

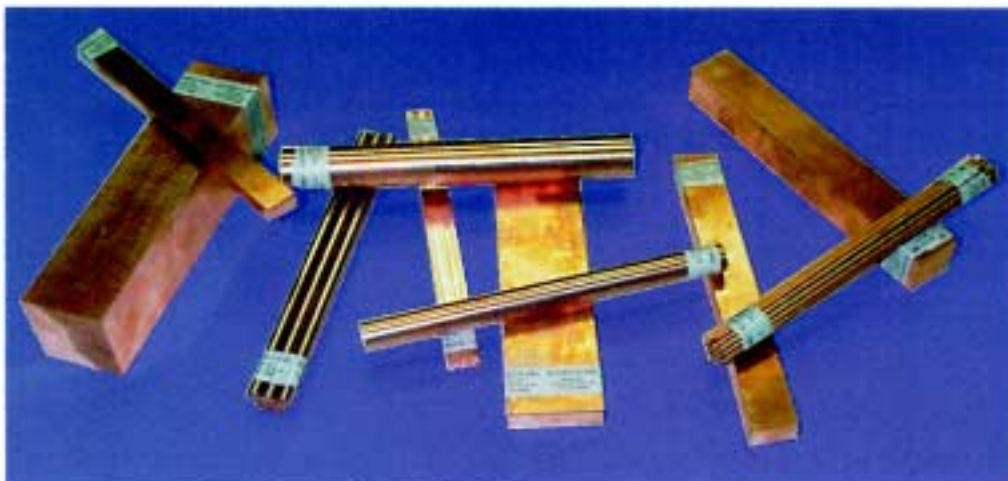
ELKONITE®

THE Answer for Your EDM Applications

Check the facts when others claim their products are the equivalent of CMW's Elkonite® alloys. Mere copper tungsten materials cannot compare with the superior performance of Elkonite® composites in applications requiring greater thermal and/or electrical conductivity with superior

wear capabilities and material hardness. Elkonite® material – innovated in the 1920's and still manufactured exclusively by CMW Inc. – is available in eleven different compositions, one of which will meet your specific EDM application requirements.

ELKONITE®—11 COMPOSITIONS, 73 BAR SIZES & 18 ROUND SIZES STOCK



The outstanding properties of Elkonite® materials – spark erosion resistance, good electron emission characteristics, excellent wear resistance, good metal removal rates, and the ability to retain fine detail – make them outstanding EDM electrode materials.

Our most popular alloys, Elkonite® 5W3, 10W3 and 20S, have the combination of wear, thermal conductivity, and hardness making them outstanding choices for applications requiring high precision cutting and high quality

surface finishes.

Elkonite® compositions containing copper and silver display a wide range of thermal conductivity and erosion resistance meeting the high performance needs of the EDM industry.

CMW engineering assistance is available to work with you in determining the Elkonite® material to meet your EDM application requirements. Bring your toughest application to us. Be sure. Specify Elkonite®.

Benefits:

- tighter tolerances
- more alloys for greater flexibility
- higher quality finishes
- longer wear life
- long range cost savings

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Elkonite® compositions and properties

Elkonite® Grade	Density g/cm ³ (lb/in ³)	Composition % by weight	Theoretical Thermal Conductivity Btu in 'F' (W m ⁻¹ K ⁻¹)	Electrical Conductivity (Resistivity) %IACS (ηΩm)	Hardness (Rockwell)	Modulus of Rupture in Bending psi (Mpa)
Elkonite® 1W3	12.5 (.452)	55W; 45Cu	180 (310)	53 (32.5)	77 HRB	110,000 (758)
Elkonite® 3W3	13.83 (.503)	68W; 32Cu	160 (280)	50 (34.5)	90 HRB	130,000 (896)
Elkonite® 5W3	14.18 (.512)	70W; 30Cu	160 (280)	48 (35.9)	95 HRB	140,000 (965)
Elkonite® 10W3	14.84 (.536)	75W; 25Cu	150 (260)	45 (38.3)	98 HRB	150,000 (1030)
Elkonite® 10W53	14.79 (.534)	75W; 25Cu*	85 (150)	28 (61.6)	109 HRB	200,000 (1380)
Elkonite® 30W3	15.56 (.562)	80W; 20Cu	145 (250)	41 (42.1)	103 HRB	170,000 (1170)
Elkonite® 40W3	16.64 (.601)	87W; 13Cu	135 (230)	37 (46.6)	25 HRC	165,000 (1140)
Elkonite® 50W3	17.17 (.620)	90W; 10Cu	115 (200)	35 (49.3)	27 HRC	180,000 (1240)
Elkonite® TC20	12.65 (.457)	70WC, 30Cu	140 (240)	30 (57.5)	37 HRC	200,000 (1380)
Elkonite® TC53	12.60 (.455)	70WC, 20 Cu*	70 (120)	18 (95.8)	47 HRC	220,000 (1520)
Elkonite® 20S	15.72 (.568)	73W, 27Ag	160 (280)	49 (35.2)	90 HRB	130,000 (896)

*These materials are infiltrated with a precipitation hardened copper alloy.

Elkonite® Standard Bar Size Matrix

(the most popular compositions and sizes are stocked)

This Standard Bar Size Matrix applies only to grades shown "shaded" above
Other grades can be considered by request for quotation

Round Bars				Rectangular Bars		
Dia.	Len.	Dia.	Len.	THICKNESS	WIDTH <small>(select any equal or greater than thickness)</small>	LENGTH
1/8"	8"	3/4"	8"	1/8"	1/8"	8"
3/16"	8"	7/8"	8"	1/4"	1/4"	8"
1/4"	8"	1"	8"	5/16"	5/16"	8"
5/16"	8"	1 1/8"	8"	3/8"	3/8"	8"
3/8"	8"	1 1/4"	8"	1/2"	1/2"	8"
7/16"	8"	1 3/8"	8"	5/8"	5/8"	8"
1/2"	8"	1 1/2"	8"	3/4"	3/4"	8"
9/16"	8"	1 3/4"	8"	1"	1"	8"
5/8"	8"	2"	8"	1 1/4"	1 1/4"	8"
				1 1/2"	1 1/2"	8"
				2"	2"	8"

Part Number Development Table

Material	Code	Width/Thick	Code	Width/Thick	Code	Width/Thick	Code
1W3	11	Round (thk)	00	7/16	07	1 1/8	18
3W3	12	1/16	01	1/2	08	1 1/4	20
5W3	13	1/8	02	9/16	09	1 3/8	22
10W3	14	3/16	03	5/8	10	1 1/2	24
30W3	16	1/4	04	3/4	12	1 3/4	28
10W53	18	5/16	05	7/8	14	2	32
		3/8	06	1	16	2 1/2	40
						4	64

15- Material Code Width Code Thick Code -64

Example: 15-110800-64= 1W3, 1/2" dia., round bar
15-120816-64= 3W3, 1/2" Width, 1" thick, bar

All Bars are 8" in length, custom sizes and lengths up to 12" are available

Note: Most Width/Thickness variations are available. Rectangular cross sections greater than 4" Sq. are not available

Round cross sections greater than 2" in Dia. are not available Except as discrete 1" max. thickness disks.

Elkonite® is a registered trademark of CMW, Inc.



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