

Copper Based Welding Electrode Alloys

4-7-2006

RWMA Class	Composition	RWMA Alloy #	Hardness Rockwell	Electrical Conductivity % I.A.C S.	Tensile Strength, PSI	Elongation % In 2"	Mode	Annealing Beginning At ° C	Annealing Beginning At ° F
Class 1	Copper Cadmium	1.16100	70B	90	65,000	15	Wrought	350	660
Class 1	Copper Zirconium	1.15000	70B	90	66,000	10	Wrought	500	930
Class 2	Copper Chromium	2.18200	70B	80	50,000	20	Cast	500	930
Class 2	Copper Chromium	2.18200	83B	85	75,000	15	Wrought	500	930
Class 2	Copper Chromium Zirconium	2.18150	83B	85	75,000	15	Wrought	500	930
Class 3	Copper Nickel Silicon Chromium	3.18000	90B	48	85,000	10	Cast	455	850
Class 3	Copper Nickel Beryllium	3.17510	95B	48	95,000	10	Cast	455	850
Class 3	Copper Nickel Beryllium	3.17510	100B	48	110,000	10	Wrought	455	850
Class 4	Copper Beryllium	4.17200	38C	20	110,000	4	Cast	375	710
Class 4	Copper Beryllium	4.17200	38C	23	170,000	4	Wrought	375	710
Class 5	Copper Aluminum	5.95300	92B	13	85,000	15	Cast	620	1,150
Class 20	Copper Aluminum Oxide - 0.3	-	66B	92	73,000	22	Wrought	704	1,300
Class 20	Copper Aluminum Oxide - 0.5	-	78B	87	80,000	19	Wrought	704	1,300
Class 20	Copper Aluminum Oxide - 1.1	-	87B	78	90,000	7	Wrought	927	1,700
Copper	Pure Copper	•	30B	95	25,000	50	Cast	200	390
Copper	Pure Copper	•	40B	100	40,000	35	Wrought	200	390

Refractory Metal Based Welding Electrode Alloys

RWMA Class	Composition	RWMA Alloy #	Hardness Rockwell	Electrical Conductivity % I.A.C S.	Tensile Strength, PSI	Cross Breaking PSI	
Class 10	Tungsten Copper	10.74450	77B	53	63,000	110,000	© ASW All Rights Reserved
Class 10	Tungsten Copper	•	90B	50	75,000	130,000	
Class 10	Tungsten Copper	•	95B	48	85,000	140,000	
Class 11	Tungsten Copper	11.74400	98B	45	90,000	150,000	
Class 12	Tungsten Copper	12.74350	103B	41	98,000	170,000	
Class 12	Tungsten Copper Alloy	•	105B	30	120,000	180,000	
Class 12	Tungsten Copper Alloy	•	109B	28	160,000	200,000	
Class 12	Tungsten Carbide Copper	•	94B	45	70,000	140,000	
Class 12	Tungsten Carbide Copper	•	100B	42	75,000	160,000	
Class 12	Tungsten Carbide Copper	•	37C	30	85,000	180,000	
Class 12	Tungsten Carbide Copper Alloy	•	47C	18	150,000	220,000	
Class 13	Tungsten	13.74300	39C	30	150,000	220,000	
Class 14	Molybdenum	14.42300	90B	30	80,000	120,000	
Class 14	Tungsten Nickel Iron Molybdenum	•	30C	11	133,000	240,000	
Class 14	Tungsten Nickel Iron Molybdenum	•	34C	11	133,000	240,000	