

Wieland-M42

CuZn42 | CW510L

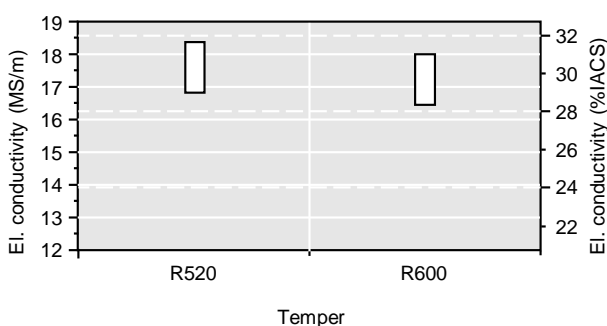
CuZn42 is a lead-free brass alloy, that is highly suitable for machining due to its two-phase microstructure. This alloy is, therefore, a perfect option to replace common lead containing machining brasses, particularly when lead content is required to be lower than 0.05 %.

Chemical composition (Reference)		Physical properties (Reference values at room temperature)			
Cu	58 %	Electrical conductivity	18 MS/m	31 %IACS	
Zn	remainder	Thermal conductivity	113 W/(m·K)	65 Btu·ft/(ft ² ·h·°F)	
		Coefficient of electrical resistance*	1.1 10 ⁻³ /K	0.6 10 ⁻³ /°F	
		Coefficient of thermal expansion*	20.3 10 ⁻⁶ /K	11.3 10 ⁻⁶ /°F	
		Density	8.40 g/cm ³	0.303 lb/in ³	
		Modulus of elasticity	105 GPa	15,000 ksi	
		Specific heat	0.377 J/(g·K)	0.090 Btu/(lb·°F)	
		Poisson's ratio	0.34	0.34	

* Between 0 and 300 °C

Mechanical properties (values in brackets are for information only)						
Temper	Tensile strength R _m		Yield strength R _{p0.2}		Elongation A ₅₀	Hardness HV
	MPa	ksi	MPa	ksi		
R520	520-620	74-90	≥ 420	≤ 61	≥ 10	(160-190)
R600	≥ 600	≥ 87	≥ 450	≥ 65	-	(≥ 190)

Electrical conductivity



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Fatigue strength

The fatigue strength is defined as the maximum bending stress amplitude which a material withstands for 10^7 load cycles under symmetrical alternate load without breaking. It is dependent on the temper tested and is about 1/3 of the tensile strength R_m .

Types and formats available

- Standard coils with outside diameters up to 1,400 mm
- Contour-milled strip
- Sheet
- Strip and sheet with protective coating

Dimensions available

- Strip thickness from 0.20 mm, thinner gauges on request
- Strip width from 3 mm, however min. 10 x strip thickness

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