
TECHNICAL BULLETIN

DATE: March 21, 2006
PRODUCT: **Copper Plated Brackets**
RE: Electrolysis or Galvanic Corrosion

Sioux Chief Manufacturing produces a wide variety of hangers, fasteners and bracketing products for the professional plumbing contractor. These high quality innovative products are available in varying plastic resins and metals, with or without copper plated finishes. Sioux Chief products are designed with the professional residential and light commercial plumbing contractor in mind to make installation quicker, easier and more cost effective.

Many of our pure copper plated bracketing systems, have been on the market for over 17 years. During this time we are not aware of any concerns with electrolysis or galvanic corrosion.

According to various published research articles, electrolysis or galvanic corrosion is not due to the contact of dissimilar metals in itself, but requires the presence of certain other chemicals which may act as electrolytes when in high concentration, such as salts and some acid compounds. Water is an electrolyte, however, usually a fairly weak one. Normally, because of the differences in the metals compositions (copper and steel), the electrolysis affects the *least noble* materials. In this case, a steel bracket instead of the copper tube would most likely be affected.

In order for the electrolysis or galvanic corrosion to occur, an electrolyte must be in frequent or continuous contact in the area between the dissimilar metals. Electrolysis or galvanic corrosion is not common when the electrolytic solution is not present. Sioux Chief bracketing systems hold the outside of the copper tube and never come in contact with the fluids inside the tube. Hence, it would be most uncommon to have any electrolysis or galvanic corrosion occur. Good solder beads between copper tube and copper plated brackets further act to seal the contact area between the tube and bracket. Normal condensation is considered a poor electrolyte and should not give cause for concern.

We strongly suggest contractors exercise thorough cleaning of the flux from the solder joint. This will reduce the potential for the leftover flux to mix with any number of electrolytes the joint may come in contact with in the future. Additionally, some recommends protecting the bracketing and tubing from stray electrical currents.

Most Sioux Chief Bracketing products are designed for use inside a structure and are not subjected to continuous environmental exposure. We feel the potential for any adverse electrolysis or galvanic corrosion to be small, if not non-existent, if properly installed.

Sincerely,



Carol Flanagan
Product Group Director – Hangers & Brackets

