

# Simulated woodgrain for metal boxes

by [amz-fx](#) on February 15, 2008

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## intro: Simulated woodgrain for metal boxes

This instructable shows how to prepare a metal box using a buffing technique that can simulate wood grain, birdseye or other finishes. The technique gives dimension to the box that adds visual depth to the surface.

It is easy to do and allows you to create a variety of nice finishes with little extra effort.



## step 1: Items Needed

The box that I am preparing is a small cast aluminum box that typically has a rough finish in the raw. This one is similar to the Hammond 1590B.

Every aluminum box should be sanded before painting to remove the oxidized aluminum from the surface so that the paint can adhere better to the base metal.

For this type of brushed or buffed finish, I am using an abrasive wheel that mounts in a hand drill.

The red and gray wheels are similar but the latter is a finer mesh that produces a smoother finish. The material seems to be some sort of tough nylon woven fiber much like the 3M abrasive pads that are commonly available.

I bought these buffing wheels in a kit at Harbor Freight.



## step 2: Buffing the surface

The key to getting the grain lines and 3D effect is to use the buffing wheel at an angle.

Go over the entire surface of the box. Typically I start at one end and work my way to the bottom of the box face. Move the angled drill side-to-side and you will see a buffed and highlighted pattern emerge in the aluminum.

It is readily produced and if you make a mistake, all you have to do is buff over it to remove the error.

The sides of the box can be flat sanded or buffed with the abrasive disk to add some dimension.



## step 3: The pattern appears

After a few passes across the box, the pattern will begin to appear.

It is important to buff the entire surface of the box to remove the oxidation.

Usually, I do the edges before starting on the face or sides of the box.



## step 4: Wire Brushing

A soft brass brush can also be used to pattern the box surface but I find that it leaves too many scratches in the soft aluminum.

In this example, the top half of the box has been scarred with the brass brush and the bottom with the abrasive pad.



### step 5: Drilling Holes

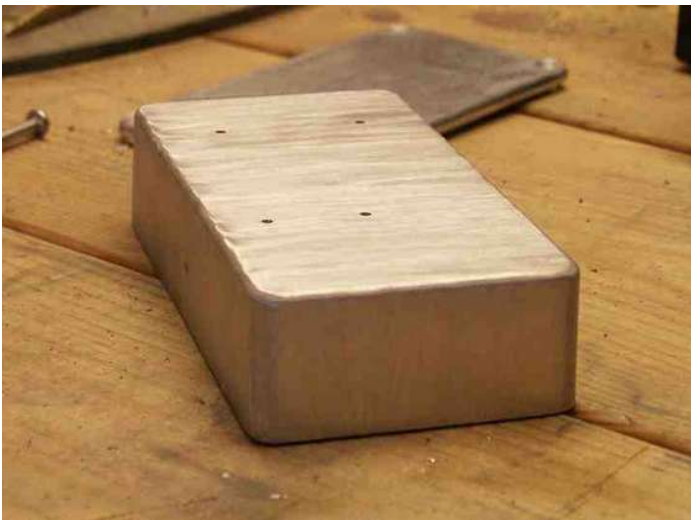
Since this is a guitar effects pedal and requires holes for the controls and the audio jacks, I usually mark the holes and drill once the surface has been completed.

Here you see a template printed on clear mylar with the position of the various elements that are to be added during final construction.



### step 6: Closeup

The pilot holes are drilled and you can see some of the buffed pattern in the surface. Once the final holes are drilled, the box is ready for painting.



## step 7: Painting

For the wood grain finish that I am using on this box, two coats of paint are used.

Krylon X-Metals is a type of paint that remains transparent after drying and allows the look of the buffed surface to show through. It is available in several different colors and I bought that can at Hobby Lobby (\$5.97).

After the clear yellow layer has dried sufficiently, I spray the box with a red transparent paint. In this case it is Duplicolor Metalcast red which came from an auto parts store, as shown in the second photo.

A second layer of red was applied to darken the finish and remove some of the orange cast. A rich mahogany-like surface will be revealed.



## step 8: Final boxes

Other paint colors and buffing patterns can be used on the box surfaces. These were sprayed with Duplicolor Metalcast green only. Testors also offers some spray paints that are available in transparent colors.

The box on the left has a birdseye pattern made by moving the buffing pad in small circles as it is worked across the surface. In this case, I flat-sanded the surface of the box before coming back to add the pattern.

The box on the right was buffed in two passes, each only going to the centerline of the box. This produces a bookmatched imitation.

The surfaces are hard to photograph and capture the 3D effect produced.

Try some different buffing patterns and paints for an unusual custom finish!

More free DIY info is available on my web site: <http://www.muzique.com/>



## Related Instructables



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**Lo-fi Arduino Guitar Pedal** by kylemcdonald



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## Comments

29 comments [Add Comment](#)



**sashadaltan43** says:  
This is soooooooooo cool!

Jul 25, 2008. 9:39 AM [REPLY](#)



**shop dweller** says:  
I like it. Very nice technique.

Feb 27, 2008. 12:20 AM [REPLY](#)



**nkw6** says:  
Looks good but if you want to make it more convincing and happen to have a mill lying around chuck up a flycutter and play around with the autofeed. The table has to be pretty dang level but you get some sick grain effects.

Feb 25, 2008. 5:12 PM [REPLY](#)



**craig f** says:  
do you also seal it with clear coat?

Feb 22, 2008. 8:39 PM [REPLY](#)



**amz-fx** says:  
Yes, a clear coat is a good idea since the transparent paint chips easily.  
regards, Jack

Feb 24, 2008. 5:55 PM [REPLY](#)



**halitus87** says:  
just fyi you wont be removing the oxide layer from aluminum, as with this type of metal it forms a coherent layer around the metal protecting the rest of it from oxidation, still sand it of course i still agree thats very important

Feb 22, 2008. 6:54 PM [REPLY](#)



**Tazzz** says:  
Easy solution and looks nice. Good woodworking practice however would be to make the grain run parallel to the long side on top, not across. Also the sides grain pattern should match (an extension) of the top grain.

Feb 22, 2008. 7:53 AM [REPLY](#)



**Shocker** says:  
Just a comment on the box used. The box is made by Hammond as described. In Canada, I order part 1590 not 1590B. The "1590B" stands for black with an extra cost of \$2.00 and the "1590" is just bare aluminum. Great supplier online is Digi-Key at digikey.com. If I order in the morning I receive product next afternoon, usually with only about a 4-8 dollar shipping charge.

Feb 21, 2008. 7:29 PM [REPLY](#)

I have found that paint is available from hobby shops, look for tail light paint for model cars.



**amz-fx** says:

1590B designates the box size (unpainted). 1590B-BK is the same box with a black finish.

Here is the manufacturer's datasheet that confirms:

<http://www.hammondmfg.com/pdf/1590B.pdf>

Thanks for the tip on the paint!

regards, Jack

Feb 22, 2008. 4:13 AM [REPLY](#)



**technodude92** says:

Awesome finishing technique. if i ever get around to making something that i can put in a box. fav'd and (+)

Feb 21, 2008. 8:59 PM [REPLY](#)



**rotter** says:

Pretty cool finish effects. Would be interesting to do a woodgrain finish on a bike.

Feb 21, 2008. 4:37 PM [REPLY](#)



**GorillazMiko** says:

This is actually a really awesome Instructable. Looks just awesome, awesome, this just deserves a +1 rating.

Feb 15, 2008. 4:46 PM [REPLY](#)



**sysadmn** says:

I found some "Contact" brand adhesive vinyl at an Office Supply Store that looks just like brushed stainless steel. It works great on flat surfaces (even boxes and round hat boxes) but you have to work slowly and not create bubbles. They also had faux suede (looks like a sanded brown paper bag, and feels great) and a slick white "make your own whiteboard". I used the whiteboard cover on my cubicle's bookshelf covers for an instant whiteboard.

Here's the info from the label:

Kittrich Magic Cover Faux Metal Stainless

The closest I could find was

[http://www.kittrich.com/MC/Regular/adhesive\\_woods.htm](http://www.kittrich.com/MC/Regular/adhesive_woods.htm)

Looks like Kittrich owns the Contact brand, but this product is discontinued.

Feb 18, 2008. 11:37 AM [REPLY](#)



**Frank in Virginia** says:

Nice job on the Instructable! I like the flexibility of your buffing and brushing techniques; if you don't like the look, keep on going. Thanks for posting. BTW have you tried your techniques on plastic boxes?

Feb 18, 2008. 6:32 AM [REPLY](#)



**TheScientist** says:

do you need to clearcoat to help protect the surface? or is it good enough as-is?

Feb 17, 2008. 3:22 PM [REPLY](#)



**amz-fx** says:

I would definitely put a clearcoat on it.

The buffed grain pattern is very tough but the transparent paints seem to chip somewhat easily.

Feb 17, 2008. 5:41 PM [REPLY](#)



**amz-fx** says:

Here is an image of wood grain produced with an entirely different technique than the one in my instructable.

<http://www.muzique.com/tmp/goldtop2.jpg>

There is no buffing with this method and the grain effect is much different. This is strictly a paint effect.

Feb 16, 2008. 7:36 AM [REPLY](#)



**Ohm** says:

That is just an awesome idea, I might have to disassemble a few of my pedals and refinish them, I think my Phase 45 clone would look good in the green, don't know way but I have always imagined it to be green?

Thanks for sharing the technique.

Feb 15, 2008. 9:03 PM [REPLY](#)



**Geordiepom** says:

What a great idea. So far I've only managed to find tiny quantities of transparent paint from air-brush suppliers. If any fellow Aussies know where I can get something similar to the stuff used here, please let me know.

Feb 15, 2008. 11:16 AM [REPLY](#)



**richms** says:

Same if anyone knows where to get something similar in NZ too thanks. I was going to paint my nixie clock base matte black, but this is a much much better option.

Feb 15, 2008. 6:37 PM [REPLY](#)



**darkmuskrat** says:

Lol, i was looking at how i could make a wood box look metal but this kicks ass too. definably +1

Feb 15, 2008. 3:21 PM [REPLY](#)



**razor1000** says:

Where'd you get the box itself? Is it hand-made or can you purchase them somewhere?

Feb 15, 2008. 1:52 PM [REPLY](#)

I'm working on a project that needs a nice box and I don't want to put into a crappy plastic radio shack box.



**amz-fx** says:

The box is a Hammond 1590B and is available at Mouser.com or Smallbearelec.com

Feb 15, 2008. 2:59 PM [REPLY](#)



**conceptualstratagem** says:

Thanks for sharing this, it will definitely help tinkerers give their projects a finished quality. Great first instructable +faved

Feb 15, 2008. 2:37 PM [REPLY](#)



**John Smith** says:

Simply AWESOME.

Feb 15, 2008. 2:36 PM [REPLY](#)

A+. Favorited.



**its a lion** says:

This is great. I love the flamed and quilted look of the last two pictures.

Feb 15, 2008. 12:16 PM [REPLY](#)

What type of pedal is it?



**matseng** says:

Looks great. I'll see if I can find the Krylon-X paints here also.

Feb 15, 2008. 12:09 PM [REPLY](#)



**mrmath** says:

So the grain patter is the buffed part, and the wood color is just two coats of "transparent" paint.

Feb 15, 2008. 11:15 AM [REPLY](#)

Amzaing. In the pictures on this page I would have sworn it was wood.



**amz-fx** says:

Exactly.

Feb 15, 2008. 11:30 AM [REPLY](#)

By applying more coats of the transparent red, you can darken the color but with one yellow and one red coat, it is a warm mahogany.

Check the last page for the bookmatched look.

regards, Jack