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corrugated roofing from aluminum cans

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Topic:

Topic author: bvdr

Subject: corrugated roofing from aluminum cans

Posted on: 06 Mar 2007 23:20:10

Message:

I have a start on my project,the cans are cut to size 2 1/4"x 4 1/4".My question is about anealing the aluminum before or after the sheets are crimped? And how do you anneal the metal,can it be done in the oven,how long and what tempeture? HELP

Fred 

Replies:

Reply author: Richard Weatherby

Replied on: 07 Mar 2007 16:17:50

Message:

There are numerous topics under other headings such as "Buildings," that may discuss working with the cans. I consider myself a professional can cutter, cooker, and crimper. My technique of annealing uses my pellet stove. I have found that the can should not come in contact with direct flame, as the aluminum will turn into melted tissue paper which will re-solidify into a hard unusable mess. The temperature seems to be just right around 650 degrees F. I can tell when the aluminum dis-colors and cooks the interior coating on the can. Mine seem to turn great collors of rusty brown, but it flakes off and disappears in the outdoors. I have heard people say that they have done this in their oven on a "clean" cycle but you better get that info from some who has done it. Others have indicated that they have done it in the barbeque, but again someone else should chime in on this. I suppose you could also do it around the edge of a fireplace but no guarantee. Use an oven thermomter. At the right temperature, I can seem to cook a dozen cans in 30 minutes. I nest then in 4 groups of 3 each. If necessary I can post photos. This is not a process that is reccomended nor endorsed by anyone. This topic should probably be moved to "Buildings."

Reply author: bob7094

Replied on: 07 Mar 2007 19:50:52

Message:

It's been a few years since I last did this, but I ran aluminum from soda cans through the crimper with no heat treatment at all.

Reply author: CJ Allan

Replied on: 07 Mar 2007 21:30:22

Message:

Richard,
Don't know why you would want to, or need to.
I haven't had any trouble putting aluminum cans through my crimper.....never even though about annealing them.....

BUT.....

The way I anneal aluminum sheet for other unrelated projects I work on.....

I fire up my acetalyne torch and just pass it over the material until it is covered in the black soot.....right back to a neutral, or annealed state.....works for me.. 😊

Reply author: Dwight Ennis

Replied on: 07 Mar 2007 23:28:50

Message:

Moved to the Buildings forum at Fred's request.

Reply author: Richard Weatherby

Replied on: 08 Mar 2007 03:26:57

Message:

Dwight & Fred ..Thanks for moving this topic.
CJ.. The annealling seems to soften the metal enough to allow nice even corrugations. The process of making one piece cans seems to stretch the aluminum in the process and it creates a temper which makes it more difficult to work. I had issues with pieces going croked or having a bow which wouldn't lay flat. Yogi Wallace found a source for a softer aluminum on a big coil. There is no need to anneal his stuff.

At first, the color developed had the look of rust and seem to add character to the structure.



Most of my canned buildings have now been rusted with Sophisticated Finishes by Modern options.

Reply author: Matt Vogt
Replied on: 08 Mar 2007 03:58:05
Message:

I haven't tried it yet, but I am planning to use the smooth part of disposable roasting pans. They're not free, but you can find them pretty cheap at dollar stores and the like. I am pretty sure they would not need annealed.

Reply author: FJ and G
Replied on: 08 Mar 2007 05:18:45

Message:

Dick, great job! I didn't know aluminum can be annealed like copper and brass. Do the doors really work? Even if not, it's fantastic. The weathering as well. How did you secure the metal to the frame and what's the frame made of? I used a nail gun for mine. The nails would shoot right thru the corrugation so I held 2 pieces of scrap corrugation in front of the nail gun to slow the air nailer nail down enough for the head to secure the corrugated materials.

Here's some stuff I did with corrugation. Nothing fancy, just some plumbing parts and 2 types of spray, rust spray and silver.





Reply author: Lawrence Wallace
Replied on: 08 Mar 2007 05:33:50
Message:

Matt;
Your almost a neighbor. I'm in Bellaire, Ohio.
Before your buy a roasting pan check to see if it will crimp the way you want it to if you have the Fiskar paper crimper.
I bought a package of them at Sam's club and they were to heavy for the crimper.
The candy pans will work though as they are thinner.

The roasting pans work fine for the rib type roofing I make.

If your are going to the ECLSTS in York, Pa the 30-31 of March you can Pick up some metal from me at the show.

If not if you get up my way give me a call and pick some up here in Bellaire.
You can't beat the price, it's free.

Reply author: Richard Weatherby
Replied on: 08 Mar 2007 06:08:23
Message:

Dave ...Doors don't work, just for show. A sprocket washer, a nail, and chain. All held together with Liquid Nails or Silicone sealant.

Reply author: Madstang

Replied on: 08 Mar 2007 13:58:16

Message:

Richard....Dave nice job on the corrugated stuff!

I am going to try it some day...soon I hope.
I can only hope mine turns out as good as yours.

Bubba

Reply author: Dan Moore

Replied on: 08 Mar 2007 15:30:21

Message:

Bubba i have the crimper and we use the alum baking pans. You have alot of roofing to make for the new shed.

Reply author: Pipertwo

Replied on: 08 Mar 2007 22:44:42

Message:

Yogi, I have thoughts of building a grain elevator and using corrugated siding on part or all of it. Where can I get this metal that crimps easy and is paintable? Also, one of these trips to town I will have to find a crimpers at the craft store.

Frank Barnard

Reply author: JerryB

Replied on: 08 Mar 2007 23:02:31

Message:

I have crimped Al can stock with and without annealing. Both will work, but I believe the resulting corrugated sheet stock definitely looks better when annealed. The softer Al goes through the crimper straighter and the corrugations are deeper and better defined. The amount of pressing and turning force required is less, thus (hopefully) prolonging the life of the plastic crimp rollers.

I anneal them in my gas barbecue on top of the lava rocks. They are done when all the can coating has turned to 'rust / ash. As Richard wrote, too

hot and you have a puddle of Al. CJ's torch is also a good suggestion, but a little more expensive / can.

I don't like to put anything that outgasses in my (wife's) enclosed cooking oven. I also think the maximum temperature of a household oven is too low to effectively anneal the Al.

Happy RRing,

Jerry Bowers

Reply author: ByrdC130

Replied on: 08 Mar 2007 23:04:32

Message:

Being new to this crimping business, 20 cans so far, I've found that if I run the can back and forth thru the crimper several times as I go the length of the can, it will flatten out the finished piece. Might have to try the torch annealing.

Frank, if you can't find the crimpers at the store, try Widgets Craft Supply. They had the Fiskars criimper for less and delivery was in 4 days. This stuff could get to be addictive.

Reply author: lkydvl

Replied on: 09 Mar 2007 13:08:41

Message:

I anneal my aluminum cans in the wife's oven on the clean cycle. Leave the windows open or make sure your exhaust fan is on. Works like a champ! AL annealed in this manner goes thru the crimper much easier and crimps better.



Andre'

Reply author: Lawrence Wallace
Replied on: 09 Mar 2007 21:04:21
Message:

At;
<http://users.stratuswave.net/~wd8jik/crimp/crimp.html>
You may find my way of setting up using the Fiskars paper crimper a help.

Reply author: modelman

Replied on: 10 Mar 2007 02:18:25

Message:

Gang,

Has anyone used a Chef Boy Ar Dee ravioli 🍝(15 oz. size I believe)can for corrugated metal.You can cut a 2x4 inch piece from these cans and let mother nature rust them for you or use some salty water in a spray bottle👉.Aside from being a little stiff,the corrugation of these cans sure resembles a 4'x8' sheet in 1/24.😁

I'm new here and I think this a great site.However,I'm not a model railroader.What has me in common with you guys is building dioramas incorporating my 1/24 Danbury & Franklin Mint models.

Reply author: Richard Weatherby

Replied on: 10 Mar 2007 05:49:05

Message:

My technique is slightly diferent. I mount mine rised on a board. I removed one handle which me to apply greater pressure. The vice-grip pliers permit an easier rotation of the rollers.



As for the food cans, I used them for water towers. I always have a few in the yard, rusting away. Most food cans are steel and certainly don't work in the crimper. Larger aluminum cans are available from Arizona ice tea and some beers.



The aluminum support structure is very flimsy. I may make some wood towers.

Reply author: timlee49

Replied on: 10 Mar 2007 06:11:23

Message:

Hmmmm!

Empty soda cans (plus all drink containers, plastic and cardboard as well) here have a deposit of A\$0.05 redeemable at "can collection centres", they are suggesting an increase to A\$0.20 each within 12 months. Makes a corrugated iron building fairly expensive!

I have the luxury of access to a roll of aluminium (our spelling) foil that is used for wine bottle closures about 0.35mm thickness.

I cut 1000mm strips as wide as I want the sheet to be long and run them through my crimper.

I cut the individual sheets from the strips and soak them in a concentrated brine solution overnight to get some etched tooth for paint etc.

To make the sheets robust, I pile several sheets together so that the top sheet is supported by those underneath and then fill the corrugations of the top sheet with epoxy - usually Araldite.

Just that much Araldite will fill the corrugations, let it go off a little then set that sheet aside and mix just that much Araldite for the next sheet. I find that a minimum of 4 sheets are required to stop distortions.

Having Araldite as the back face of the aluminium gives a good surface for attaching the sheet to the structure using glues or brads.

Works for me, something similar might meet your needs.

Thanks
Tim

Reply author: maculsay

Replied on: 10 Mar 2007 13:51:53

Message:

I know that this message isn't about buildings, but the corrugated aluminum can also be used for backwoods, logging, and MOW cars.

I've been building a [6 car "work train"](#) over the last 5 months to use with my two 1:20.3 live steamers. All the cars are about 11 scale feet long. I used salvaged pop can aluminum, corrugated, exclusively for the 4 cars that have roofs. I'm about to finish them all up, so the weathering of the roofs and well as the cars is next.

The Blacksmith Car:



The Boxcar:



The Supply Car:



And finally, the Caboose:



I also, like others here, never felt like I had to anneal the aluminum; the Fiskars Crimper was plenty strong enough to do the job, since I cut the aluminum to scale...the largest was 2' X 4' and all others smaller. I wanted the look of randomness of the pieces when overlapped.

Reply author: bvdrr

Replied on: 10 Mar 2007 22:30:45

Message:

Well I have a good start on the roof for the grain elevator. I have 5 areas to roof on this building and have 2 done now. Figure if I do 1 a day, I may have the darn thing done by the weekend. Our club, the Central Iowa Garden RR society will be setting up at a large Garden Show on the 16, 17 and 18 at the Iowa State Fair grounds so I will probably take it to this show. And I didn't use the pop cans after all. I found an envelope Yogi Wallace had sent me last year and in it was some beautiful aluminum sheeting. Don't know how I ever misplaced the envelope, but I did, must be old age?

Fred 🍋

Reply author: Richard Weatherby
Replied on: 11 Mar 2007 05:10:12
Message:

Howard;
That is one of the best scratch build projects I have ever seen. Very nice work!! I need to make one like that to go with my new lumber mill.

Reply author: FJ and G
Replied on: 11 Mar 2007 06:19:29
Message:

Mac,

Great job with the corrugated roof train.

Richard, nice idea for water tower; hadn't thunked it but did thunk up a use as a molasses vat



Reply author: coolhand
Replied on: 12 Mar 2007 23:14:11
Message:

I've made corrugated sheets using both coke cans and recently new and used disposable roasting pans and cookie sheets. I annealed the coke cans in the oven at 350 for two or three hours between two pieces of ceramic tile. If I put the printed side of the can to the shiny side it discolored. If I put printed to printed it did not discolor. I find it easier to work after annealing a bit. I also find it easier to work the disposable pans. Cookie sheets are the easiest as they have no ribbing. However I have smoothed out the ribbing in a used roasting pan using a short piece of 2X2. So far I've only applied some to a Ozark Minatures kit using silicone.

I also use a Fiskars crimper in a vise, only I hold it at right angle to the jaws to apply pressure.

You guys have done some nice work.

Reply author: maculsay
Replied on: 13 Mar 2007 09:51:10
Message:

quote:

Originally posted by Richard Weatherby

Howard;

That is one of the best scratch build projects I have ever seen. Very nice work!! I need to make one like that to go with my new lumber mill.

Thank you Richard, it's been fun to do.

I went to your webpage....impressive structures on your layout. Nice work.

Reply author: Richard Weatherby
Replied on: 13 Mar 2007 16:36:12
Message:

Thanks Howard. I call this corrugated stuff "My Heavy Metal Period." It came after my "Concrete Period." I am currently going through my "Wood Period." Not an artist just having Mood Periods." This stuff is so much fun, my wife thinks I am neglecting the house.

Reply author: Lawrence Wallace
Replied on: 14 Mar 2007 06:11:09
Message:

Gary;

Have you found that using the vise to put pressure on the crimper that the finished pieces do not match, from batch to batch, because the tension on the rollers may not be the same from one set-up to another.

I used the vise the same way as you do and changed to using a tye-rap on the handle so the tension would be the same from use to use.

Reply author: dawinter
Replied on: 14 Mar 2007 07:47:48
Message:

I just cut the tops and bottoms off the pop cans, or whatever, and throw the sides in the BBQ for about 10 minutes. The finish is beautiful and I even make sure at least some of the original pattern/colour is showing on the odd piece. UV will dull it down over a year or two but they all retain their original colour for quite some time in doors.



Dave

Reply author: vsmith
Replied on: 14 Mar 2007 10:30:07
Message:

I just use a roll of "soft aluminum" from KS Engineering. Cut to size, roll it through the crimper and glue it down, no problem. Coke cans are too stiff IMHO, I tried this stuff and fell in love with it. Of course I just paint mine 😊

Reply author: steamtrain95993

Replied on: 14 Mar 2007 16:30:40

Message:

Gents,

What is the best way to actually cut the cans apart? So far I have been poking a hole in the side of the can near the bottom and trying to cut from there. Is there an easier way? Should I be concerned about scale size sheets or just make each piece as large as I can for faster coverage? Can one tell if one used scale sized sheets or not? Can a paper cutter be used for straight cuts? My sissors technique leaves a lot to be desired. Thanks for your help.

Reply author: bvdr

Replied on: 14 Mar 2007 18:42:52

Message:

As far as cutting the cans apart,I use my band saw to cut the tops and bottoms off,really fast,too. Then I use a large pair of scissors to cut the can open.Then I roll the can over the edge of something to straighten them out some what. I use a paper cutter to cut the rectangles out. All pretty simple really.

Fred 🍌

Reply author: steamtrain95993

Replied on: 14 Mar 2007 22:54:21

Message:

Fred,

Thanks for the tips. I'll give the ole band saw a try tomorrow. I'm going to have to find that old paper cutter, too. Would 2 x 4 feet be an average size for the 1910's to 1930's siding and roofs? Thanks again, Fred.

Reply author: Richard Weatherby

Replied on: 15 Mar 2007 16:18:31

Message:

OK!! Now you want the secret....

I actually made a video of the process a couple of weeks ago. I think it is a large file (195 MB)and I am not sure how to do the YouTube thing yet. Below is a photo of the can opening process (from a PowerPoint presentation on my HenHouse for an Eggliner.)

I use an OXO can opener available at some Kitchen and Bath stores such as Bed, Bath & Beyond. I know this, as I broke mine of several years and

replaced it last month. The first thing about the can opener is the guide piece below the cutting wheel should be plastic. I then nip the corners off because this get caught in the zip top opening. The nature of a good can opener is that there is a cog behind each wheel (the drive wheel and the cutting wheel) which ensures that both wheels turn simultaneously.

Now here is the secret....don't tell anybody....

The can opener is used sideways to cut the top off with the cutting wheel applied lightly under the rim with the serrated wheel on the inside top edge. Do not apply a much pressure, as it will cut easily as you spin it around a couple of rotations.

BUT wait!!!!!! Before you cut the top off, you need to cut the bottom off....

To cut the bottom off, you also turn the can opener sideways, BUT with the cutting wheel on the inside rim of the depressed bottom. You really only need to grip the rim. This effort requires a little more pressure than doing the top.

I can (no pun intended) cut the top and bottom off in less than 30 seconds.

After, I cut the top & bottom, I run my sheet metal shears along the length of the can, along a straight line such as the paint seam next to the UPC.

After the can is opened, I cut the collars of the top & bottom edges using the same shears.

Then I cook 12 at a time to anneal them. I can go through a couple of cases in an evening. Every can is washed prior to this process. I don't like cutting dirty cans.

Film at 11.....



A Farberware can-opener used sideways will remove top of can.

An OXO can-opener used sideways will remove the bottom of the can.



Reply author: Pipertwo
Replied on: 15 Mar 2007 19:57:39
Message:

vsmith, I have looked up KS Engineering and find no rolled AL. I called the Hobby Horse train shop and they checked for a roll of AL by KS Engineering and found none. Could you help my with the stock number and possibly a shop that carries this. Thank you for sharing. I bought a Fiskers paper crimper today.
Frank Barnard

Reply author: Richard Weatherby
Replied on: 16 Mar 2007 07:00:41

Message:

If you are looking for the metal and are not interested in the free stuff, the product you are looking for is referred to as "tooling foil."

It is available in aluminum, copper, and brass. It is 36 gauge stock available in sheets or rolls of 12 inch by 36 inch.

<http://www.createforless.com/search/searchResults.asp?SearchAction=Restart&SearchHistory=1%2C4%7C4%2C31%7C2%2C26%7C3%2C1366&pType=craft> supplies

The link needs a "plus" symbol between the word "craft" & "Supplies"

If the link doesn't work, try creatforless.com and search for foil or look for the heading "metal & tin".

This link seems to carry both K&S and Maid O' Metal. I have not done business with this supplier.

If you are going to purchase sheet stock, go for the copper. Make a standing seam metal roof and use treatment liquid to achieve the ultimate green patina finish.

I have used the copper for flashing details in my concrete structures. Aluminum and concrete do not get along well.

Reply author: wchasr

Replied on: 16 Mar 2007 09:15:46

Message:

McMaster Carr has sheet aluminum .006 thick in 6 inch wide or 12 1/2 wide rolls of 25 feet long.

6" 8656K51 \$51.74

12-1/2" 8656K61 96.05

Copper sheet at .006" think and 6" wide

Length Each

50" 9709K63 \$21.56

100" 9709K36 39.74

I purhcased some brass for a future project a while ago from them too.

Very satisfied with the service I got from them.

Lots of craft shops and stores are starting to stock adn sell copper foil sheets but at lower quantities or sizes and higher cost than some industrial supply places have it.

Chas

Reply author: Pipertwo
Replied on: 16 Mar 2007 20:57:59
Message:

Thank you Richard and Chas for the information on the AL for making metal siding and roofing. Now that I now know this is a foil we are talking about will it hold up in hail or heavy rain storm and such? Will the formed foil be damaged if some touches it? In other words how susceptible is this foil to being damaged? How thick is a pop can? The foil is .006 or .0055 inches thick and plyable. I saw some foil at the craft shop and it was to plyable.

Frank Barnard

Reply author: bvdr
Replied on: 16 Mar 2007 22:35:27
Message:

I miked a pop can the other night just out of curiosity, it was .003" the foil I used for the roof miked out at .004" But the pop cans are a harder aluminum.

Fred 🍋

Reply author: Pipertwo
Replied on: 16 Mar 2007 23:09:45
Message:

Fred, when you touch the foil roof is it easily damaged? My building will be out in the weather for 8 or 9 months at a time. They will be in doors for the winter.

Frank Barnard

Reply author: Richard Weatherby
Replied on: 17 Mar 2007 07:54:57
Message:

The real answer is NO! The reason is the corrugations provide great stiffness. Yes the foil or can metal is fairly easily damaged in a flat state. The way I apply the corrugated metal is to sort of trowel on the Liquid Nails or Silicone adhesives to a 1/32 to 1/16 inch thick. When I apply the corrugated sheets the adhesive tends to fill the raised corrugations. When the adhesive dries, it provides a solid backing. I have not had any hail, but it may cause damage to anything. I did expect hail once and made a temporary plywood shield for the roof only. (Actually, come to think of it, it was for falling walnuts). The greatest damage is the overhanging corners; if you hit them they will bend.

Reply author: Pipertwo
Replied on: 17 Mar 2007 14:49:23
Message:

Liquid nail as a filler is a very good idea.
Frank Barnard

Reply author: maculsay
Replied on: 17 Mar 2007 17:27:44
Message:

quote:

Originally posted by Richard Weatherby

The real answer is NO! The reason is the corrugations provide great stiffness. Yes the foil or can metal is fairly easily damaged in a flat state. The way I apply the corrugated metal is to sort of trowel on the Liquid Nails or Silicone adhesives to a 1/32 to 1/16 inch thick. When I apply the corrugated sheets the adhesive tends to fill the raised corrugations. When the adhesive dries, it provides a solid backing. I have not had any hail, but it may cause damage to anything. I did expect hail once and made a temporary plywood shield for the roof only. (Actually, come to think of it, it was for falling walnuts). The greatest damage is the overhanging corners; if you hit them they will bend.

Actually Richard....a few dings and dents from hail and walnuts is just nature's way of weathering the roof 🤔

Reply author: coolhand
Replied on: 18 Mar 2007 21:08:07
Message:

🤔Lawrence

You've got a point there on consistant pressure by clamping crimper handles st right angle to the vice. I hav'nt really compare my first run with the last, but I just tighten the vice enough to kee the crimper from wobbling. I do like your idea of using e plastic tie strap to hold it closed, then it could be clamped cross ways and be more stable.

After posting this I had a thought that drilling a hole through each handle of the crimper and using a small gage bolt or threaded rod with nuts would also allow retaining the same crimping pressure from on use to the next.

Reply author: Richard Weatherby
Replied on: 19 Mar 2007 10:43:38

Message:

Gary there is no fool proof way of guaranteeing uniformity, short of having a machined device. Yogi (Lawrence Wallace) has a technique for making your own device. Remember the Fiskar device we are talking about was made for paper. I personally have disassembled this device and built a metal frame for it, but to no avail. The axles eventually will wear the holes to an oblong shape causing greater problems. This is why I have removed the blue handle which actually stops the orange handle from applying more pressure. There are many variables such as the temper or thickness of the metal. I have found that minor adjustment in the spacing of corrugations can be made by simply flexing the finished sheet if necessary. I have not had any major issues of alignment in the finished building of two to three feet high.

Reply author: Lawrence Wallace

Replied on: 20 Mar 2007 00:50:17

Message:

Here is the post in tools about making your own crimper.

http://www.mylargescale.com/forum/topic.asp?TOPIC_ID=45452



Reply author: FJ and G
Replied on: 20 Mar 2007 08:05:49
Message:

Yogi,
Now I see! Looks great! I might be able to borrow the handle from my railbender. :-)

Reply author: Richard Weatherby
Replied on: 20 Mar 2007 10:31:28
Message:

That is a real beauty!! That could put a company in business!!
May be we could all bring our cans to the East Coast Show?
You are obviously a machinist!! A fabulous job. You need to patent it or sell it to Fiskar for general production.

Reply author: Lawrence Wallace
Replied on: 20 Mar 2007 17:06:53
Message:

Not a machinist Richard.
Just a guy who will try anything.
You have to try and do everything this trip around.
I haven't done all I wanted too in the last 73 years but I will keep on trying.

Bring your flattened cans to the ECLSTS and crank out all you want.

Reply author: cape cod Todd
Replied on: 26 Mar 2007 14:13:02
Message:

I really like this idea of crimping cans for roofs so I checked out the local craft store yesterday. I found a crimper on clearance for 8 bucks but it had plastic gears. They had another for \$16 that had metal gears but it was kinda small at 6-7 inches across. The store was at the Hanover Mall in Hanover MA. if anyone is interested. I'm gonna try and find a bigger one.

Reply author: Lawrence Wallace
Replied on: 26 Mar 2007 20:18:08
Message:

Todd;
If the one for \$16.00 is a Fiskars Paper Crimper it has 7 inch rollers. and I don't think you will find anything better. But if you do let us know.

The one I made has steel rollers and will take 7" metal.
When the length of the rollers increase they don't crimp in the middle as deep as the sides.

Reply author: FJ and G
Replied on: 30 Mar 2007 05:10:09
Message:

Yogi,

Your corrugator is nice but not as sweet as this Indian product:



Incidentally, Fiskars makes great shovels for garden projects

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