# Exothermic Welded Connectors

The process of exothermic welding is a method of making electrical connections of copper to copper or copper to steel in which no outside source of heat or power is required.

In this process, granular metallic particles are placed into a graphite mold and ignited. This reduction of these particles (exothermic reaction) creates high heat in excess of 1400 degrees Celsius, and produces molten copper. The molten copper to flows into the weld cavity, filling any available space and completes the weld. The weld should then be allowed to cool and solidify. The mold is removed and made ready for the next weld. ***This entire process takes only 20 seconds to complete.***

Exothermically welded connections produce a joint (or connection) superior in performance to any known mechanical or pressure type surface-to-surface contact connector. By virtue of its molecular bond, an exothermically welded connection will not loosen or increase in resistance over the lifetime of the installation.

All grounding system connections should be made by exothermic weld. Connections should include, but not be limited to, all cable to cable splices,

T′s, X′s ..etc.; all cable to ground rods, ground rod splices, cable to steel and cast iron; and cable lugs.

Exothermic welding is applicable to materials other than copper, some of these are listed below.

Common steel Stainless steel Steel rail
Monel
Copper-clad Steel Cast iron Columbium
Niobium
Bronze Brass Pure iron
Wrought iron
Silicon Bronze Galvanized and Bethanized steel

**Advantages of Exothermic Welding**

√ Current carrying (fusing) capacity equal to that of the conductor
√ Will not deteriorate with age
√ Permanent molecular bond that cannot loosen or corrode
√ Will withstand repeated faults
√ Low labor costs
√ No special skills required
√ No external power or heat required
√ Can be checked visually for quality
√ Easily portable