

Wirework

1. Wire Bends

- curves
- angles
- points
- straighten wires
- wrap on a mandrel
- make a spiral
- make small shapes
- make a template/die

2. Dome wires

3. Glue Wires

4. Fire Wires

5. Check and Correct Wires

6. Multiple Firings of Wires

7. Types of Wire

- different heights
- different widths
- corrugated
- round
- square

Wirework

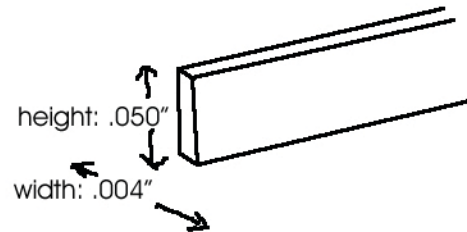
Cloisonné refers to an enamel which uses a wire(s) to separate color areas. Wire can be made of several metals: fine silver, copper, or 24k gold, or in some cases 18k green gold. The wires can have several purposes, and different heights and thicknesses can be used.

A cloisonné wire creates a wall, separating color by making a wall in between colors. This creates a sharp edge between the colors. Wires are not required to separate colors, as you can blend colors within wire cells.

Size of Wire

The height of the wire will determine the depth of the enamel. The thickness of the wire will determine how prominent the wire is when viewing the enamel piece. Generally, the thicker the wire (width) the more prominent it will appear in the design and become a more important design element. I use the following size wires:

- .004 by .05 (my normal height, approx 16 gauge)
- .003 by .05
- .005 by .05
- .010 by .05 (for thicker lines)



Intention

You can use the wire in several ways:

1. to separate one color area from another
2. to create a sharp edge where there is a change in depth
3. to create a shape
4. to create a pattern
5. to create a line

Bending Wires

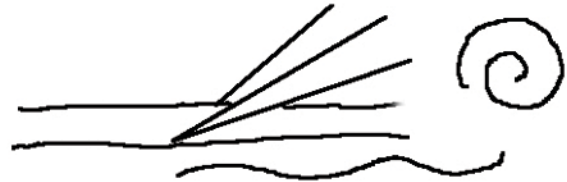
Wire bends easiest when it is annealed. I anneal the cloisonné wire in a kiln on a completely clean (no enamel on it!) firing screen. Coil up some wire, place it in the kiln until the screen begins to glow cherry red, remove and air cool. When it has cooled place it in a container so that you can keep track of what size it is. Use any tool available to bend your wires. I use very sharp tweezers (I prefer hardened steel as they don't give much in the process) pliers, mandrels, drill bits, and my fingers.

Types of Bends

1) The "Twist": right angle bend creates a sharp bend



2) The "Massage": smooth gradual curve



3) The "Sharp Point": squeeze together with flat nose pliers and then open back up



4) "Mandrel": wrap the wire around something:
mandrels, drill bits, brushes,

Wirework Tips

- *Bend wires directly over a scale drawing
- *Bend in one, comfortable direction
- *Angle tweezers less than 45 degrees
- *Use one pair of tweezers (or a finger) as an anchor, and the other tweezer to create the bend
- *Create a method of placing your wires onto your shape so that they are in the correct place relative to your drawing
- *Bend most important wires first and get them glued into place, even possibly fired before adding other wires
- *When cutting your wires, better a little too long than too short.
- *Keep your wires at a 90 degree angle to the enamel surface; if they lean either correct them when placing them or after gluing or firing into place.
- *When adjusting wirework to the domed surface, hold down two of the higher areas and lift up the lower portion of the wire.
- *Use Blu-stic glue or kyle-fyre glue to hold wires into place. Blue-stic holds faster and longer, and dries very quickly, and can be fired while still wet, but if too much gets onto the enamel surface may discolor the enamel. Kyr-fyre burns away completely clear, but becomes more water-like and tends to pull wires out of place where there is capillary attraction possible. Need heat source to dry thoroughly.
- *Fire Blu-stic until it is light yellow or disappears. Fire Kyr-fyre until flux cracks heal.

Apply & Fire Your Wirework

Bending your wires

You can either bend one wire at a time and glue it in place, or bend many wires and then assemble them together onto your enamel surface. Do whatever makes the most sense for ease and speed. One way may work better than the other. Create your wirework design by creating a line pattern so that each line will be able to stand up on its own after the glue has burned away. That means that each wire must have a curve or bend somewhere. Figure out which wire to start with, bend that, make adjustments considering the dome shape of the enamel surface, and glue it in place with either blue stic or kylrfyre glue. Before fixing the wire in place, decide how to calibrate the position of the wire so that it is in the correct place, at the correct angle, and the right length. Once you get a central wire glued down you can work from that and build the rest of your wirework around it.

Glue down the rest of your wires

Slowly build up your wirework design, making sure that each wire is going in the correct place and position. If the glue is too wet and the wire pieces move when you butt one up to another, let the glue dry before touching one wire to another. You can let the length of the wires extend slightly (around 1 mm) off the edge of the piece. It's better to make it a little too long than too short. When bending and sizing your wires, mark where you want to make a cut with your tweezers, and then clip it a little long so that you are able to make adjustments. If the piece is complicated and you want to get some of the central wires fired in place first, do that and then add more wires after it has cooled.

Firing the wires in place

Remember that the glue is only a holding agent to keep the wires in place until the enamel has melted. When the enamel melts, the wires will stick to the molten enamel and be held in place. More glue (especially blue stic) will only make a mess and possibly contaminate the enamel surface. It will not make your wires hold onto the enamel surface any better once you are firing it. The glue will burn away.

What to look for when firing your wires: The glue will begin to burn away as soon as the piece goes into the kiln. Using blue stic: If there is a lot of glue you might even hear a sound as it catches on fire. The glue will turn black, then brown, then yellow, and then be clear. When it reaches the yellow color the enamel is starting to melt, and the wires may or may not be held in place. I sometimes pull the piece out, check for yellow, and touch down some wires with a painting spatula, and then put it back into the kiln until the glue burns away completely. Touch down any more loose wires where there might be gaps carefully. You have around 7 seconds where the enamel is still molten. Do not touch to keep the piece grease free since the next step will be a wet application of enamel.