

## **Tech Tip: Brass and Bronze Soldering**

**Yellow:** There are a variety of yellow bronze solders on the market. They all must be used with flux (white paste flux is preferred. Easy flow silver solder is also an option. Pickling, use Super pickle (9 Parts sparex or citric acid mixed with 1 hydrogen peroxide 3%) and this will strip off copper skin and restore original brass/bronze color.

**White:** Medium or hard silver solder is recommended since the high Nickel content in most white bronze's raises the melting temperature. Medium Silver solder is usually the best color match. Nickel pickle works the fastest and gives the best color. Citric Acid pickle can also be used.

**Pink/Rose bronze:** Easy flow silver solder is the best choice for ease of use and strength of joint, but the color does not match. Joints can be concealed in the design to solve this problem. Copper colored solders are available on the market that will give a better color match. A strong flux (White paste flux) is required to get a clean joint. Pickle in Sparex or citric Acid.

### **Other options to soldering;**

**Laser welding:** An excellent method of joining and you can use wire from the same alloy as filler material achieving an perfect color match. Bronze will laser better than brass due to the lower zinc content.

**TIG/Pulse arc Welder:** The Puk, Orion, or similar machine are a great option. Wire from the same alloy for the filler material can be used for exact color match.

### **PROTECTIVE COATINGS**

Bronze and Brass castings will discolor quickly with time. Many designers enjoy and even embrace the warm natural patina of brass and bronze alloys. To preserve the bright as polished color one must seal the brass and bronze castings together to protect against oxidation and moisture, using one of these methods:

**Plating:** Gold, Rhodium, Fine Silver or other noble metals offer excellent tarnish resistance. Some Alloys require a base plate before final coating for maximum adhesion and tarnish resistance.

**E-Coating:** An electro galvanic cellulose coating that provides excellent tarnish resistance, but the coating can scratch off over time.

**Lacquer Coatings-** Clear coating option that provides excellent sealing properties. Jewelry can be sprayed or dipped. High tarnish resistance is achieved but the surface is subject to chipping

**Nano Ceramic Coating:** Similar process to E-coating that is much harder and more abrasion resistant with a baked on finish that gives a natural metal feel. Available in clear and color coating.

Please contact ABI for further information.