



## Z-Trode®

The ideal cap electrode for resistance welding of light-to-medium gauge coated and uncoated steels and aluminum alloys

The Luvata Z-Trode® cap electrode is cold-formed from CDA Alloy 15000 zirconium copper. The combination of advanced copper metallurgy and our cold-forming technology gives you an electrode that outperforms conventional electrodes.

### **Spatter matters**

Z-Trode is the electrode of choice for the Luvata Spatter Reduction Project. The reduction or even elimination of weld expulsions reduces maintenance, protective clothing and rework costs and improves productivity. A better weld quality and reduction in energy costs of up to 10% are just some of the project benefits.

### **Prevents sticking**

Electrode sticking is inevitable when welding galvanized steel with conventional electrodes. Chrome in a conventional electrode does not prevent the zinc from alloying into the copper electrode creating a brass intermetallic surface on the electrode weld face, which diminishes the weld nugget size and degrades the weld quality. But Z-Trode is an alloy of pure zirconium and oxygen-free copper. The zirconium discourages the alloying effect on the electrode weld face and prevents sticking. This increases productivity without special dressings or increased power requirements to weld coated materials.

### **Resists mushrooming**

When compared to CuCrZr and CuCr alloys, the zirconium-copper alloy resists mushrooming and wear due to its superior conductivity. Z-Trode's conductivity allows it to be used with lower current settings and less heat, greatly improving the alloy's resistance to mushrooming.



### **About Luvata**

Luvata is a world leader in metal solutions manufacturing and related engineering services. Luvata's solutions are used in industries such as renewable energy, power generation, automotive, medicine, air-conditioning, industrial refrigeration, and consumer products. The company's continued success is attributed to its longevity, technological excellence and strategy of building partnerships beyond metals. Employing over 6,500 staff in 17 countries, Luvata works in partnership with customers such as Siemens, Toyota, CERN, and DWD International.



**Requires less energy**

In comparison to CuCrZr and CuCr alloys, Z-Trode requires lower current due to its higher electrical conductivity, when used on both sides of the weldment. This results in longer electrode life, more consistent welds and energy savings. Welder current settings can be reduced up to 20% from the conventional CuCrZr and CuCr settings, with no loss in weld integrity.

**Reduces downtime**

Overall maintenance of Z-Trode caps is much less than with conventional electrodes, increasing welding process and production efficiencies.

**Produces smooth start-ups**

Z-Trode caps require no warm-up, conditioning time or initial preparation following electrode changes.

**Most cost-effective electrode**

Z-Trode's increased life expectancy, maintenance savings, lower energy requirements and consistent quality welds assure you the most return on your investment.

**Z-Trode production**

Z-Trode's freedom from oxygen allows us to alloy the copper with the optimum level of zirconium; that's what gives excellent conductivity, and that's what gives you the ability to reduce current settings.

**Z-Trode's physical properties**

All Z-Trode electrodes are cold worked and most items are fully cold formed to ensure the maximum possible amount of cold work. Result; mechanical properties equivalent to conventional CuCrZr and CuCr electrodes, but with better electrical conductivity.

Hardness at ambient temperature:	Minimum 65 HRB
Conductivity:	Minimum 85% IACS

**Z-Trode's non-stick properties**

A resistance weld forms where the electrical resistance in an assembly is highest. Z-Trode's superior conductivity means that the maximum electrical resistance in an assembly is always clearly between the steel or aluminum sheet. This reduces heat generated between the sheet and electrode, which in turn reduces sticking.

**Traceability**

All Luvata materials are fully traceable. Z-Trode electrodes can be recognized by their flats around the periphery of the electrode.

Luvata welding electrodes are available in all industry sizes, geometries and tapers.

**Authorized distributor for Luvata Ohio:**

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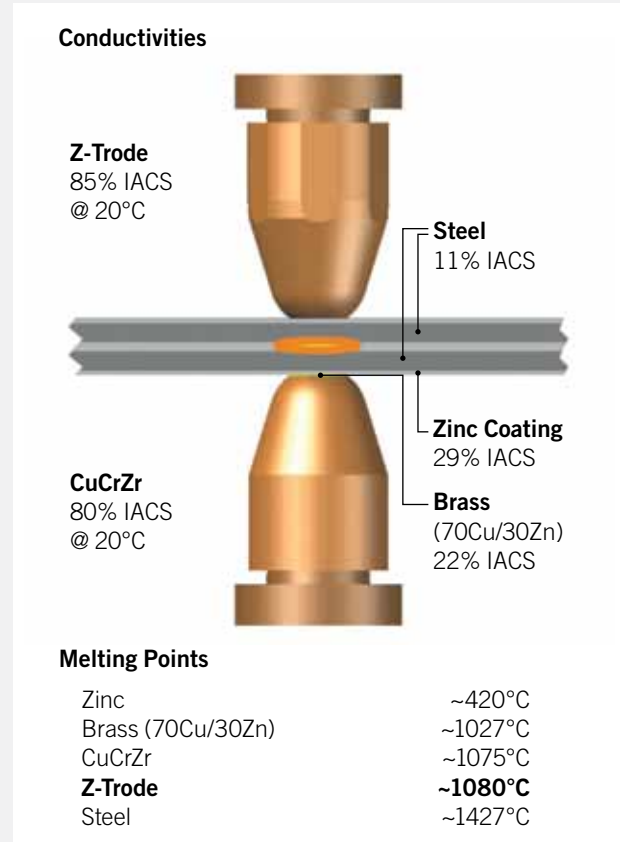
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Electrical and physical constants



Cold heading