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Topic: Tutorial: 3D corners in 2D (Read 1169 times)

☐ [HMC](#)

Basic Member  
Journeyman



Posts: 81  
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**Tutorial: 3D corners in 2D**

« on: December 02, 2011, 10:02:28 AM »

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For about 3 years now I've been hanging out on this site, doing way more lurking than posting, mostly because I felt like I was not skilled enough to offer anything useful, especially compared to some of the regulars here. But I'm starting to feel a little more confident in my abilities, and so in the spirit of the holidays, I want to try and give back a little. Hopefully someone will find this useful.

Projects like zippered pouches and packs have 3 dimensional corners that can sometimes be a challenge. I know I've struggled with them plenty, and have tried a number of techniques. Diz outlined one in his [zippered pouch tutorial](#) that may well be a better technique than what I'm about to show. But depending on the size of your project, the size of your presser foot, and/or the size of your machine head, you may not be able to squeeze your project into the machine the way you need to.

So here's a couple ways to flatten those 3D corners into 2D to make them easier to sew.

For the purposes of this tutorial, let's assume we're making a zippered pouch that is 6"W x 4"H x 3"D. in the photos, the sides are Coyote and the face of the pouch is Foliage, just to differentiate them visually.

#### **Method 1: Square corners**

Square corners are probably the easiest to execute. No need to worry about angles or radii, or review your high school geometry lessons.

For this, the face of the pouch will be 7"x5" (our finished size + 1/2" seam allowances). The spine will be 20" long (circumference of the FINISHED pouch size) and 4" wide (3"D + seam allowances.)

Mark off where the corners will be on the spine, and then make a slit from the edge to just shy of your 1/2" seam allowance.





Whoa, whoa, whoa... Hang on a minute... Shouldn't we try to make our gear as strong as possible? Won't cutting the material create a weak point?

Maybe, theoretically. But the two most likely directions that this piece will get stressed are the two directions that don't put any stress on that slit, and the axis that would be an issue will have another layer of uncut material, and will be bound with edge tape. Not to mention the thread which will also support that axis.

Everything in life is a compromise. Here, I'm willing to trade a slight theoretical loss of strength for a very real simplification of assembly.

With that out of the way, let's continue...

Line your two pieces of fabric up so that the end of that slit matches up with the corner of the face. Sew right up to the corner. When you get there, stop, turn the work 90 degrees, and line up the next side.



When you're done, you should have a corner that looks like this:



Round off the point of the corner with your scissors, and you can keep it flat and bind around the curve.

Turned right side out, it will look like this:



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Vlastelin mira and Iz like this

**HMC**

Basic Member  
Journeyman



Posts: 81  
Liked: 4



**Re: Tutorial: 3D corners in 2D**

« Reply #1 on: December 02, 2011, 10:22:07 AM »

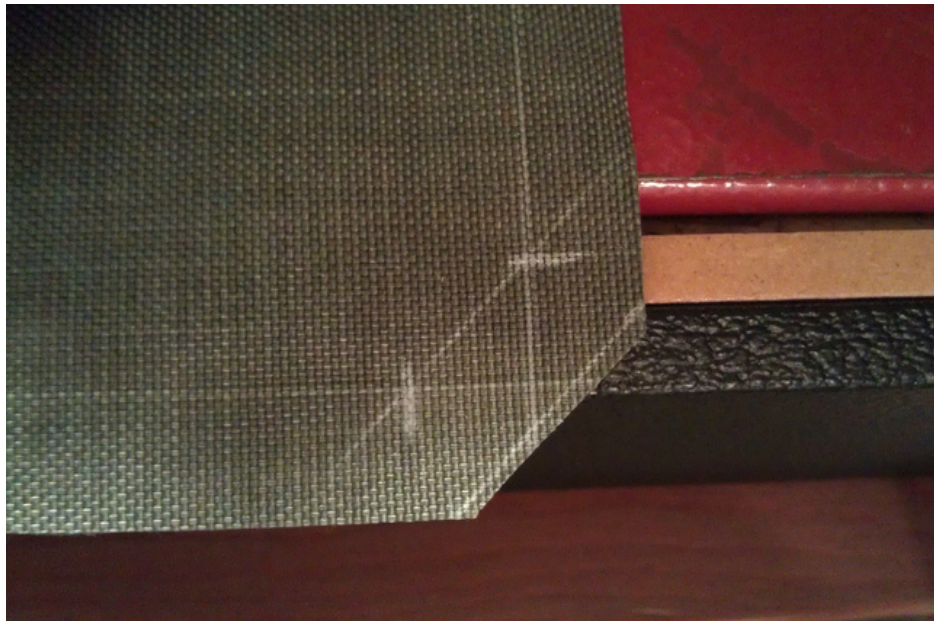
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Pretty simple to do, but doesn't necessarily look the best. I like the look of radiused corners much better. Fortunately there is a happy medium.

#### **Method 2: Angled Corners**

Same size pouch as before, but instead of being a perfect 4x6 rectangle, we're going to measure in 1/2" from the corner on each side and make a 45 degree angle. Like so:



The length of that angled side is about  $\frac{3}{4}$ ", or close enough that it makes no difference.

So the finished size of the pouch face will essentially be an octagon, with the sides being 5",  $\frac{3}{4}$ ", 3",  $\frac{3}{4}$ ", 5",  $\frac{3}{4}$ ", 3" &  $\frac{3}{4}$ ".

Add those up to get your total spine length of 19".

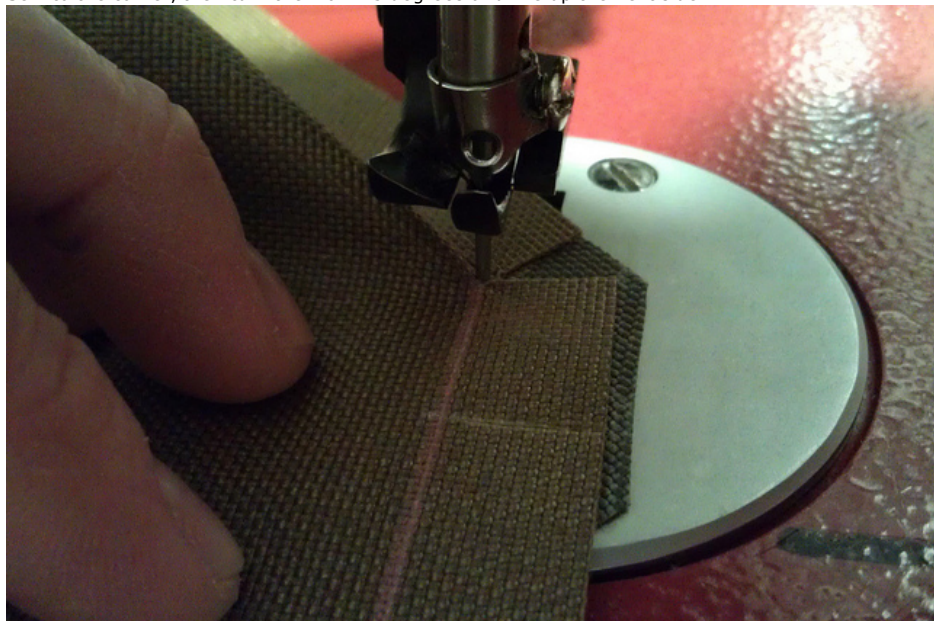
Mark off your corners on the spine like you did before, only this time there will be 8 instead of 4. Now make a slit at the corners, same way we did in Method 1.



Line up your first slit with the first corner.



Sew to the corner, then turn the work 45 degrees and line up the next side.



Sew the length of your short "side", and when you reach the next corner turn 45 again, and continue.



Finished it will look like this:



Round off the corner to make binding easier:



Bind, turn right side out, and voila:



Almost looks like a 1" radius rounded corner, but a heck of a lot easier to execute.

« Last Edit: December 02, 2011, 10:25:37 AM by HMC »

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**HMC**

Basic Member  
Journeyman



Posts: 81  
Liked: 4



**Re: Tutorial: 3D corners in 2D**

« Reply #2 on: December 02, 2011, 10:56:56 AM »

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And speaking of rounded corners...

### **Method 3: Rounded Corners**

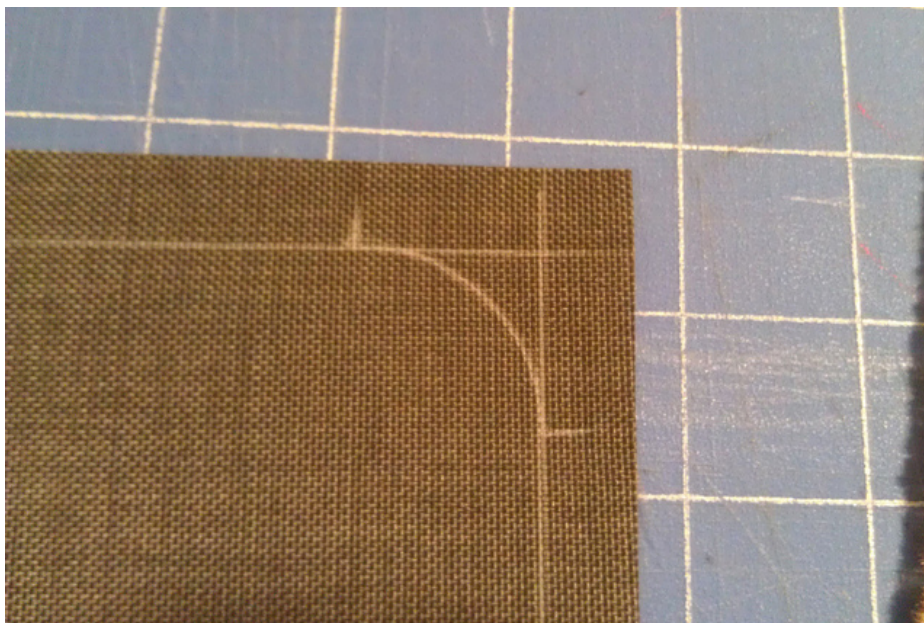
For this one we have to do a little of that highschool geometry I was talking about earlier.

We'll be using a 1" radius. The circumference of a 1" radius circle is 6.28". (That's  $2\pi r$  for those of you who need the geometry refresher. 😊) A quarter of that is close enough to 1.5" to work with. Use 1-9/16" if you're a stickler.

To calculate our spine length, let's think of it like we did in the last method, as an octagon. Our "corners" are the point where the straight edge meets the radius, and our short "sides" will be the length of the arc we calculated above.

So,  $4" + 1.5" + 2" + 1.5" + 4" + 1.5" + 2" + 1.5" = 18"$ .

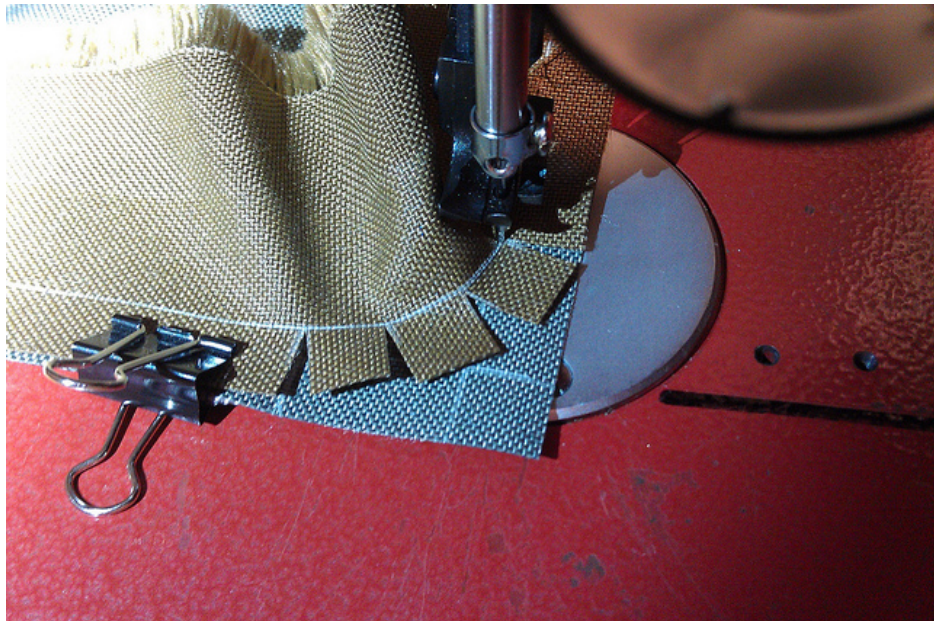
Here's the face marked out with the radius. Note the marks at the "corners."



And here's the spine. I made two cuts at the "corners," and then two more equally spaced in between. Four cuts total is about the minimum you can get away with for this technique. More will give you a smoother curve, but also be a little more fidgety to assemble. You'll also need more the larger your radius is.



Line up the first "corner" and sew the edge up to that point. Notice here how when I clamp the other side in place with the last slit aligned with the other "corner," the spine naturally lays itself down along the radius. You can clamp or glue things in place prior to sewing, or just hold it in place as you sew around the radius. just make sure your two "corners" line up.



Finished it looks like this:



Trim...



...bind, and flip.



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### ☐ **Operator Tactical Gear**

Forum Supporter  
Guru

Forum Supporter



Posts: 708  
Liked: 14



### ☐ **essal**

Forum Supporter  
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Forum Supporter

Posts: 762

**Re: Tutorial: 3D corners in 2D**  
« **Reply #3 on:** December 02, 2011, 12:17:17 PM »

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Thanks I am going to put this to use in a back pack I'm going to make.

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3 shots to the chest

**Re: Tutorial: 3D corners in 2D**  
« **Reply #4 on:** December 02, 2011, 01:05:49 PM »

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I curious on how you bind those edges.. Do you trim the SA so that your binding stitch is further onto the spine? Because it doesn't look like it gives a solid stitch as it is now. On the first technique it kinda looks like there is a gap at the very edge.