Conductor Facts / Advantage Alloy

Copper, the traditional material for wire and cable conductors, has the highest electrical conductivity of any metal except silver. Copper also has one of the lowest tensile strengths when soft. When cold worked to a hard temper the mechanical strength of copper wire doubles, but softens readily when exposed to elevated processing or operating temperatures. As an electrical conductor copper is excellent. When mechanical properties are required, copper is found wanting.

Copper alloys combine copper as the dominant element with other elements in lesser amounts resulting in an engineered set of properties. Copper alloys for electrical conductors are designed to balance several competing engineering attributes: tensile strength, electrical conductivity, elongation, thermal stability and mechanical processing. Currently available conductor alloys each possess specific properties suited to different conductor demands and applications.

Alloy Characteristics

- Percon 28
- High strength, high conductivity, high elongation, and excellent resistance to thermal softening.
- Percon 24 or C18135
- High strength, high conductivity, high elongation, and excellent resistance to thermal softening.
- Percon 17 or Cadmium Copper C162 (Soft Temper)
- Good strength, good conductivity, good elongation and good resistance to thermal softening.
- Percon 19 or Cadmium Copper C162 (Hard Temper)
- High strength, good conductivity, low elongation and good resistance to thermal softening.
- Hard 40% Copper Clad Steel
- High strength, low conductivity, low elongation and good resistance to thermal softening.
- HS-95 Need Description if it Exists
- Need this descriptive copy like other products.

ALLOY CHARACTERISTICS / ALLOY NAME	TEMPER	TENSILE STRENGTH	CONDUCTIVITY (IACS)	ELONGATION (MIN)	FLEX LIFE (ASTM B 470)	MECHANICAL PROCESSING	AVAILABLE PLATINGS	SOFTENING RESISTANCE
COPPER	Soft	32,000	100%	15%	P	E	S, N, T	-
	Hard	60,000	96%	1%	P	E	S, N, T	P
PERCON 24	Soft	60,000	90%	8%	E	E	S, N	E
C18135	Soft	60,000	85%	8%	E	G	S, N	E
PERCON 11	Hard	80,000	90%	1%	G	VG	S, N, T	VG
PERCON 17	Soft	58,000	85%	6%	G	E	S, N	VG
	Hard	95,000	80%	1%	VG	E	S, N, T	G
PERCON 19	Hard	110,000	73%	1%	E	E	S, N, T	G
CADMIUM COPPER	Hard	100,000	80%	1%	VG	VG	S, N, T	G
CCS (40%)	Hard	110,000	39%	1%	E	G	S, N, T	G

E = Excellent, VG = Very Good, G = Good, P = Poor, S = Silver Plate, N = Nickel Plate, T = Tin Plate

Custom constructions are available, please contact the sales department

The information provided on this page is for reference purposes only.

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