



# Production Engineering

*A leading distributor of resistant welding supplies*

## JOINING

Elkonite and other high density metals may be joined to themselves and to other materials by several methods. These include, copper brazing, silver brazing, shrink fitting, press fitting, mechanical joining, and welding.

### Copper Brazing

Should be done at 1100°C in a reducing atmosphere, using pure copper or a 92% copper-nickel alloy. Standard practice can be employed with respect to metal surface finish, copper braze sheet thickness, brazing temperature and time. No flux is required. Surface etching with potassium ferricyanide or fused sodium nitrate prior to brazing will help insure a good braze. Elkonite can not be brazed per the above.

### Silver Brazing

Should be done in a reducing atmosphere using a non-phosphorous bearing silver braze alloy. The surface may first be tinned with copper in a reducing atmosphere before brazing. Elkonite should be etched prior to silver brazing.

### Press Fitting and Shrink Fitting

Essentially the same as with other metals.

### STRESS RELIEF

On parts held to precise tolerances or used in highly stressed applications, a stress relief treatment may be needed. The recommended treatment is two hours at 600°F in a protective atmosphere, just prior to finishing. Air can be used but surface oxidation will occur.

### Mechanical Joints

Design specifications should include:

1. Edge distance to be minimum of 1.5 times hole diameter.
2. Avoid hole diameters greater than 3 times material thickness.
3. Use a design strength of 75,000psi.