Elkonite 5W3 Copper-Tungsten (CuW 70/30)

CuW 70/30

BETWEEN CLASS 10 AND 11

Ref: AWS J1.3/J1.3M:2020 - Specification for Materials Used in Resistance Welding Electrodes and Related Equipment

ELKONITE 5W3 PROPERTIES

Property	Value	Unit
Electrical Conductivity	**48**	**% IACS**
Hardness	**90**	**HRB**
Density	14.18	g/cm3

NOMINAL COMPOSITION

Copper (Cu)	Tungsten (W)
30%	70%

TYPICAL PHYSICAL PROPERTIES

Property	Typical Value	Unit
Electrical Conductivity	48	% IACS
Hardness	90	HRB
Density	14.18	g/cm3
Melting Point (Cu matrix)	1083	C
Ultimate Strength	85,000	PSI
Cross Breaking Strength	140,000	PSI

RECOMMENDED APPLICATIONS

- Light to medium pressure projection dies
- Facings and inserts for flash and butt welding dies
- Projection welding electrodes
- Seam welding electrodes
- Bearing facings for electro-forming and electro-forging
- EDM electrodes for higher wear resistance

KEY FEATURES

- Higher conductivity than 10W3 and 30W3
- Excellent resistance to sticking
- Optimal conductivity/hardness balance
- Frequently used for EDM electrodes
- Good wear resistance

EQUIVALENT DESIGNATIONS

No AWS J1.3 class | Elkonite 5W3 | CuW 70/30 | 30% Cu / 70% W | W70Cu30

APPLICATION NOTE: Elkonite 5W3 is used for facings and inserts for flash and butt welding dies, projection electrodes, seam welding, bearing facings for electro-forming and electro-forging. Frequently used for EDM electrodes due to its higher wear resistance. Its composition of 30% copper and 70% tungsten offers higher conductivity (48% IACS typical) than the Class 11 and 12 grades. By composition it falls between Class 10 (43-47% Cu) and Class 11 (23-27% Cu) of AWS J1.3.

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Projection electrodes, dies - ready to install.
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