

Wieland-Z30

CuZn39Pb2 | C37700 | CW612N

C37700, commonly known as Forging Brass, exhibits a three-phase microstructure with a significant amount of beta crystals that lead to very good hot formability, but cold formability is limited. The beta phase further supports the positive effect of Pb content on machinability which comes close to free-cutting brass. Applications of C37700 comprise of watch and clock parts, precision mechanical components, and milling plates.

Chemical composition (Reference)

Cu	59 %
Pb	1.8 %
Zn	remainder

Physical properties (Reference values at room temperature)

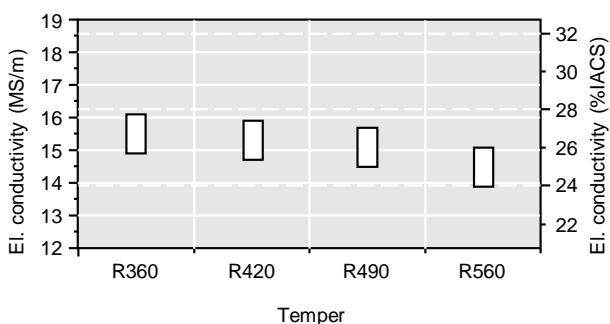
Electrical conductivity	15 MS/m	26 %IACS
Thermal conductivity	109 W/(m·K)	63 Btu·ft/(ft ² ·h·°F)
Coefficient of electrical resistance*	1.6 10 ⁻³ /K	0.9 10 ⁻³ /°F
Coefficient of thermal expansion*	21.1 10 ⁻⁶ /K	11.7 10 ⁻⁶ /°F
Density	8.43 g/cm ³	0.305 lb/in ³
Modulus of elasticity	102 GPa	14,800 ksi
Specific 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		
R360	360-440	52-64	≤ 270	≤ 39	≥ 30	(90-120)
R420	420-500	61-73	≥ 270	≥ 39	≥ 12	(120-150)
R490	490-570	71-83	≥ 420	≥ 61	-	(150-180)
R560	≥ 560	≥ 81	≥ 510	≥ 74	-	(≥ 175)

Electrical conductivity



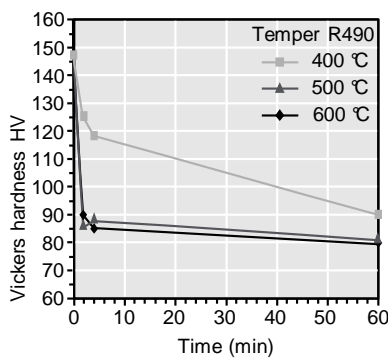
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Fatigue strength

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 .

Softening resistance



Vickers hardness after heat treatment (typical values)

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
- Strip width from 3 mm, however min. 10 x strip thickness

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