

MWS offers High Performance Wire in Extra (XHTW) and Extreme (EHTW) tensile strength with all insulation types and as bare wire. Most alloys are available with nickel, silver, or gold plating.

MWS High Performance Wire (HPW) products are copper alloy conductors specifically designed for applications with high mechanical stress that also require high conductivity. Through improved characteristics of the wire, lifespan and reliability under dynamic load are increased.

High Strength Wire

METAL		COPPER	BERYLLIUM COPPER	PHOSPHOR BRONZE	XHTW	EHTW
Description		ETP C11000	C17200	C51000	Extra High Tensile Wire	Extreme High Tensile Wire
Density	(lb/cu in)	0.323	0.298	0.32	0.325	0.325
Conductivity	(% IACS-Soft)	100	22	15	89	80
Electrical Resistance	(ohms/cir mil ft)	10.3	46.2	69.1	11.8	12.9
Tensile (Soft)	ksi	34	68	51	50	56
Tensile (Hard)	ksi	55	152	110	62	68
Elongation (a)	%	6 to 36	1 to 42	5 to 49	10 to 25	10 to 30
Solderability		Excellent	Good	Excellent	Good	Good
Weldability		Excellent	Good	Excellent	Good	Good
Bend Test (b)		100			600	1,050

(a) Tensile and elongation values are nominal and generally size dependent

(b) Fatigue strength compared to annealed copper

Wire Properties

- Increased Tensile Strength – over 50% greater than ETP copper
- High Conductivity – up to 89% of ETP copper
- Good Solderability and Weldability – no performance loss compared to copper
- Increased Bending Performance – better fatigue strength results in fewer wire breaks in cable constructions

Applications

- Catheter electrode wires
- Severe coil winding applications
- Voice coils
- Miniature cables
- Aerospace applications

