



Sharing your passion for making jewelry.
Products. Service. Know-how.

Silver-Filled Fabrication Metals

Introduction

Silver-filled, like gold-filled, consists of precious metal bonded onto a base-metal substrate. The silver used for the bonding process can be either fine silver or sterling silver. Silver-filled fabrication metals offer the bright whiteness of silver at a fraction of the cost of solid silver and provide higher quality finished pieces than you can produce with silver-plating.

Definition

Silver-filled is made in two qualities: 1/20 silver-filled and 1/10 silver-filled. The fraction indicates how much precious metal is bonded to the substrate. Silver-filled that is 1/20 contains 5% sterling silver by weight; 1/10 contains 10% sterling silver by weight. The substrate in our silver-filled is a red brass alloy (CDA #220). Rio Grande carries 1/10 silver-filled fabrication metals, made with .925 sterling. We find that the additional thickness better serves fabrication techniques such as cutting, forming, polishing. Rio Grande offers single-clad sheet as well as round, half-round, and square wire. Wire is available in both dead-soft and 1/2-hard tempers.

Working with Silver-Filled

Sheet

Silver-filled fabrication metals behave very much like their gold-filled counterparts. In tests with the sheet, the silver-filled performed well in a rolling mill, with no delamination issues. It has a very soft feel and is easy to print (using a rolling mill or other texturing method). Stampings cut cleanly, with no flaking. Cut, soldered and formed on a mandrel, the material was trouble-free. We recommend you use a barrier flux such as Handy® Flux, Cupronil, Stop-Ox II™ or Firescoff® on both the silver and the brass when soldering.

Please Note: Regular pickle doesn't clean up the exposed brass as well as it does the silver, so expect to do some light polishing to restore the finish on the brass.

All products referenced in this information sheet are available online and in your Rio Grande Tools & Equipment catalog.

Wire

Sent through the rolling mill, the wire performs beautifully; slightly softer than its solid sterling counterpart, it is workable and handles easily. Used for wrapping, silver-filled feels very much like using solid dead-soft silver. For more elaborate designs, choose the 1/2-hard, just as you would with regular sterling. If you want harder wire, this wire does harden up nicely when held in a vise at one end and pulled at the other.

Finishing

Use the same care in polishing as you would for your gold-filled material, and polish lightly or tumble-finish rather than using more aggressive, direct buffing.

Please Note: The brass core of silver-filled wire is visible on the ends of the wire and the sides and back of the sheet; if these ends will be exposed, they may need electroplating to cover this. Because of the difference in color between the brass substrate and the silver exterior, this material offers some design possibilities when treated as a bi-metal. By strategically sanding, cutting, polishing, and so on, you can create some incredible, unusual effects.

Soldering

Silver-filled can be torch- or furnace brazed; use solders with flow points below 1400°F (760°C) for best results.

Composition

Outer layer: 92.5% silver (Ag), 7.5% copper (Cu)
(10% by weight)
Core/Base: 90% copper (Cu), 10% zinc (Zn)
(90% by weight)
Density: 92.80dwt/in.3 (8.80g/cm3)

Hardness Chart

	Hardness (dph)	Rockwell (15T)	Tensile (PSI)
Annealed	50–90	65–71	40,000
1/4-hard	91–100	72–78	50,000
1/2-hard	101–115	79–82	60,000
3/4-hard	116–130	83–85	70,000
Full-hard	131–150	86–88	75,000
Spring hard	175–195	89–93	90,000

©2012 The Bell Group, Inc. All rights reserved.