

The ample diameter of the bracelet links provides a good surface for experimenting with texture. 7½ in. (19.1cm).

intermediate
metal clay



donut link bracelet

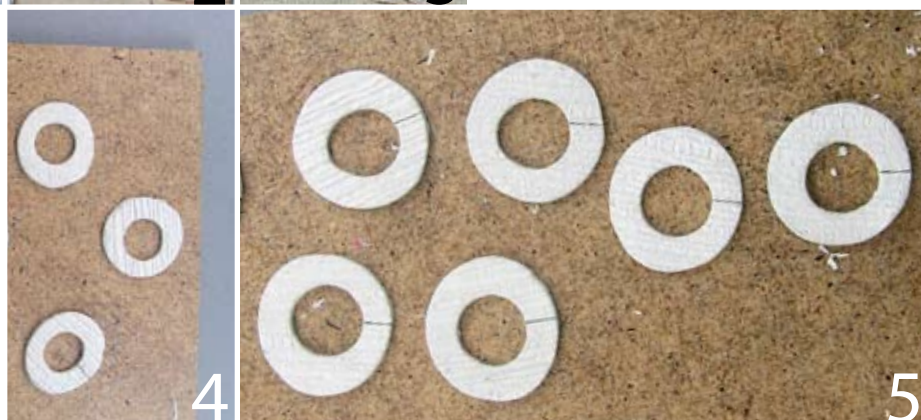
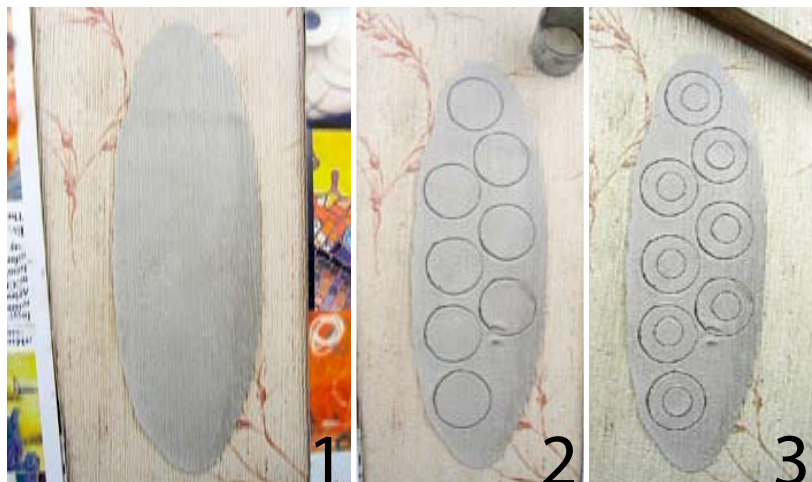
Interlock textured, flat links for a deceptively svelte bracelet.

by Hadar Jacobson

Adding glycerin to metal clay is the key to giving these links strength and flexibility before firing.

texture options

As an alternative to texture plates, consider using textured paper, such as wallpaper samples.



materials

- Metal clay: 28–43g
- Metal clay slip
- Fine-silver wire: 18-gauge (1.0mm), round, half-hard 1¼ in. (32mm)

tools & supplies

- Sturdy, flexible work surface
- Acrylic roller
- Glycerin
- Plastic sheet
- Texture plates
- Natural hand balm
- Playing cards
- Circle cutters: 25mm, 20mm 15mm, 10mm, 8mm diameter
- Craft knife
- Craft sticks (optional)
- Tissue blade
- Pencil or dowel
- Chainnose pliers
- Fine-tipped paintbrush
- Small clothespins
- Kiln, kiln shelf, alumina hydrate
- Liver of sulfur
- Flex shaft, coarse minifiber wheel
- Sandpaper: 220-grit wet/dry
- Tumbler, steel shot, burnishing compound
- Clay tools (optional)
- Textured wallpaper samples (optional)

resources

- PMC+ and PMC slip
 - pmc.com for a list of suppliers
 - Art Clay Silver and slip (Art Clay World, USA: 866.381.0100, artclayworld.com)
- Glycerin, local pharmacies
- Fine-silver wire (Rio Grande, 800.545.6566, riogrande.com)

Condition the metal clay. Mixing glycerin with the clay gives the clay a pliability that is necessary for manipulating the links. Clay mixed with glycerin is dry enough to fire when it is not sticky to the touch and when all the moisture has evaporated.

On a sturdy, flexible work surface, use an acrylic roller to roll 28g of metal clay into a thin sheet. Spread six to eight drops of glycerin on the clay sheet. Roll the clay sheet into a long cylinder, and fold it in half. Place the folded clay cylinder under a sheet of plastic, and roll the clay into a sheet. Continue to roll, fold, and flatten the clay until it regains its original consistency and is no longer sticky.

[1] Texture the clay. Select two texture plates, and place them face up on your work surface. Rub natural hand balm on the texture plates. Stack 2 playing cards on each side of one texture plate. Lay the clay on this texture plate. Place the other texture plate, texture side down, on top of the clay. Roll the clay out into a long sheet [1].

[2–4] Make the donut links. Using a 20mm ($\frac{25}{32}$ -in.) circle cutter, cut as many disks as possible out of the clay sheet [2]. Use a 10mm ($\frac{3}{8}$ -in.) circle cutter to cut holes in the center of each disk [3]. Remove the excess clay [4], and reroll it into another sheet that is 2 cards thick. Repeat steps 2–4 until you have a total of 16 20mm ($\frac{25}{32}$ -in.) donut links. If necessary, condition more clay with glycerin and repeat steps 1–3 to make additional donut links.

Make connecting links. With the remaining clay, roll another sheet that is 2 cards thick. Use a 15mm ($\frac{19}{32}$ -in.) circle cutter to cut out two disks. Use an 8mm ($\frac{5}{16}$ -in.) circle cutter to cut holes in the center of the 15mm disks.

Make the toggle loop. Use a 25mm (1-in.) circle cutter to cut a disk for the toggle loop. Use a 15mm ($\frac{19}{32}$ -in.) circle cutter to cut a hole in the center of the disk.

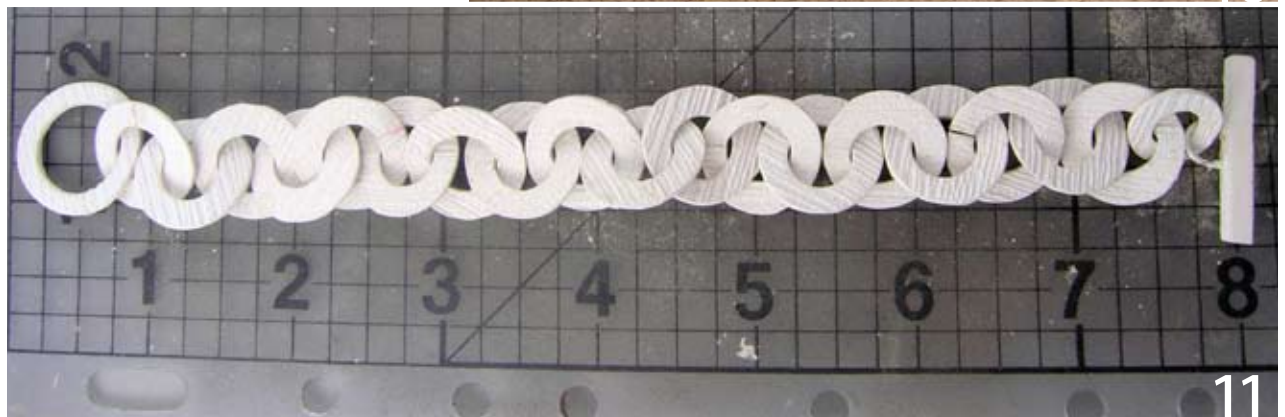
[5] Cut the donut links. With a craft knife, cut a slit in half of the 20mm ($\frac{25}{32}$ -in.) donut links. Cut a slit in one 15mm ($\frac{19}{32}$ -in.) connecting link. Set the donut links aside to air dry while you make the toggle bar.



[6–8] Make the toggle bar. Between the two texture plates, roll a lump of clay to 12 playing cards or 2 craft sticks thick [6]. Use a tissue blade to cut the clay to a 5 x 30mm ($\frac{3}{16}$ x $1\frac{3}{16}$ -in.) rectangle. Cut a 32mm ($1\frac{1}{4}$ -in.) piece of 18-gauge (1.0mm) fine-silver wire. Wrap the wire around a pencil or dowel to bend it into a U shape. Measure 3mm ($\frac{1}{8}$ in.) from one wire end. Using chainnose pliers, make a right-angle bend at this measurement so the 3mm ($\frac{1}{8}$ -in.) wire end points away from the U. Repeat with the other wire end [7]. Check that the U is large enough to accept a 15mm ($\frac{1}{2}$ -in.) donut link. Insert the wire ends 1mm ($\frac{1}{32}$ in.) into the toggle bar. Place clay over the wire ends. Using a fine-tipped paintbrush, dab metal clay slip around the holes, and allow the toggle bar to air dry [8].

[9–11] Assemble the bracelet. Check that the donut links are not tacky to the touch. They should be pliable, but they should not stick to one another as you connect them.

Link the 20mm donut links by sliding two uncut donut links onto a cut donut link [9]. Continue connecting the 20mm donut links to form a chain [10]. Make sure that the last donut link on each end has a cut. Link the toggle loop to one end. At the other end, link the two 15mm connecting links, ending with the cut connecting link. Connect the toggle bar to the end connecting link [11]. Measure the length of the bracelet, and calculate the manufacturer's percentage of postfiring shrinkage. (See "Firing Data Chart," page 4.) Make and add more links if necessary.





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tips on making invisible seams


Select texture plates with linear patterns that will conceal the link seams. Use clay tools and fresh clay to re-create the texture after the seam has dried.

[12] Seal the donut link cuts, and dry.

Brush slip on the cuts of the donut links to close the openings. Secure the seams with small clothespins, and dry. Remove the clothespins to check the bond, and apply more slip if necessary. Allow to air dry.

[13] Check the closure. Before firing, gently check that the toggle bar will fit through the toggle loop at the end of the bracelet. Allow the bracelet to dry completely. Before firing, all moisture must have evaporated from the clay.

Fire the bracelet. Arrange the bracelet in a circle on a layer of alumina hydrate on the kiln shelf. Sprinkle alumina hydrate over the bracelet, and fire according to the manufacturer's instructions.

Patinate and finish the bracelet. Immerse the bracelet in liver of sulfur long enough for it to turn black. Dry the bracelet, and buff the links with a coarse minifiber wheel mounted on a flex shaft. Use 220-grit sandpaper to sand the edges of the links, and polish the bracelet for an hour in a tumbler with steel shot and burnishing compound. 

Firing Data Chart

Manufacturer & type	Firing method	Firing temperature	Firing time (minutes)	Shrinkage (percent)
Art Clay Regular	Torch or kiln	1600°F(871°C)	10	8–12
		1560°F(849°C)	20	
		1472°F(800°C)	30	
Art Clay 650 Low Fire	Torch or kiln	1435°F(779°C)	5	8–9
		1380°F(749°C)	10	
		1290°F(699°C)	15	
		1200°F(649°C)	30	
Art Clay Silver–Slow Dry	Torch or kiln	1600°F(871°C)	10	8–12
		1560°F(849°C)	20	
		1472°F(800°C)	30	
PMC Standard	Kiln	1650°F(899°C)	120	25–30
PMC+	Kiln	1650°F(899°C)	10	10–15
		1560°F(849°C)	20	
		1470°F(800°C)	30	
PMC3	Torch or kiln	1290°F(699°C)	10	10–15
		1200°F(649°C)	20	
		1110°F(599°C)	30	



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