Kumwell
Exothermic Welding

KW Type Weld Metal Powder

Kumwell designed a welding process of making grounding and lightning protection in power plant, substation, transmission line, refinery, industrial plant, commercial plant, telecommunication tower, building, housing, etc.

Applications

Suitable for grounding and lightning protection's connections, that is, Copper to copper, Copper to steel, Steel to steel, Copper to Stainless Steel, Stainless Steel to Stainless Steel

Standards

- UL 467 – Standard for Grounding & Bonding Equipment
- IEEE 837 – Standard for Qualifying Permanent Connections used in Substation Grounding
- IEC 62561-1:2012 – Lightning Protection Systems Component (LPSC) for connection components.

Storage

It should be stored in an ambient temperature and avoid moisture.

Packaging

Kumwell weld metal powder is contained in a moisture - resistant plastic cartridge, packed in a paper box. Integral weld metal package is identified as to the weld metal powder's amount, type of metal powder to be connected, Lot No., the number of tubes to manufacturing date (MFD).

Code	KW15	KW25	KW32	KW45	KW65	KW90	KW115	KW150	KW200	KW250
Size	15g	25g	32g	45g	65g	90g	115g	150g	200g	250g
Tubes/box	40	20	20	20	20	20	10	10	10	10

Criteria of Test

Kumwell Exothermic welding conections have been successfully tested in accordance with;

- **IEEE Std. 837 Standard for Qualifying Permanent Connection (For type test product)**
  1. Mechanical pullout test
  2. Electromagnetic force
  3. Sequential test group has 3 main procedures to test each steps if it passes the set standard of each procedure;
     a. Current Temperature Cycling
     b. Freeze Thaw Cycling
     c. Corrosion Sequence Run: Salt Spray Test, Acid Test

- **UL 467 Standard for Grounding & Bonding Equipment / UL Inspection Witness**
  1. Weld metal powder quality: Percentage of material, Particle size, Density of each composition, Starting powder and ignition
  2. Reaction: Steady burn, No pop, No drastic color change, No porosity in the resulting copper, Consistency of color
  3. Short Time Current Test
  4. Mechanical Sequence from UL 486

- **American Railway Engineering Association AREA**

  ASTM E8M Test methods for tensile testing of metallic material evaluate the consistency chemistry and overall quality of KW, KB and KR Welding material resulting to the average of 43,000 psi tensile strength.

- **IEC 62561-1 Lightning Protection Systems Component (LPSC) for connection component**
  1. Environmental Test: Salt Spray Test, Humid Sulphurous atmosphere test.
  2. Electrical Test: Lightning Impulse Current Test, Contact Resistance Measurement
  3. Static Mechanical Test: Tensile Test