T.J. Snow Co. (423) 894-6234; FAX: (423) 490-2417 (authorized distributor CMW Inc.)

CONTACTS METALS WELDING

Long electrode life is of paramount importance to the user of resistance welding equipment. Selection of the proper CMW alloy or combination of alloys will help to give improved weld strength and electrode life.

CMW electrodes are fabricated from alloys selected from the results of laboratory and practical field tests. For special problems, CMW engineers will make recommendations based on their years of experience.

Typical Physical and Mechanical Properties of CMW® Copper Based Alloys

CMW ALLOY	Condition	Principal Elements	Class #	R.W.M.A. Alloy Number	Hardness Rockwell	Electrical Conductivity %I.A.C.S.	Ultimate Tensile Strength, psi	Elongation % in 2"	Permanent Softening Begins at °C	Permanent Softening Begins at °F
CMW® 28	Wrought**	Copper, Zirconium	1	1.15000	70 B	90	66,000	10	500	930
CMW® 3	Cast				70 B	80	50,000	20	500	930
	Wrought***	Copper, Chromium	2	2.18200	83 B	85	75,000	15	500	930
CMW® 328	Wrought***	Copper, Chromium, Zirconium	2	2.18150	83 B	85	75,000	15	500	930
CMW® 353	Wrought	Copper, Nickel, Silicon, Chromium	3		94 B	48	100,000	13	455	850
	Cast		3	3.18000	90 B	48	85,000	10	455	850
CMW® 100	Wrought	Copper, Nickel, Beryllium	3	3.17510	100 B	48	110,000	10	455	850
CMW® 73	Cast				38 C	20	110,000	2	375	710
	Wrought	Copper, Beryllium	4	4.17200	38 C	23	170,000	4	375	710
ELKALOY® D	Cast	Copper, Aluminum	5	5.95300	92 B	13	85,000	15	620	1150
Copper	Cast				30 B	95	25,000	50	200	390
	Wrought	Pure Copper		—	40 B	100	40,000	35	200	390
CMW® DSC	Wrought	Copper, Al_2O_3	20	—	75 B	85	54,000	25	800	1475

Note: All properties shown are TYPICAL and should not be used for specifications
* Cold drawn bars up to 1" diameter
** Cold drawn bars up to 5/8" diameter
*** Heat treated and cold drawn bars up to 1" diameter

TYPICAL USAGE

CMW® 28 material is recommended for spot welding of coated steels and high conductivity materials, excluding copper and silver.

CMW® 3 material is recommended for spot and seam welding cold and hot-rolled steels and coated materials as well as current carrying shafts and arms, back-up bars for both resistance and arc welding and electrical current carrying structural parts and springs.

CMW® 328 material is recommended for spot and seam welding cold and hot rolled steels. There is some evidence that CMW® 328 outperforms CMW® 3 material when welding coated or galvanized steels.

CMW® 353 material is recommended for heavy duty offset holders, back-up bars, flash welding dies, current carrying structural members, shafts and bushings in combination with CMW® 3.

CMW® 100 material is recommended for spot and seam welding stainless steel and high temperature heat resisting alloys requiring high weld forces, flash welding dies, back-up bars, projection welding electrodes, and high strength, high conductivity electrical components and springs.

CMW® 73 material is recommended for flash welding dies, springs, electrical components, high strength backing material for brazed assemblies and wire guides.

ELKALOY® D material is recommended for butt and flash welding dies and clamps for cold rolled and stainless steel, current carrying structural parts, jigs and fixtures, pickling racks and baskets.

CMW® DSC material has exceptional resistance to deformation when welding, and is highly recommended as welding caps for welding coated and galvanized steels. It allows a stable start-up, and generally outlasts other cap materials when welding parameters are not carefully controlled. The material requires upset cold work to develope its properties, and is therefore only available as caps or cap blanks.