermal cover on the market, offering natural heating as well as power saving. This 'smart' pool cover has gone on to be a global best seller, favoured in markets such as Spain and Australia, and an award winner for technology and innovation. The EnergyGuard Selective Transmission cover was awarded the 2018 Institute of Physics Business Innovation Award, recognising excellence in innovation that delivers significant economical and societal impact through the application of physics.

"This was one of those 'wow' awards, underpinning all the performance figures and recognising how simple and effective it is to achieve a sustainable, naturally heated pool simply by adding a cover," says Idas.

With the combined savings on water, power and chemicals, a GeoBubble

pool cover has a short payback period. It also allows one to close the pool for the winter months when filtration times can be reduced even further than 50%.

"In terms of the country's power outlook, it will be critical for all pools to be covered this winter and put into hibernation. It makes no sense to pour money (and power) into a pool that is not being used. Pool owners should be making winter plans now. In homes where child safety is of concern, the Energy-saving Solid Safety Cover is the alternative to a thermal cover and will also assist in reducing power consumption. Cover water and it stays cleaner – it's that simple," says Idas.

Loadshedding aside, there remains a critical need to save water. A pool cover instantly stops 98% evaporation. During the drought in the Western Cape, pool covers are what kept pools going, also allowing pools to act as emergency reservoirs.

There aren't many people saying no to household savings at the moment. The economic downturn is forcing homeowners to find new ways to cut spending in this first quarter of 2019. "Take the current power tariffs coupled with high water tariffs and the pool's running costs quickly add up. A pool cover is an effective and immediate way to rescue the average household budget. The majority of pools in South Africa are costing way more than they should," says Idas.



Another upside of pool covers is that they can increase the value of a property. Given the local crises, even tenants are starting to expect pool covers as standard property fixtures supplied by the landlord.

"Pool covers make sense on every level and we have made it easier than ever to get covered. Aside from being practical, the aesthetics of a pool cover adds value to your home and the savings achieved also mount up, never mind the environmental concerns we all have. Get covered – loadshedding or not – it's the right thing to do," says Idas.



Inhibits Algae Growth



Increases Water Temperature



Eliminates Evaporation



Retains Heat



The energy-saving Solid Safety Cover is the alternative to a thermal cover

Resource

For more information, visit:
www.powerplastics.co.za

Make sure your roof is waterproof

A leaking roof is likely to put a real dampener on your spirits when you are looking forward to snuggling up with a loved one on a wet, rainy day. You can, however, brush up on your knowledge and perform some preventative maintenance before the rainy season begins.

The most important aspect of any home is the roof. Even though you will have to replace or repair the roof eventually, it is always a good idea to keep an eye on the health of this essential part of your home.

Check your roof for any possible leaks. You might be able to see some cracked tiles from ground level or water stains on the ceiling. A small roof leak can become a major problem; it can introduce mould to the area, which can

spread further and damage a large area of the roof. Roof tiles are exposed to some extreme weather conditions here in South Africa and face wear and tear on a regular basis. Heavy rain, hail, strong winds, dry air and the sun can damage tiles, which could allow water, pests and debris into spaces where they shouldn't be.

Gutters become cluttered without you even knowing about it. Regular cleaning is important to extend their

life and prevent further damage such as roof leaks. Loose or missing flashing could also cause roof leaks. Flashing is a thin construction material used to prevent water from entering into sealed areas such as corners and roof edges. Flashing is waterproof and protects the roof from the direct flow of water, yet it can become loose over time due to bad weather conditions, rodents and birds. Loose flashing can result in a lot of roof damage and increases the possibility of a roof leak.



Checking ceiling insulation is another smart roof maintenance tip. Insulation and ventilation in the roof space help to prevent moisture, but can also be damaged by rodents and birds. Additionally, check the insulation for dampness. If there is a tiny hole in the roof, your roof insulation can become moist.

According to the law

The National Building Regulations and Building Standards Act states that roofs must be designed and constructed safely so that they are not damaged by wind or any other natural force.

The law also states that they must be waterproof, specifically:

- Roofs must be durable and must not allow the penetration of rainwater or any other surface water to its interior.
- Roofs must not allow the accumulation of any water on its surface.

However, the legislation simply lays down the basics. For additional guidance, anyone building needs to refer to the South African National Standard that explains how the law

can be successfully applied. In terms of waterproofing, the Standard, The application of the National Building Regulations Part L-Roofs specifically covers:

- Roof coverings and waterproofing systems, and
- Drainage and waterproofing of flat roofs.

The SANS elaborates on the legislation stating that roofs must be able to resist penetration of rain to the extent that any water that penetrates the roof won't run down the inside face of walls onto the floor, or form damp patches on the ceiling or the floor. The SANS also states that roof coverings and waterproofing systems must be capable of being repaired if damaged, even if the materials are old.

Skylights: Skylights have become increasingly popular over the past few decades, but if they are not properly designed and installed, they can leak. The SANS for roofs states that any skylight must be able to resist UV degradation for at least 15 years, and hail (at any time) for 10 years (in accordance with SANS 10400-B).

Lastly, all skylights must be designed and installed in a way that rain will not penetrate the roof.

Gutters and downpipes: Gutters and downpipes are not mandatory, however, unless gutters are designed by a competent person, they may only be located on the 'perimeter' of the >>

Waterproofing a flat roof

Water cannot run off flat roofs as it does with sloped roofs, but a simple solution exists to resolve this problem. Applying two coats of elastomeric coating protects the roof from water and also insulates the material, preventing loss of heat from inside the house.

Step 1: Measure each surface area of your roof's length and width. Multiply the total length with the total width to give you the surface area. Visit a local hardware store and purchase as many buckets of coating as the salesperson says you will need for your specific roof size.

Step 2: Clean your roof with a pressure washer or broom to ensure all the dust and dirt are removed. Wait for the roof to dry before applying the coating.

Step 3: Pour about three or four litres of elastomeric coating from the bucket onto the roof and begin spreading with your paint roller. Start from a corner and work your way around the roof, walking backwards. Don't step on the coating. Repeat this process until you have covered the entire roof. Allow the finished coat to dry for 24 hours before applying a second coat.



It is imperative that gutters are kept free of leaves, twigs and sand which could cause a blockage



What to do about water stains on ceilings?

These ugly stains appear when ceilings become wet from water leaks. Warrior Paint recommends that before any paintwork is undertaken, you should determine the cause of the leak and then repair it and allow the ceiling to dry. Do not apply a water-based paint over these stains before treating as they will migrate through the paint and reappear. The stains must first be blocked out with one coat of undercoat and allowed to dry overnight. When dry, two coats of a general purpose PVA will give your ceiling a beautiful, professional finish.

building. They should also be designed to ensure that storm water doesn't penetrate the inside of any building if the gutter becomes blocked at any stage. Outlets must be set flush with concrete. If there is timber decking, it must be recessed so that there isn't any ponding around the outlets. Outlets should be at least 500 mm from upstand elements including parapet walls, and should be at least one metre from any expansion joints.

Waterproofing systems: Any waterproofing system that is installed on a flat roof must be undertaken by a 'competent person' who must follow the manufacturer's instructions. SANS 10400-L states that for roofs to be up to standard, they must remain watertight for at least five years without the need for any form of maintenance other than the normal cleaning of downpipes, gutters and so on. It is also important that the person doing the installation is satisfied that the materials used are appropriate for that particular application, and should therefore take into account:

- The degree of exposure the waterproofing system will be subjected to
- How much protection the waterproofing material will have

- the affects its location may have on the building

It is important to realise that waterproofing systems can delaminate if the substrates don't allow moisture vapour that has been trapped to escape. Generally, a sand-cement screed that is not very dense will allow retained moisture vapour to dissipate and therefore protect against the possibility of delamination. SANS 10400-L suggests that a 20 mm screed be laid over all 'lightweight' screeds, because these are generally too friable and porous to provide good adhesion for waterproofing systems. The SANS also suggests that concrete and screened roof surfaces be allowed to dry thoroughly before any type of waterproofing system is applied.

There is always a potential problem with outlets. The installer must therefore pay close attention to overflow pipes, flues and so on, and make sure that the waterproofing material used covers everything but the opening. Generally, waterproofing membranes around any pipe work should be clamped with a hose clamp or something similar, before flashing is applied over the pipe.



According to the National Building Regulations, roofs must be durable and must not allow the penetration of rainwater or any other surface water to its interior

Cathy Reimers demonstrates how you can upcycle unwanted frames into something new and spectacular

Jazz

up a picture frame

What you will need:

- Cold Glue/Wood glue
- Marble dust (available at art stores)
- Squeezable bottle
- Containers
- Art knife
- Grey acrylic paint
- White acrylic paint
- Pencil
- Design for frame
- Tracing paper

I recently dug up some old picture frames – okay not so old, but gold and lacking in character. I also found some old half-hearted attempts at floral painting.

I thought if I added some texture and pattern, I might have a winner! This idea was inspired by a kiddies' project (made on cardboard!) Now all I had to do was make it look more sophisticated. I finally selected my materials and method, and decided on a French rustic look with a classical feel.

Step-by-step: Picture Frame

Step 1: Sand your frame to enable a key for your base coat. >>



Step 2: Base coat the frame with a couple of coats of a good acrylic paint.

Step 3: You are now ready to draw out the pattern you have chosen. The best way to achieve symmetry is to draw out half the design up the length and half the design along the width of the frame. You can then trace the design on the rest of the frame.

Step 4: Now you're ready to make your glue mix. For this, you need the wood glue, marble dust, a container, mixing stick, funnel and your squeeze bottle. Pour the glue in the container. Now add some marble dust – just a little at a time.



The marble dust adds opacity and thickens the glue. What you're looking for is a creamy paste that won't run or flatten out as it dries. Now pour the glue through the funnel into your squeeze bottle. It takes a little time to run through and might need your help to push the glue down the funnel. Make sure you wash all equipment with water immediately after.



Step 5: Now for the tricky part – squeezing the glue. What I discovered was that it takes a great deal of control to evenly apply the glue along the pattern, as the bottle cannot touch the surface. And I found my hands cramping! So go slow and take your time.



Step 6: As you may have noticed, I haven't achieved the neatest or cleanest line work. This is what the art knife is for. Once the glue pattern has dried (it shrinks and flattens a bit), slowly cut with the art knife along any slumped or out of line glue.



Step 7: Apply another coat of paint over the entire surface and allow to dry.



Step 8: Using the white paint, dry brush over the surface. Dry brushing is basically dipping the brush in the paint, then brushing off as much paint as possible. Holding the brush almost horizontally, softly drag it over the surface so that it doesn't flood paint everywhere and creates depth from the darker grey.



Step 9: Using a damp cloth gently soften some of the harsh brush marks and allow to dry.



Step 10: Your frame is nearly complete. This is probably the quickest painting I have ever done. Just a dark wash and then a warmer wash.



Add some loose leafy brush swishes.



Check to see what the artwork in the frame looks like. Mine frame definitely needed something extra so I decided to hit it with the glue again! Now pop your art in the frame and voila!



"A picture is a poem
without words" – Horace



MAKE A COAT STAND

Project guide

Difficulty: Intermediate

Estimated cost: R300

Estimated time: A day

Materials

- 1m of square tubing (25mm x 25mm)
- Two x cast iron ends
- 16 x 20mm cast iron balls
- 5m flat bar (25mm x 5mm)
- 6m of 8mm round bar

Tools

- Cut Off saw or grinder
- Drill and drill bit
- Chalk
- Tape measure
- Square
- Gloves and safety glasses
- Bender

This coat stand is definitely not the ordinary coat stand you are used to. It might be a bit intimidating at first, but at the same time, exhilarating because of its unusualness. Let's not focus on the modern look only, but rather on the functionality which this stand has to offer in a small space.

Step-by-step guide

Step 1: Let's kick this project off by cutting the following:

- 1m square tubing
- 2 x 750mm flatbar: 25mm x 5mm
- 1 x 1m flatbar: 25mm x 5mm
- 1 x 650mm flatbar: 25mm x 5mm
- 2 x 530mm flatbar: 25mm x 5mm

Step 2: Bend the 1 x 1m flat bar to form a half circle. Bend the 2 x 750mm flat bar to form a half circle as well.

Step 3: This step can be confusing for some, so make very sure that you weld the right pieces together. Weld the 530mm flat bar onto the bottom of the 750mm flat bar half circle. Do the same with the second one. Then weld the 650mm flat bar onto the bottom of the 1m flat bar half circle.

Step 4: Determine the middle of the 1m/650mm half circle and make a mark. Measure 85mm from the one end of the square tubing and make another mark.

Step 5: Make use of a square and weld the 1m half circle on to the square tubing mark.

Step 6: Find the centre of the 750mm/530mm half circle, mark with chalk and carry over to the second 750mm half circle.

Step 7: Measure 260mm from the top of the square tubing and weld the first 750mm half circle in place.

Step 8: Measure 230mm from the bottom (other end) of the square tubing and make a mark. Weld the second 750mm half circle onto the square tubing.

Step 9: Cut 5 x 750mm of 8mm round bar and bend into 'S' hooks.

Step 10: Weld the five 'S' hooks, equally spaced, onto the first and second half circles from the top.

Step 11: Weld the two cast iron decorations onto both ends of the square tubing.

Step 12: Cut 2 x 660mm of the 8mm round bar and bend two decorative scrolls. Divide the bottom 750mm half circle into quarters. Weld each scroll in place on either side of the bottom 750mm half circle (on each side) and weld the other end onto the square tubing.

Step 13: Cut 2 x 320mm of 8mm round bar and bend two smaller scrolls and weld onto the bottom half circle (middle).

Step 14: Weld the cast iron balls onto all scroll ends to create a softer look.

Step 15: Grind all welding joints neatly and drill holes to hang.

Step 16: Clean thoroughly and spray an undercoat before the final coat.

1



Pieces cut to size

2



Bend the flat bar to form a half circle

3a



3b



Weld the pieces together

4a





Find the middle of the half circle



Weld the half circle to the square tubing



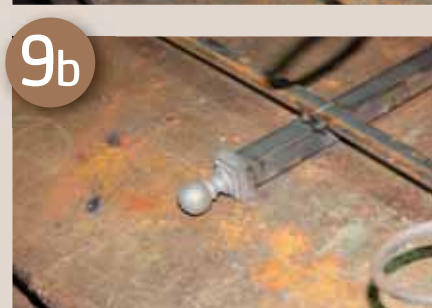
Mark the centre of the half circle



Weld the first half circle in place



Weld the 'S' hooks to the half circles



Weld the decorations onto the square tubing



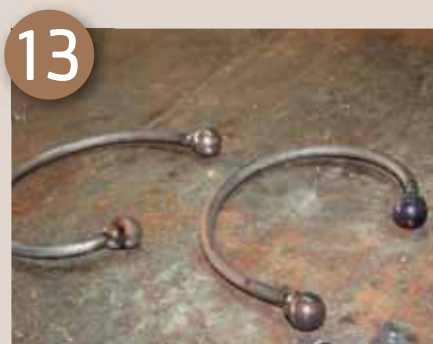
Bend two decorative scrolls



Bend two smaller scrolls



Weld the cast iron balls onto all scroll ends



Grind all welding joints



Apply undercoat before the final coat

ABOUT ANDRÉ:



After a period of unemployment, André turned his 20 year hobby into a business. He later suffered a setback when his tools were stolen but the tide turned when he won *The Home Handyman's* wine rack competition and became a regular contributor.



*"Create with the heart;
build with the mind." – Criss Jami*



Suburban BLISS

Decorative wooden houses, lit with a candle, make a wonderful point of interest in a room. Clifford Roberts and woodworker Andries Eygelaar demonstrate how they are made

Scandinavian style has appeal in woodwork as much as it does in other spheres of design. Among the main reasons is its economical approach that weighs material as importantly as function. It elevates the status of wood and happily, that of skilled woodworkers too.

That's what we liked about the set of decorative houses we came across recently. Their simplicity of design is appealing and the natural wood grain is a feature that adds to a cosy cottage feel that's encouraged even more when tea lights are placed inside to light up the interior.

Furthermore, the project allows for plenty of creativity. You can make all the houses the same or vary the sizes and number of windows. You can paint them if you wish and add other ornamental tweaks. You make the rules.

This project can cost next to nothing when it comes to material. In fact, it's one way of getting rid of excess bits lying about the workshop. We used scraps of plywood and laminated flooring. The trickiest part of the construction is to accurately mark, cut and match up the roof angles in the final assembly.

Project guide

Difficulty: Easy

Estimated cost: Less than R100

Estimated time: 3 hours

Materials

- Router and table saw or hand plane
- Cold wood glue and sandpaper
- Wood chisel
- Panel pins
- Paper, pencil and scissors
- Laminated wood (±10mm thick)

Good to know

- If, like us, you find your angles don't quite match up, you can gently encourage the wood with a couple of extra, well-placed panel pins and glue. You can also use a rubber band to pull the construction together while it dries.
- Keep a rag handy. A damp rag rather than a dry one does a good job cleaning away excess glue.
- Clean as you go. That way, there is less clean-up at the end.

Step-by-step guide

Step 1: Make a basic, three-dimensional drawing of the mini-building. If you're following our example, the drawing should be of a simple four-sided, pitch-roof design. The one thing to remember here is the tea light. To keep the roof from overheating and catching fire, we kept the height from the base to where the pitch starts at a minimum 150mm. From there, you can go as high as you desire. Keep in mind that the bigger and taller the construction, the less the impact of the candlelight, so it's a fine balance.

If you're going to make more than one, you want to watch scale. A good rule of thumb is to keep the windows or roofs about the same size to give corresponding scale to your 'village'.

Step 2: Using the plan as a template, cut out the shapes and windows and transfer the design to the wood. Important to note is that your house will only have three walls – a front, with windows and two side walls. The back remains open for ventilation. The house should also have a wooden base or floor, which supports the structure and protects the displaying surface from hot candle wax.

Before the first cut is made, check your angles using tools such as a T-square and bevel gauge. In our case, we had to prepare our scraps to make up panels thick enough to take the panel pins we had at our disposal. This meant laminating some of the wood sheets.

You want the panels to be around 10mm thick. If you go our route of recycling scraps, use cold wood glue to fix the sheets together and then clamp them until dry.

Step 3: You now should have six loose panels. For the front, there are various ways to cut out the windows.

We used our router, fitted with a 6mm bit and a sharp chisel. To neaten them up, we used small DIY sanding sticks made by gluing sandpaper onto scrap wood about the width of the windows. They're especially useful for getting into small corners and are handy on all kinds of projects, so don't toss them away after use.

Where the roof and the various panels meet – on top of the walls and at the pitch – requires care and attention, because of the 45° angles. You can measure them to ensure a good fit, but you may well need to adjust here and there. We cut the angles using a table saw, but you could also use a hand plane.

Joining the sides in the assembly can also be a tad complicated because the material we used tends to split, and the panel thickness requires accurate placing. We used panel pins and cold wood glue. Start by marking the location of each panel pin. Fix a sharp panel pin in your drill bit and carefully drill a guide hole in the front panel. Line the join with glue; position the panels together, then nail them in place. We used a thin punch to countersink the panel pins.

Step 4: With the construction complete, use wood filler that matches your wood colour to level off where the panel pins have been countersunk. Once the filler is dry, give the whole construction a light sand to remove any glue stains, fingerprints and dirt.

When sanding to round off the edges, don't go back and forth, rather sand in one direction and in a sliding motion across the edge to prevent the laminate from splitting off. If you want to varnish or paint the houses, go ahead. We chose to vary the finishes in our village for diversity and interest.

1



We recycled off-cuts of laminated wood, gluing them together to the 10mm thickness we required

2



Use a bevel gauge to check your angles

3



To simplify the sanding job, make a sanding stick that can easily get into those nooks

4



A sharp chisel comes in handy to open the windows

5



A rubber band is useful to pull the construction together while you're waiting for the glue to dry



Make a DIY hose reel

Learn how to make your own hose reel for an air compressor hose

Project guide

Difficulty: Easy

Estimated cost: R600

Estimated time: 1 day

Note: this is a light duty DIY project

Materials – steel

- Two lengths of 1m x 10mm round bar
- One length of 16mm x 1500mm x 3mm flat bar (A)
- One length of 36mm x 185mm x 5mm flat bar (B)
- Two lengths of 36mm x 240mm x 3mm flat bar (C)
- One length of 36mm x 800mm x 3mm angle iron (D)
- Two square base plates 100mm x 100mm x 3mm (E)

Note: Your metal requirements will differ according to the size of the reel (My reel's diameter is 340mm)

Materials – air

- One male air line hose coupler
- One female air line hose coupler
- Two male quick release air line couplings
- One 1m high pressure rubber hose

Tools

- Tape measure
- Grinder
- Arc welding machine
- Electric drill
- Tapered drill bit (for metal)

Materials – plumbing

- Two long nipples ½ inch x 200mm
- One long nipple ½ inch x 100mm
- Four elbows ½ inch
- One end cap ½ inch
- One Tee ½ inch
- One thread through nipple ½ inch
- One reducing socket ½ to 1/8 inch
- Five reducer bushes ½ inch
- Two nipples 1/8 inch
- Thread seal plumbers tape

Materials – extra

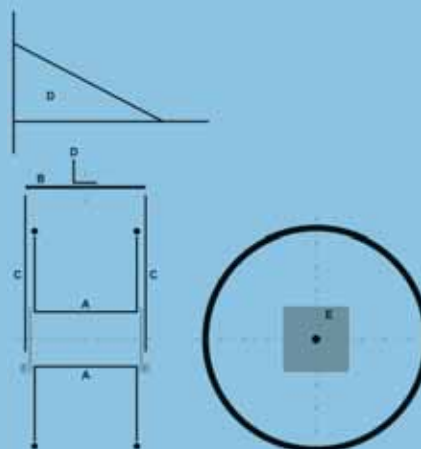
- One 8 x 20mm bolt with nylon lock nut and washer
- Two hose clamps
- Two roll bolts
- Primer and top coat
- Varnish and turpentine

Very important : If you don't already have most of the components, then I suggest that you rather buy the complete hose reel. It will save you time and money.

From the time I acquired my air compressor, I wanted to have a hose reel because hanging the hose over a second-hand vehicle rim is frustrating, especially when the hose starts kinking.

Dr Google had some great ideas which I altered because I wanted a hose reel that can turn in the direction I want to

>> Hannes Lindeque use it. The 'secret' of the hose reel is not to lose air when it rotates. Most of the material was already laying around in my 'workshop' and it was just a matter of putting it all together. Only a few odds and ends were needed to make it finally work. I drew up a few rough sketches and it took me less than one day to complete the project once I had all the components ready. >>



An explanation of the reel parts

5



6



7



8



The secret part

Step-by-step guide

Step 1: I used the vehicle rim to bend the round bar into circles. The rim itself was securely placed in a bench-vice and the one end of the round bar was clamped onto the rim using a vice-grip (Photo 1). It took some physical power and patience to follow the rim's outer edge. To complete the loop I had to bend the bar past the starting point and mark the overlapping point (Photo 2). Cut the excessive tips off and arc weld the ends together.

Step 2: Roughly assemble the galvanised parts to determine how wide the U-bends must be (Photo 3). Cut the 16mm flat bar (A) into four equal sizes and bend them in similar U-shapes. Use a bench-vice to make sure that the bends are square (Photo 4).

Step 3: Drill a 10mm hole in the centre of the 5mm flat bar (B) and one 14mm hole in each of the two 3mm flat bars (C) ± 20 mm from the end. Only then can you arc weld the two hangers (C) onto the horizontal bar (B). Use lubrication oil to ease the drilling process (a tapered drill bit makes life much easier – especially if you want to drill different sized holes, or big holes (like the 14mm holes).

Step 4: Drill one 14mm hole in the centre of the two base plates (E). To find the centre of a square, draw two lines from the opposite corners and mark the spot where the lines cross with a centre punch). The dent caused from the centre punch will help the drill bit not slip away from the target area.

Step 5: Use chalk and trace the rim's outer edge on your work bench. Divide the circle in four equal parts (draw two lines square to each other through the centre of the circle).

Step 6: Place the one round bar circle on top of the chalk line and place one base plate in the centre. The drilled hole should be exactly where the two lines cross.

Step 7: Space the 16mm U-bends on the four lines so that the bends overlap the base plate and touch the inside of the round bar circle. Now arc weld the U-bends into position.

Step 8: Repeat Step 7 with the second round bar circle and base plate.

Step 9: Place the round bar circle (Step 7) on top of Step 8 and arc weld the U-bends to complete the reel.

Step 10: Use the angle iron (D) and cut it into three unequal lengths to form a triangle bracket from where the hose reel will hang. Drill two 10mm holes in the shortest piece and one 10mm hole 20mm from the end of the longest length. The piece with the two holes will be fixed against the wall with roll bolts and the longest length will carry the hose reel. These two pieces are arc welded together at 90 degrees. The third piece is used diagonally to strengthen the bracket.

NB: Make sure that the longest length is long enough to prevent the reel handle from hitting the wall.

Step 11: Paint the reel, hanger and bracket. Fix the triangular bracket to the wall and close to your compressor. Assemble the galvanised plumbing fittings as per the following steps.

Step 12: To make the inlet feed, fit the reducing socket to one of the long 200mm nipples (pipes) and an elbow to the other end.

Step 13: To make the handle, fit the end cap to the short 100mm nipple

and at the other end of the nipple, an elbow. Attach the second 200mm nipple to the elbow and at the other end, another elbow.

Step 14: To make the 'secret' part, fit the reducer bushes into the elbows and the Tee.

Step 15: Attach the quick release air line couplings to the Tee (left and top).

Step 16: Plug the female air line hose coupler into the quick release coupler on the Tee (left), and fix the second 1/8 nipple through the hole in the hanger (C) into the female air line hose coupler.

Step 17: Fit the one 1/8 inch nipple to the Tee (right) and through one of the holes of the flat bar hanger (C).

Step 18: Attach the two 1/8 inch nipples to the elbow fittings on the inlet (Photo 7) and the handle (Step 13).

Step 19: Use the 8 x 20mm bolt and fix the flat bar (B) to the wall bracket. Tighten the nut to your own preference.

Step 20: Connect the hose to the quick release air line coupling on top of the Tee and reel in.

Step 21: Connect the rubber hose to your compressor and the other end to the reducing socket (Step 12). Secure the fittings with the clamps.

I trust this DIY project will be of help because I certainly enjoy using my compressor much more than I used to. No more kinking hoses!

In hindsight

I've used a 1/2 inch thread through nipple and added an elbow to the Tee to relieve the stress on the hose connecting to the Tee when the hose is reeled in (Photo 9) I've added a small spring to prevent the reel from clacking and to stop it winding off by itself (Photo 12).

Air compressor safety

- Always read your owner's manual before running your compressor, there is important information in there! Improper use is the number one cause for repairs and personal injury. Remember to use eye protection and hearing protection when operating your air compressor. Try and avoid using air compressors in a wet area. If the compressor is exposed to water for long periods of time, it can cause rust to the tank, damage to the tools, and also cause problems with the electrical circuits.
- Ensure that all hose fittings are tight. Loose fittings can not only damper your compressors performance, but also cause personal and equipment damage. Keep all hoses clean of dirt and debris. This will not only lengthen the life of your hose, but your air compressor too.
- Never add or change the oil or refuel when the compressor is running or has just recently been used. This will help avoid smoke, fire and other concerns.
- To avoid severe personal injury, never point tools towards your face or body. Always be sure that the trigger on the tool is not pulled when turning on the air compressor.
- Ensure that the machine is plugged into a properly grounded outlet. If your machine is plugged into an outlet without the properly grounded electrical circuits, there may be damage to the electrical panel of the compressor as well as the possibility of a fire. Consult the owner's manual for the recommended extension cord use. Using a longer extension cord than recommended can result in a loss of power, and can cause damage to the compressor's electrical panel and/or motor.

9



10



11



12



Nothing helps beat the winter blues quite like a roaring fire. At the same time, fireplaces create a striking focal point for any living space, no matter what the weather or season



A fireplace can be one of the most relaxing and soothing additions to a home during those cold winter nights. It acts a beautiful focal point and creates a cosy ambience to help you through the cooler months. Yet with so many styles and varieties to choose from, selecting a fireplace can become a little overwhelming.

First, you should consider the primary purpose of the fireplace. Is it required to be your source of main heat or is just for aesthetics and to create an ambience, or does it need to offer both? There are numerous styles and types to choose from, yet the three most popular varieties of fireplace are gas, electric or wood burning, although ethanol fireplaces are also gaining popularity.

Gas fireplaces: There has been an increasingly strong trend toward gas fireplaces. The effect of heat is almost instant, they are affordable and easy to install as they don't require a brick built chimney. Gas fires are generally used as a secondary form of heating.



A freestanding fireplace is a highly efficient heating option for homes that don't have enough wall space for an inbuilt fireplace

Wood burning fireplaces: Nothing beats the flickering flames and mesmerising effect of a real wood burning fire place. A wood burner generates an unparalleled, luxurious level of warmth compared to other sources of heat. As wood is a renewable resource, wood burners are therefore considered a carbon neutral way of producing heat, although they are a bit more labour intensive and require more input than other varieties.

Electric fireplaces: Electric fireplaces have evolved significantly in recent years. They now take advantage of modern LED lighting technologies to mimic a flame-effect option that is almost as good as the real thing. They are now able to offer a higher level of heat output that is low maintenance and energy efficient. This type of fireplace is primarily used for decorative purposes and can be floor standing or wall mounted. They don't need to be flued so

are a good option for apartments where sharing walls may be an issue.

Ethanol fireplaces: Ethanol fireplaces are popular for their low maintenance, energy efficiency and their ease of installation. A major advantage is that they aren't required to be vented to the outdoors and as such, don't need a flue.

Styles of fireplaces

Everyone knows what a standard wood fireplace looks like, but there are many incredible, modern fireplaces to choose from. Hung from the ceiling, a suspended fireplace can create a beautiful interior sculpture and focal point for a room, while a rotating fireplace allows a playful 360° pivot rotation option that can allow the fire to be positioned anywhere in a room.

A freestanding fireplace is a highly efficient heating option for homes that don't have enough wall space for an

inbuilt fireplace, is perfect for homes with high ceilings and also work well with large format glass windows that offer a panoramic view. One of the more modern fireplace designs is the double-sided fireplace. Architects use this playful design as a divider between two living spaces, which allows you to enjoy the flickering of dancing flames from both sides. Wall mounted fireplaces are a great option for small spaces, are relatively inexpensive to buy and easy to install, while corner unit fireplaces offer the aesthetics of a freestanding unit without it taking up too much space in the lounge. Wall mounted designs have led to an increase in the number of people who are finding a place for a fireplace in less conventional rooms around the house. If you don't use your living room regularly, or fancy doing something a little different, a fireplace in your main bedroom or even bathroom can make either room feel extra warm and cosy.

Maintaining a fireplace

Before you jump right in, there are a number of important things to bear in mind when maintaining a fireplace.

Safety

Before the onset of winter each year, ensure that the chimney is cleared of all debris, such as birds' nests, leaves, soot build-up and all other obstructions. Replace the chimney cap if it is missing or has rusted away. If you have a metal chimney, check all the joints for missing screws and make sure that the joins are still well sealed. If the sealer is peeling away, it needs to be redone and if the actual chimney pipe has rusted, give it a sanding and repaint it with special fire paint that can withstand extreme heat.

If you have summer rain and the inside of the fireplace has rusted, it means that rainwater is getting in and this needs to be checked. Often this is caused

by the sealer on the chimney coming away at the bends, or alternatively, the rainwater is getting in through the top of the chimney. In summer, close up the top of the chimney with a tarpaulin as this should put an end to the rusting. If the interior is not too badly rusted, give it a good sanding and repaint it with fire paint. At least now, you have a good looking fireplace that is clean and safe to operate.

Be sure to keep couches and carpets away from the reach of the flames, and if you have little ones, be very vigilant when the fireplace is in use; a decorative firescreen looks great and also keeps pets and children away from the flames.

Smoke

There are a number of reasons a fire can cause a home to fill up with smoke. Make sure the chimney has been cleaned out. Smoke can also be caused

if there is a draft in the home – eliminate the draft and the smoke will go up the chimney where it is supposed to. Lastly using damp wood to start the fire will result in a lot of smoke so this should be avoided.

Wood

Make sure you buy wood from a reputable source, because although any wood will burn, some wood has been treated or painted, and when these chemicals burn, they give off poisonous gasses which could be harmful to the family. Make sure that you clean out the ash regularly, because if it is left to pile up, it will prevent the fire from burning properly and could be serious a health hazard.

Resources

www.property24.com
www.direct-fireplaces.com
www.houseofhome.com.au

Electrical engineer, Dwayne Baker, installed a partial off-the-grid Hybrid Solar PV system to avoid the impact of load shedding on his home business. Kim Roberts visited him at his home in Richards Bay to learn more

GOING OFF THE GRID

>> Kim Roberts

Dwayne Baker loves a challenge, but electrical energy challenges are his favourite. Growing up on a smallholding just outside Pietermaritzburg, entertainment from a very tender age came in the form of building or fixing things – anything – mechanical, electrical, you name it.

His father and grandfather, both being contractors, instilled a 'can do' attitude in the boys. Repairing motorbikes, constructing a foofy slide, or building a super secure treehouse fort are all special boyhood memories for him. Dwayne soon found he preferred the electrical side. He attended Linpark High School, and was then granted a bursary by the Pietermaritzburg Municipality to study electrical engineering in Durban. After many years in the local government utility environment, he became the

City Electrical Engineer for the City of uMhlathuze (Richards Bay & Empangeni).

After his years on the utility side of electrical distribution and reticulation, and a stint on the industrial side, he was exposed to renewable energy systems and was fascinated with this technology. "Renewable energy is the way of the future. Fossil fuels and gas reserves can only last so long," Dwayne says.

He then started his own electrical consultancy and soon load shedding was part of living in South Africa. Dwayne wanted a legal and environmentally friendly solution, not a smelly, noisy generator.

He decided to research renewable energy and teach himself all he could find out about it. He investigated hybrid and grid tied Solar PV systems and thrived on the

technologies they both presented. From his research, he decided that a grid tied system was not an option, as it is not yet regulated by most municipalities. He chose to go with a hybrid PV solar system. Through his knowledge of relevant electrical bylaws and legislation in South Africa, he knew it was legal to install a change-over system that can island itself from the grid. He wanted an energy storage system separate from the municipal grid system for his own use. He put together the specifications, worked out a budget and designed his own partial off grid Solar PV electrical backup system. He then purchased components, supporting local suppliers where possible.

He installed it all and gained independence for his office, enjoying an uninterrupted power supply during



Battery shelving

load shedding. His system can run all his computers, printers, lights, a CCTV camera system, a network (Wi-Fi), a bar fridge and pool pump.

Dwayne advises that you only purchase components after you have consulted a very reputable electrical engineer (or Solar PV specialist) and have been advised on what you will require. The engineer takes everything into consideration – even the roof pitch and amount of hours of direct sunlight exposure on your roof. He will direct you, right down to cable types and fuses you will need.

“Your existing electrical wiring may, and probably will, need to change to

enable a working system that complies with mandatory electrical installation regulations, so by choosing wisely, by concentrating your needs, you can minimise the work/expense in set up,” advises Dwayne. Meticulous about details and labelling, and making things safe and manageable even in his absence, Dwayne has a neat, spotless, easy to maintain system.

He continues to learn about upgrades and changes in any of the components that are part of this system. He plans to change over from solar gel batteries (3-5 year lifespan) to a Lithium Ion battery system, which has a much longer lifespan. >>



Separate exterior DB boards

To plan his own system, he looked at:

- His priority energy needs
- Solar power systems
- Roof pitch and roof-facing direction – north facing (best)
- The importance of purchasing a proper hybrid inverter and charger to charge batteries and produce the pure sinusoidal output, deep cycle batteries and the other ideal components to use
- Safety
- Budget
- A cool spot to house his system
- What existing electrical wiring needed to change or be added
- What he needed to install



Input/output screen – showing solar panels charging the batteries and running the office



Schematic poster

Future plans

Dwayne wishes to carry more load on his system, so he is monitoring direct sunlight to his house roof in order to place more solar panels in optimal positions to harness sun rays in all seasons. He will then enhance his solar system.

Camping in style

Being an avid camper and enjoying the comforts of life, Dwayne has also designed a portable solar panel renewable energy system for when he is in remote areas enjoying nature. His nifty system enables him to run a light or two, a fan for eight hours, charge a laptop, a cell phone and run a camping fridge/freezer to keep those beers ice cold! This compact kit has two solar panels, two flexible solar panels, a 200Ah deep cycle battery and a control board with all the necessary charge controllers and inverter components affixed to it.



Dwayne's work zone



Nifty solar camping kit



Dwayne showing his control room setup in a cool room

TOP TIPS!

We asked Dwayne to share some tips

Use only batteries designed for solar PV systems, and look at the lifespan they can deliver

"The Lithium Ion batteries cost 25 - 30% more, but their lifespan is almost double that of deep cycle gel batteries."

Do things legally and safely

"Use a reputable electrical engineer or Solar PV specialist. Check their track record. Acquire and research references before you allow someone to design your system. Ask a company to assist you to install it safely if you are not competent to do it all. Do the things you can do – such as purchasing equipment and installing solar panels if you have the skill and tools."

Label all electrical installations

"Put clear labelling on everything with operating instructions, and have the electrical schematic clearly visible. Others can then understand it all, even in your absence."

BRIGHT IDEAS

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



Joining Supawood with no splitting



I was so ecstatic at finding my favourite magazine back at Hobby-X, so I would like to share my idea on joining Supawood without the ends splitting. I have included some pictures to help visually.

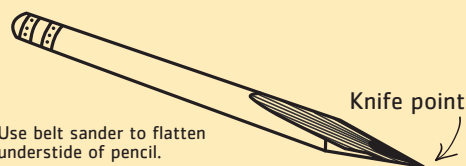
Photo 1 shows where to start with all cut to size. Line up the pieces and start to measure the top and down the sides (Photo 2). Photo 3 shows choosing where to place the holes to receive the dowels. Size is not that critical but I used 8mm in this project, but they should be sufficient to accept the chosen screws. Place dowels into drilled holes with some adhesive, removing excess adhesive with a damp cloth.

Cut them down and lightly sand them flush with the surface (Photo 4). Finally, Photo 5 shows the mating pieces screwed into place with no splitting. It is possible to tighten the screws really tight making the joint solid. Make sure the screws do not go too far through the dowels. Any slight gaps can be filled in with filler.

I think it is usual to paint the finished article which will hide the dowels. As we all know, Supawood is susceptible to moisture and damp as seen elsewhere in this magazine and this has proved to be very a very successful joint in the past.

John Watt, e-mail

Improving the pencil as a marking tool



Use belt sander to flatten underside of pencil.

I came across this very handy tip somewhere on the web and thought it very ingenious! All you need for this tip is a pencil and a stationary belt sander. Begin by sharpening your pencil extra sharp. Then remove one side at an angle on the sander to produce a flat side – maybe 2cm long – and a very sharp point. The extra step takes only a few seconds. Now you can hold your pencil flat and steady against a square or rule to produce a very close, sharp line.

James van Heerden, e-mail



WIN!

**A Tork Craft
172 Piece rotary
mini tool kit including a
135W Rotary tool with
a speed range of 8000-
32500 rpm.**

Send your bright ideas to:
editorial@homehandyman.co.za with
'Bright Ideas' in the subject line or
PO Box 24938, Gezina, 0031

Tork Craft
Power Tool Accessories



valued at R1273

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.

Congratulations to John Watt who wins a Tork Craft HSS 5-piece wood turning chisel set.

FAMILY
PROJECT

Bot Shop builds a kit for this project which you can find at www.botshop.co.za

This is a fun project to do with the kids that will increase not only their robotics skills, but also their creativity. Teach them to look around to find things to use that they already have. You can use any type of cup and a washing peg to make this arty robot

DIY recycled **ART BOT** project for kids

This project makes use of a 6V DC Motor Brush that will vibrate the robot, creating beautiful art for us. By adding the washing peg to the Motor Brush, we create a vibrating motor. You can also make multiple robots with different colours and even try building one with only three 'legs'. It is a lot of fun to watch.

What you need:

- A cup, preferably one that you can recycle
- A 6V DC Motor Brush
- A washing peg
- Double-sided tape
- Sellotape
- A battery holder
- Colour pens
- Two AA batteries

Easy steps to create your Art Robot

Step 1: Ask an adult to assist you by cutting two holes in the cup.

Step 2: Pull the red and black wires of the battery holder through a hole so that the battery holder will be on the inside of the cup.

Step 3: Put the batteries in the battery holder and stick the battery holder to the inside of the cup with double-sided tape.

Step 4: Connect the black and red wires to the motor. It doesn't matter which wire goes where. The only thing that will happen if you change the wires around is the direction in which the motor will turn.

Step 5: You can push the excess wire back into the cup. Secure the motor on the cup with double-sided tape. e wire you disconnected in step 4 after testing. Put the mini robot on a flat surface and see how your little robot moves and turns. If your robot falls over too easily, check if the vibrating motor and battery are centred in the middle of the toothbrush.

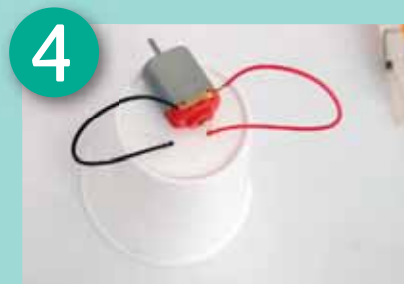
Step 6: Stick the colour pens to the cup with sellotape. You can try to build your robot with three legs or even more than four.

Step 7: Give your little artist some character by adding googly eyes. You don't have to stop there, you can add a

nose and a mouth, or just paint the cup real funky.

Step 8: Peg the washing peg on the motor shaft.

Step 9: Remove the colour pens' caps, switch on your artist and see the fun art it makes.



ASK OUR EXPERTS

Our panel of experts answer your questions on DIY problems

Resealing cement roof tiles

WINNER

The Coverland cement roof tiles on my house are still in strong, good condition (they are the type with colouring in the mix, not the surface only). I would like to know if it is necessary to paint or seal them in order to keep water absorption to a minimum? The surface of the tiles is not as smooth anymore as when they were installed yet the colour is still 100%. I don't want to go the paint/maintenance route if it is unnecessary.

Theo Pretorius, Gauteng

Ed replies: One common myth, often used by salesmen is that old concrete tiles will become porous and water will seep through them and into the property. Actually this doesn't happen at all. Old tiles that have had decades of weathering will keep rainwater out of the house regardless of whether they have a waterproof seal on the surface or not.

Because tiles are laid on a pitched roof (a sloped roof) water runs off the tile and onto the next tile below. The water continues like this until it enters the gutter. The way tiles are laid (i.e not flat)



means that even a porous material like concrete won't leak. Gravity pulls the water not into the roof but down onto the tile beneath – don't forget that all tiles are overlapped. That is how a porous material like clay or concrete can be used on roofs.

There are, however, advantages of sealing tiles, such as the fact that it will stop water from entering hairline cracks where it could freeze and potentially

crack the tile or roof cement (water expands when it freezes), and stops rainwater from weathering the surface of the tiles – possibly extending the life of the roof by a few years.

If you do decide to reseal the tile, ensure that they are cleaned thoroughly with a pressure washer before applying the sealant. The sealant will need to be applied every 3-5 years depending on the elements.

A Upat sponsored hamper including:

Durable red fischer toolbox | 500ml fischer PU Foam | 6mm and 8mm DuoPower wall plugs with accompanying screws | STABILA Toolbox Spirit Level (43cm) | STABILA BM Tape Measure (5m)

Send us your DIY queries and you could be a winner!

Send your queries to:

The Home Handyman DIY Queries | editorial@homehandyman.co.za or | P.O. Box 24938, Gezina, 0031

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

Please note: Queries will only be answered in the magazine. Winners' prizes may take up to six weeks for delivery and are sent by the prize sponsor. Prizes are not exchangeable.



Our winning query comes from Theo Pretorius who wins a Upat sponsored hamper.

Rusty tools

I live in Ballito Bay where we have a humidity problem. Recently, I noticed that the tools in my workshop, mostly the hand tools, have developed rust spots. I do clean the tools up after use with steel wool and rub on a little vegetable oil or petroleum jelly, but it can be a problem if I forget to wipe it off before working with wood. Any ideas? I am sure I am not the only one living on the coast with this problem.

M. Jackson, by email

Ed replies: Yes, there is a solution to your problem. First you would need to remove the rust using a rust remover such as Q/Rust. Once the rust is completely removed, you can use Lubricating Wax manufactured by Liberon and specially formulated to protect and prevent rust on metal hand tools and blades etc. Q/Rust is available from any hardware retail store and Liberon Lubricating Wax can be purchased from Hardware Centre who also offer a postal delivery service. For more information, call 011-791-0844.



Help with concrete floors

I have an enclosed area that I want to convert into a workshop. The area is 6 x 6m and I would like to have a concrete floor. Can you please let me know how much material I need to do the job? Your assistance will be appreciated.

Gerrit Du Plessis, Alberton

Ed replies: We will assume that the area is level. To calculate how much material you will need to cast a medium strength (20MPa) concrete surface bed, you would do it as follows:

- *Volume = (75mm/1000) thick slab x 6 x 6 = 2.7 cubic metre*
- *Yield per bag of cement is 130 litre (or 0.130 cubic metre)*
- *Number of batches: 2.7 cubic metre divided by 0.130 = 21 batches*
- *Nett materials required:*
 - *Cement = 21 bags (50kg each)*
 - *River sand = 21 bags x 120 = 2520 litre (= 2.52 cubic metre)*
 - *13.2mm stone = 21 x 80 = 1680 litre (= 1.7 cubic metre)*

The mixture ratio will be one part cement, three parts sand and three parts stone. Add enough water to produce a workable mix. Add 5% for waste, so for example you will need 22 bags of cement; 2.7 cubic meter sand and 1.8 cubic meter stone.

For added strength I would include steel weld mesh reinforcing to strengthen

the slab. You will need four sheets (6 x 2.4m) of Ref 193 weld mesh. You will have to level the area, compact it and fit the weld mesh.

If you want to top the floor with a 20mm thick screed your cement/sand ratio will be 1:5 (one bucket cement and five buckets sand).





Hanging bathroom fittings

Denis Lock explains how you can use your woodworking skills when hanging bathroom fittings

The developer from whom we purchased our retirement unit was a little stingy when it came to providing bathroom fittings. I had to add a shower hand-hold, two extra towel rails, two glass shelves above the basins, two mirrors above the basins and a retractable washing line above the bath. Drilling the 6mm holes to take wall plugs to hang these fittings presented me with three challenges. The first was to drill holes through the hardest ceramic tiles I have ever come across. The second was to drill holes that are dead horizontal or dead vertical. The grout lines between the tiles provide a reference for the eye and a slight departure from level would be immediately obvious. The third was to drill the holes the correct distance apart. The retractable washing line was particularly demanding in this respect.

Before doing any drilling in my bathrooms, I did some tests on a piece of scrap tile found on the builders dump heap. A standard masonry bit was useless. All it did was skid around on the surface of the tile without making any trace of a hole. A discussion with the owner of my local hardware store led to the purchase of the bit seen in photo 1. As a woodworker, I had not come across a glass and tile bit before. Note the important instructions on the card: no hammer action and maximum speed 300 rpm. The hardware store owner gave me two further instructions. The first was not to drill into concrete or bricks with this bit: swop back to a standard masonry bit after you have drilled through the tile. The second was to keep the bit cool by constantly spraying it with water. I drilled the first

few holes this way but found it a messy operation. A mug of cold water into which the hot drill bit was frequently dunked replaced the spray for the rest of the holes.

Photo 2 shows a test hole drilled using the ceramic bit. It also wanted to skid around but not nearly as much as a masonry bit. I am used to using a centre punch to mark and control my drilling into wood and metal. You can't take a centre punch to a ceramic tile! After a little bit of practice, I found that I could drill to within 2mm to 3mm of the mark. Photo 3 shows the attachment plate on the glass shelves I bought. These could cope with the type of error seen in photo 2. The towel rails and shower hand-hold used similar attachment plates and were also slightly forgiving.

>> Denis Lock



A glass and tile bit

Photo 4 shows the retractable washing line I installed. Photo 5 shows the attachment method. The double key-hole used to attach the main component of the line is totally unforgiving. The two screws over which this fits have to be accurate to within a half a millimetre. The two holes for the clip component have to be almost as accurate. These distances are shown as A and B in photo 5.

I achieve an accuracy of 0.1mm when working with wood. Surely I can achieve an accuracy of 0.5mm when drilling a couple of holes in a wall. On my Fundamentals of hand-held routing course, I focus on the six fundamental ways to control the router. Normally I can control a hand-held drill without any extra aid (other than perhaps a centre punch pop). For this job, I needed some help. >>



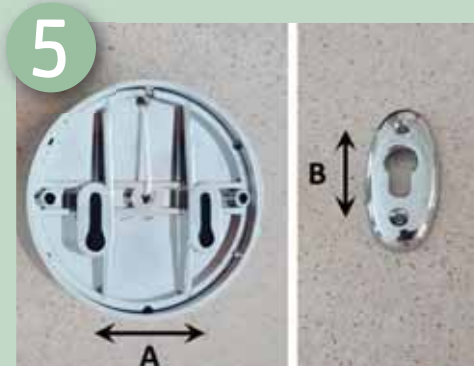
A sample hole



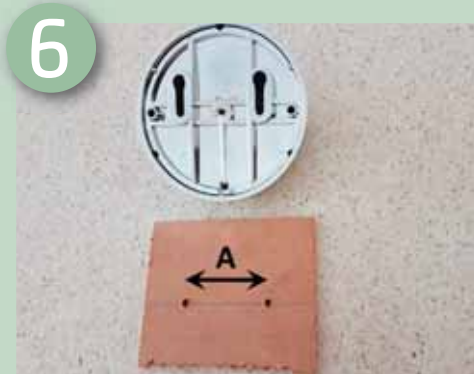
Mounting plate for the glass shelves



Retractable washing line

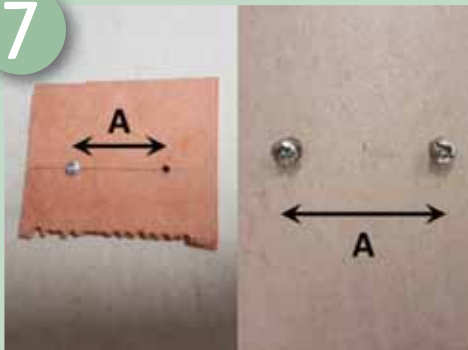


Hole distances



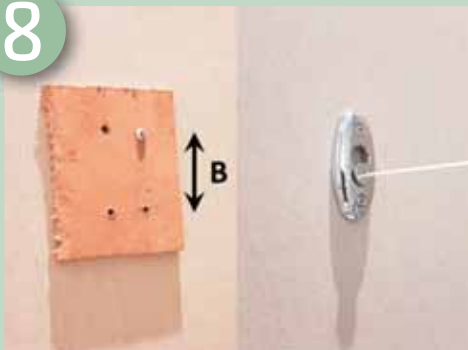
Drilling template

7



Template use and result

8



Template modified and reused

9



Hang your washing on...

10



Marking out the shelf template



Reflecting on the ways that I control a router, I decided that I needed a template. I first determined the distance between the screw holes on the two components (photo 5). Instead of trying to measure from centre to centre, I measured from the left hand edge of one hole to the left hand edge of the other. I did not use a rule; I used a pair of dividers and transferred the distance. Photo 6 shows the template for the main part of the washing line. It is a piece of 6mm MDF with two 4mm holes the same distance apart as A in photo 5. Are you puzzled by the ragged edge at bottom of the template? I didn't have a saw with me to cut the template to length so I drilled a series of overlapping holes and snapped it off.

The left hand side of photo 7 shows the template in use. The position of the two screw holes were marked (using an HB pencil). The left hand hole was drilled (as discussed at the start of this article and shown in photo 2). The fact that it is a few millimetres out doesn't matter. The second hole is the critical

one. A wall plug was fitted and the template screwed up tight to the wall after levelling it with a spirit level. The wall plugs that came with the fittings I bought were of dubious quality so I replaced them all with Fischer plugs.

A 4mm masonry bit was used to mark the position of the second screw by drilling through the hole in the template. I only made a small pop mark on the tile. The template was unscrewed and removed and the pop mark was used to accurately start drilling through the tile with the 6mm glass and tile bit. Once through the tile, the hole was completed with a 6mm masonry bit. The result after screwing two 4mm screws is seen on the right hand side of photo 7. These two screws are dead level and the correct distance apart. The simple template worked!

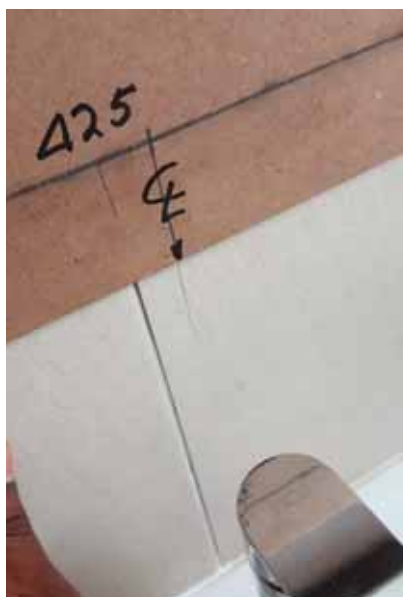
Photo 8 shows the template (modified for distance B) used to drill the two holes to take the second part of the washing line. The resulting two holes are perfectly vertical and the right



distance apart. The clip fits correctly as can be seen in photo 8. The washing line in use can be seen in photo 9. So, you can drill accurately placed holes in very hard ceramic tiles. Heartened by this success I confidently tackled the hanging of glass shelves, towels rails, mirrors and a shower hand-hold.

The first step in making a template to install glass shelves is seen in photo 10. This template had four holes in it. In photo 11, the first hole has been drilled in the wall above the basin. The template has been firmly screwed to the wall and is being levelled. The remaining three holes were drilled using the same procedure as above. As can be seen in photo 12, these four holes are level and the subsequent fitting of the shelf confirmed that they were accurately spaced. They had to be: that is what template drilling is about.

The proof in the pudding is in the eating. Look at photos 13 and 14. I will certainly be doing more template drilling on future projects.



ABOUT DENIS:



Denis Lock runs a woodworking school and shop in Midrand, Gauteng. He can be contacted at denis.lock@worldonline.co.za or 082-267-5948. Visit his website at www.routingwithdenis.co.za
Copyright © 2019 – DN Lock

11



Setting up the shelf template

12



Ready to mount shelf

13



14



That is level!

WOODWORKER'S CORNER

Sharing techniques, ideas and a love of wood

Top tool review

The Pocket-Hole joint system, one of the most innovative wood joining systems, is supported by a range of Kreg tools and equipment to do various jobs. Creating a pocket-hole joint is easy with a Kreg® Pocket-Hole Jig; it's as easy as a drill and drive. To understand how a pocket-hole joint comes together, we look inside to see just how great and unique the Kreg system and tools are.

A Kreg Pocket-Hole Jig is set up to match the thickness of the material you're working with. When you drill, the very tip of the pocket hole is positioned roughly at the centre of the material's thickness. This ensures that there's plenty of wood around the hole for maximum strength.

1. The angle creates the oval

As you drill, the stepped drill bit enters the wood at a 15° angle. That's what creates the distinctive oval shape. The Pocket-Hole Jig ensures this angle is consistent and that the bit is held steady as you work, making the process of drilling an angled hole fool proof.

2. Double-duty drill bit

If you look 'inside' the material again, you can clearly see what happens as you drill the pocket hole. The special stepped drill bit does two things: the smaller tip drills a pilot hole for the screw, while the main part of the bit drills the pocket that the screw fits into.

3. Parts of the pocket

A cutaway view of the pocket hole shows all the elements in another way. At the base of the pocket, there's a flat ledge

that the head of the screw will contact. The pilot hole continues almost but not quite all the way to the end of the board. It stops short for good reason: to prevent the wood fibres from 'blowing out' as the bit exits the material. That way, there's nothing to interfere with this piece fitting tightly against the mating piece.

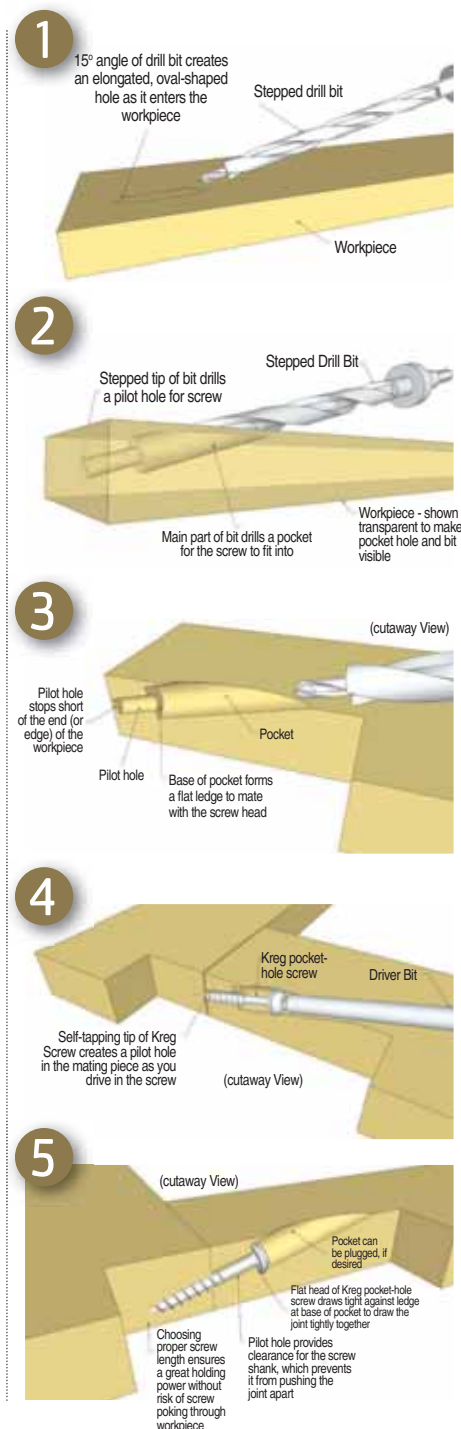
4. Self-tapping screws keep it simple

The pocket hole makes this type of joint possible, but it's the Kreg Pocket-Hole Screw that pulls it all together. As you drive the screw in, the pocket and pilot hole guide the screw precisely, while the screw's self-tapping tip drills its own hole into the mating piece. That means you don't have to drill into both pieces, and you get great holding power without splitting or stripping the wood.

5. Kreg screws pull it all together

As you tighten the Kreg Pocket-Hole Screw, it pulls the joint tightly together. The process is simple, but there are several things going on that make it possible. For starters, the upper part of the screw doesn't have a thread. That allows it to turn easily inside the pilot hole and pull the pieces together, rather than driving them apart. Secondly, the flat underside of the screw mates perfectly with the ledge at the base of the pocket. This way, the head pulls the joint tightly together to create a strong, lasting joint.

For more information, contact, Vermont Sales on 011-314-7711 or visit their web site www.vermontsales.co.za



Woodworking associations

The recently concluded Hobby-X Joburg show, which took place at the Ticketpro Dome in Northgate, provided local woodworking associations the unique opportunity to take their passion and skills to the masses. Both the Woodworking Association of Pretoria and the Witwatersrand Woodworking Association took stands at the show where members showed off their work, performed demonstrations of their craft and showcased woodworking to visitors of the show.



The Witwatersrand Woodworking Association was well represented at Hobby-X. From left to right: Poena Coetzee, Willie Pretorius, Aldo Grobbelaar (from Tormek Sharpening Sytems), Schalk van Niekerk and Pierre Grobbelaar (from Tormek Sharpening Sytems)



From left to right: Klaus Coetzee, Braam Burger, At Smit, Carel van der Merwe, Paul Roberts and Marius du Toit (seated), from the Woodworking Association of Pretoria



Frans Joubert and Roger Mayes at the Witwatersrand Woodworking Association's stand



Coconut oil, one of the best, most versatile finishes, can be used for a warm, not too shiny and easy-to-take-care-of wood finish. Much easier to deal with than traditional wood oil, the coconut oil finish will leave your wood glowing. It hides imperfections and scratches too.





**Woodworking
Association of Pretoria**

**Wood Expo and
Craft Festival**

5 October 2019 - 08:00-15:00
6 October 2019 - 08:00-14:00

Adults: R30 / Scholars: Free
New Hope School | 163 Cecilia Road
Ashlea Gardens | Pretoria

Refreshments sold in aid of New Hope School

<http://ptawoodworkers.com>
<http://nuwehoopskool.co.za>

Sponsored by:



POWERDEK

620 Steyns Biko Rd
Glenol Pretoria
012 335-1853
2 Midburn Avenue
Benoni 1918
087 015 0074

WOODWORKER'S CORNER

Sharing techniques, ideas and a love of wood



Iroko (*Milicia excelsa* and *M. regia*)

>> Stephanie Dyer

This popular hardwood, used extensively in South Africa, is produced by large deciduous trees from tropical Africa. The wood of two closely related species, *Milicia excelsa* and *M. regia*, is marketed as iroko.

In the past, iroko was mainly sourced from East Africa and it was often used as a substitute for teak (*Tectona grandis*). However, supplies from this region have dwindled and today West African countries export large quantities of the timber. This has resulted in both iroko species being included in the IUCN Red List of threatened species (*Milicia excelsa* as 'Near threatened' and *M. regia* as 'Vulnerable'). The Ivory Coast government has gone as far as prohibiting the exportation of iroko in log form.

Iroko wood has an attractive golden brown colour, with slight lustre and greasiness. The density of air-dried wood is variable and ranges from 470 to 850 kg/m³, with an average of 650 kg/m³.

The wood is hard, strong, stable and very durable and can be used with confidence where strength is important. Iroko is suitable for a variety of exterior and interior applications, including boat building, bridge building, marine piling, railway sleepers, decking, flooring, furniture, church pews, window frames, doors, plywood, decorative veneer, panelling, chopping blocks, carving and turnery. In the past was used for laboratory workbench tops because of its resistance to chemicals.

Despite the toughness of the wood, it is quite easy to work by hand or machine. Interlocked grain may lift during planing and a reduced cutting angle is recommended. Iroko sometimes contains 'stone' inclusions that can cause moderate to severe blunting of tools. It has good nail- and screw holding properties and glues well. The wood responds satisfactorily to surface treatments and has moderate steam bending properties. Iroko reacts



Iroko. Photo by Colin Dyer

to contact with iron, resulting in black markings in the wood. It is important to take precautions when working with iroko as processing wet or dry wood may cause skin and eye irritation.



Church pews made from iroko in the Our Lady of Peace Basilica in Honolulu

COFFEE CORNER

From our workshop to yours

Meet the team

Gregg Cocking is the newly appointed editor of *The Home Handyman* magazine, having previously worked on the publication as a writer, editor and managing editor from 2001 to 2008.

Tell us a little about your career

I have been in publishing since 2001 when I started working with Wordlink Media, a company run by Kay Montgomery. I remember my first published article appeared in *The Saturday Star* and it was on how to prune roses (my folks still come twice a year to prune the roses in my garden!)

After eight years working on *The Home Handyman* (THH) as well as a business-to-business magazine called *DIY Trade News*, I found myself in architectural writing and as editor of a leading print magazine. In addition, I started my own digital, interactive magazine focused on African architecture and more recently, an architectural website. I started my own community newspaper in 2013 (for the Greenstone area in Johannesburg) and ran that successfully for five years.

Through the years I have found myself writing and editing magazines and books on various topics, including scuba



diving, music, lighting, electrical, environmental issues and estate living.

What are your hobbies?

The nature of the publishing business and its constant deadlines, coupled with three children and two dogs leaves little time for hobbies! I do, however, love music and when not listening to it, I play both the guitar and the bass guitar. On weekends, if there are no DIY tasks which need attending to around

the house, you'll often find me on the couch watching some cricket or soccer.

How do you find working on *The Home Handyman*?

It feels great to be back! Just a few weeks after starting on the magazine again, I was at the THH stand at Hobby-X and the positive feedback we received from readers who were happy to have the magazine back was amazing. The publishers, Hannes and Wilma Lindeque, have been very helpful and supportive and I think we have a great team of contributors, salespeople and designers to take the magazine from strength to strength.

Simple DIY hacks for the home

- Use a blob of toothpaste on the back of a picture frame to mark where to drill or nail when hanging a picture frame.
- Use ice cubes to remove those annoying furniture dents from carpet... Let them melt, and then vacuum or gently lift the fibres with a spoon.
- No need for fancy hand tools with built-in LED lights; opt for a lighted screwdriver hack instead. When working in a dark space such as inside a cupboard, make your own lighted screwdriver by taping a keychain-size flashlight to the shaft. It will shine the light right where you need it.
- Slip PVC pipes over the handles of your pruning shears and tape them in place to extend your reach and clip high branches without a ladder.
- Here's an easy way to tear masking tape and get a starting edge at the same time; fold the tape under at a 90-degree angle to the roll. Then, with a snapping motion, pull the tape against the edge of the roll. The tape will tear, leaving a triangular starting tab.

Click and connect

Our website: www.homehandyman.co.za | Go to www.facebook.com/TheHomeHandymanmagazine and 'Like' us
Follow The Home Handyman magazine on Twitter @TheHomeHandymanmag



GARMIN

MARQ™ COLLECTION

FORGED FROM OUR DNA. AUTHENTIC IN EVERY DETAIL.



Garmin unveils the MARQ Collection

a series of lifestyle inspired connected tool watches,
crafted to champion the life you live

Garmin International, Inc. in celebration of its 30th anniversary, announced the MARQ Collection, a series of connected tool watches of traditional watch manufacturing quality, forged from Garmin's long-standing heritage in the aviation, automotive, marine, outdoor and sport markets. Garmin has redefined the multisport watch market, and now, it's created the ultimate connected timepieces, equipped with the modern utility of smart features – MARQ Aviator, MARQ Driver, MARQ Captain, MARQ Expedition and MARQ Athlete – each designed and engineered for those inspired by their passion in flying, racing, sailing, exploring and sports performance.

"For the past 30 years, we've created products that have fuelled people's passions," said Dan Bartel, Garmin Vice President of Global Consumer Sales. "And now, we have reimagined the tool watch with MARQ, a series of extraordinary connected instruments, authentic in every detail, an inspiration for new adventures."

The MARQ Collection uses very select materials, meticulously crafted and designed with the utmost attention to quality that help guarantee performance in the most demanding of environments. It represents an authentic outward expression of

its owners' highest aspirations. Each watch is built from titanium, which is lightweight, yet incredibly strong. Combined with a domed sapphire crystal for ultimate scratch resistance, this creates the solid core for all MARQ watches. To complement the character of each MARQ watch, an innovative premium strap or bracelet completes the look, allowing owners to match their style with Garmin's interchangeable QuickFit strap solution.

The watches feature an always-on, sunlight-readable display, performance GPS and advanced sensors like wrist-based heart rate and wrist-based pulse ox to track a wide variety of sport activities like running, cycling, swimming, fishing, skiing and more. It also provides premium smartwatch functionality including built-in music storage, Garmin Pay™, smart notifications and advanced activity tracking for everyday use. And for those on extended ventures, the battery life ranges from 12 days in smartwatch mode to 28 hours in GPS Mode and up to 48 hours in UltraTrac mode.

With advanced features specific to each model and materials carefully chosen for each category, the MARQ Collection is crafted with precise attention to detail. Each timepiece in the collection is built with the strict dictate of purpose, in both form and function.

For additional information on new products, features, pricing and availability regarding Garmin Southern Africa's (GSA) products and services please contact marketingteam@garmin.co.za or visit www.garmin.co.za

MISSING AN ISSUE?

To order back issues for **only R22 each**, use the order form below to obtain previous available editions.
For orders outside South Africa please phone for a quote.

Recent digital back issues can be ordered from the publisher

JANUARY 2012



- Top The Home Handyman projects
- Make a garden archway
- Install a shower

FEBRUARY 2012



- Wall cladding
- Construct a garden gate
- Make a child's rocking horse

MARCH 2012



- Redesign a bathroom
- Build a garden shed
- Install a countertop and sink

APRIL 2012



- Protect and secure your home
- Construct a flower stand
- Install your own cabinets

MAY 2012



- Repair problem plaster
- Install an outdoor light
- Make a wine rack

APRIL 2013



- Underfloor heating
- Woodturning inlay work
- Make a home gym bench

MAY 2013



- Natural stone flooring
- Paint and wall coverings
- Child-safe kid's rooms

JUNE 2013



- Insulate your home
- Make a metal bed
- Energy-saving water heating

JULY 2013



- Cure damp problems
- Make a candle holder
- Trendy concrete floor ideas

AUGUST 2013



- Garden drainage
- Make a garden hose holder
- Waterproof your roof

JULY 2014



- Revamp your kitchen
- Construct wooden bunkbeds
- Build a patio roof

AUGUST 2014



- Garage door facelift
- Make rustic picture frames
- Construct a wendy house part 1

SEPTEMBER 2014



- Jazz up your outdoor area
- Install drip irrigation
- Garden terracing

OCTOBER 2014



- Pools for small gardens
- Prune your plants
- Make a garage trolley

NOVEMBER 2014



- 8 ways to live sustainably
- Harvest rainwater
- Wood protection

• Order these and more online on www.homehandyman.co.za •

YES! I would like to order the following:
(please tick)

- | | | | | |
|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <input type="checkbox"/> Jan '12 | <input type="checkbox"/> Jan '13 | <input type="checkbox"/> Jan '14 | <input type="checkbox"/> Jan '15 | <input type="checkbox"/> Jan '16 |
| <input type="checkbox"/> Feb '12 | <input type="checkbox"/> Feb '13 | <input type="checkbox"/> Feb '14 | <input type="checkbox"/> Feb '15 | <input type="checkbox"/> Feb '16 |
| <input type="checkbox"/> Mar '12 | <input type="checkbox"/> Mar '13 | <input type="checkbox"/> Mar '14 | <input type="checkbox"/> Mar '15 | <input type="checkbox"/> Mar '16 |
| <input type="checkbox"/> Apr '12 | <input type="checkbox"/> Apr '13 | <input type="checkbox"/> Apr '14 | <input type="checkbox"/> Apr '15 | <input type="checkbox"/> Apr '16 |
| <input type="checkbox"/> May '12 | <input type="checkbox"/> May '13 | <input type="checkbox"/> May '14 | <input type="checkbox"/> May '15 | <input type="checkbox"/> May '16 |
| <input type="checkbox"/> Jun '12 | <input type="checkbox"/> Jun '13 | <input type="checkbox"/> Jun '14 | <input type="checkbox"/> Jun '15 | <input type="checkbox"/> Jun '16 |
| <input type="checkbox"/> July '12 | <input type="checkbox"/> July '13 | <input type="checkbox"/> July '14 | <input type="checkbox"/> July '15 | <input type="checkbox"/> July '16 |
| <input type="checkbox"/> Aug '12 | <input type="checkbox"/> Aug '13 | <input type="checkbox"/> Aug '14 | <input type="checkbox"/> Aug '15 | <input type="checkbox"/> Sept '16 |
| <input type="checkbox"/> Sept '12 | <input type="checkbox"/> Sept '13 | <input type="checkbox"/> Sept '14 | <input type="checkbox"/> Sept '15 | |
| <input type="checkbox"/> Oct '12 | <input type="checkbox"/> Oct '13 | <input type="checkbox"/> Oct '14 | <input type="checkbox"/> Oct '15 | |
| <input type="checkbox"/> Nov '12 | <input type="checkbox"/> Nov '13 | <input type="checkbox"/> Nov '14 | <input type="checkbox"/> Nov '15 | |
| <input type="checkbox"/> Dec '12 | <input type="checkbox"/> Dec '13 | <input type="checkbox"/> Dec '14 | <input type="checkbox"/> Dec '15 | |

See our website for more recent issues

No. of copies ordered: x R22.00 each = Total R

Name:

Address:

..... Code:

Tel: Cell:

Email: Signature:

Please make a direct deposit / EFT into our bank account:

Account holder: BB Print

ABSA Bank

Branch code: Ben Swart - 632-005

Cheque account: 404-881-8651

Reference: "Sub+HH+ surname + initials" (Example: SubHH-Lindeque, G)

Fax/email the form and proof of payment to 086-234-5052

(Please note: there is an additional fee of R39 if payment is made in cash)

Price valid until 30 June 2019

DIY therapy 101

About Annalien:

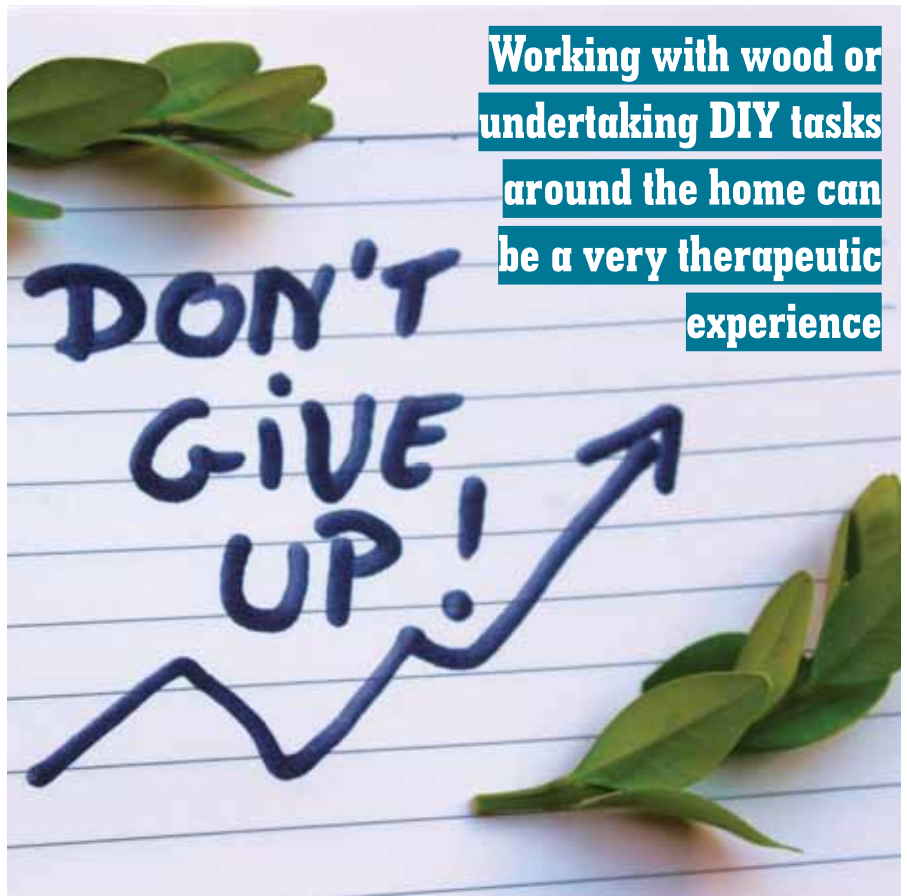


Annalien started her career at the SABC on 50/50 before moving to Germany after she met her husband. Later, they returned to South Africa and she took on various working freelance projects, eventually getting hooked on DIY. Annalien is part of the team on *The Home Channel's Get It Done!* series.

When you speak to any woodworker, he or she will admit that working with wood is the best therapy for the soul. Yes, even when there are challenges involved, wood is brilliantly forgiving and does not judge. Let me explain myself...

I have seen a piece of the cheapest and roughest wood blossom into a beautiful piece of furniture through some sanding, love and oil. Is that not the same with people?

Quite often, when we are going through difficult periods in our lives, those are the moments where our rough edges, dirt and splinters are "sanded" off to bring to light our strength and beauty. Yes, those sanding periods aren't easy and can be hurtful, but how we react to them can either let us flourish or



Working with wood or undertaking DIY tasks around the home can be a very therapeutic experience

become splintery and feeling sorry for ourselves.

It is the love of the carpenter who sees possibilities in the wood and knows where to give and take. Shouldn't we love people the same way? How often does it only take one smile from a cashier or car guard to change your attitude when you are having a bad day? We are also carpenters to people around us. Be more kind... even to those surly and rude ones. We don't know their pain, so let us be their oil to bring out the beauty, or simply just make somebody else's day better.

One of the things Peter du Bruyn, my co-presenter on the TV show said still sticks with me today, "When things go wrong while DIYing, don't despair, it's an excellent opportunity to re-evaluate your design." Boy, did we sometimes have to re-evaluate! Even the producer and camera crew had to give advice. Taking a coffee break with cake always

>> Annalien Grensemann

helped and then creativity kicked in. Normally it was Peter to the rescue and we always ended up with a nifty project.

Life doesn't always go the way we planned, but never give up. Sit back, relax, eat cake (my advice) and re-evaluate. Most times following the new path is the best in the end.

Wood is not judgmental as I said at the beginning of the article. I love going into my workshop with long manicured nails, no make-up, comfortable clothes and flip-flops and play Led Zeppelin with only my dogs for company. Yes, the long nails were a big concern to a lot of DIY'ers when they saw me working on the TV show, but the wood doesn't mind. I have an awesome time working, cutting, sanding, re-evaluating, and then eventually standing back to enjoy the final product. For that period, my worries, sadness and even the smallest bit of depression disappear and I can say, "Look what my hands made" and smile.



BOSCH

Invented for life



The convenient way to achieve high-precision drilling results

PBD 40 Bench Drill

- The electronic digital display permits an exact speed setting in line with requirements while Bosch Constant Electronic ensures consistent speed
- The innovative digital display enables easy reading of the exact drilling depth
- Integrated laser to assist with drilling: for easy, precise drilling
- The rotating wheel with integrated softgrip allows for a controlled, comfortable drilling rate



BoschDIYSouthernAfrica



@BoschDIY_SA

www.bosch-do-it.com

 MyBosch

**3 year
warranty**

Welcome to MyBosch
Your world for home & garden

Get three instead of one year warranty on your DIY power, garden and measuring tools from Bosch. Visit www.mybosch-tools.com to register





Proven Quality and
Reliability you can trust



A SMART WAY TO START



DHP453RYE Cordless Impact Driver Drill Kit

Capacity:
Steel: 13mm, Wood: 36mm
Masonry: 13mm

Impacts (i/min):
High: 0 - 19,500, Low: 0 - 6,000

No Load Speed (r/min):
High: 0 - 1,300, Low: 0 - 400

Included in the carry case:

- 1 x DC18RC Fast Charger
- 2 x BL1815N 1.5Ah
18V Lithium-Ion batteries
- 1 x DHP453 Impact Driver Drill



Compact and lightweight - the
DHP453 18V Cordless Impact
Driver Drill is the perfect choice for
all those drilling and screw driving
projects that need doing around the
home and business.



**Bits not
included**



For more info or your nearest Makita dealer contact Rutherford:
JHB: 011 878-2600 • CT: 021 932-0568 • DBN: 031 717-6400

www.makita.co.za

Rutherford
a member of the **Hudaco** group