

Material Designation	
EN	CuZn15
UNS*	C23000

* Unified Numbering System (USA)

Chemical Composition (Reference)	
Cu	85 %
Zn	balance

Typical Applications
• Jewellery and metal goods
• Components for the electrical industry
• Cladding panels

Physical Properties*		
Electrical Conductivity	MS/m	21
	%IACS	36
Thermal Conductivity	W/(m·K)	159
Coefficient of Electrical Resistance**	10 ⁻³ /K	2.6
Coefficient of Thermal Expansion**	10 ⁻⁶ /K	18.5
Density	g/cm ³	8.75
Modulus of Elasticity	GPa	122
Specific Heat	J/(g·K)	0.380
Poisson's Ratio		0.34

* Reference values at room temperature

** Between 0 and 300 °C

Fabrication Properties	
Capacity for Being Cold Worked	good
Machinability	less suitable
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	excellent
Soft Soldering	excellent
Resistance Welding	good
Gas Shielded Arc Welding	good
Laser Welding	fair

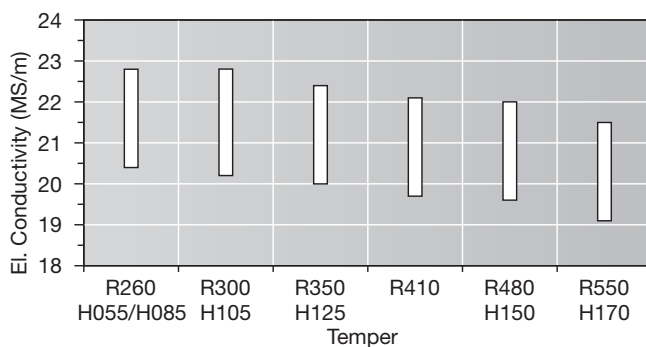
Corrosion Resistance
Good resistance to: fresh water, neutral or alkaline saline solutions, organic compounds as well as land, sea, and industrial atmosphere.
Not resistant to: acids, hydrous sulphur compounds, hydrous ammonia in the non-stress-relieved condition. Low sensitivity to stress corrosion cracking.

Mechanical Properties							
Temper		R260	R300	R350	R410	R480	R550
Tensile Strength R _m	MPa	260–310	300–370	350–420	410–490	480–560	≥ 550
Yield Strength R _{p0.2}	MPa	≤ 170	≥ 150	≥ 250	≥ 360	≥ 430	–
Elongation A _{50mm}	%	≥ 36	≥ 16	≥ 8	≥ 3	–	–

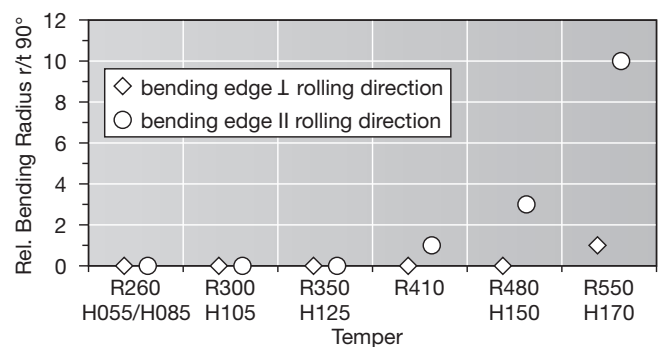
Temper	H055	H085	H105	H125	H150	H170
Hardness HV	55–85	85–115	105–135	125–155	150–180	≥ 170

Temper	G010	G020	G035	
Grain Size	mm	≤ 0.015	0.015–0.030	0.025–0.050
Hardness HV		≤ 105	≤ 85	≤ 75

Electrical Conductivity



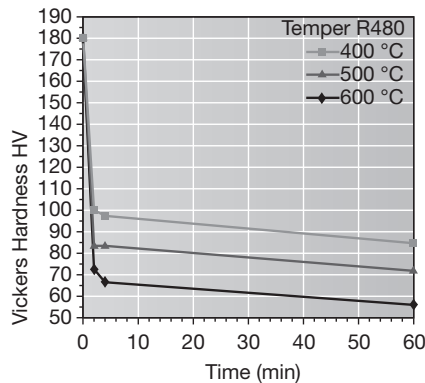
Bendability (Strip Thickness t ≤ 0.5 mm)



Wieland-M15

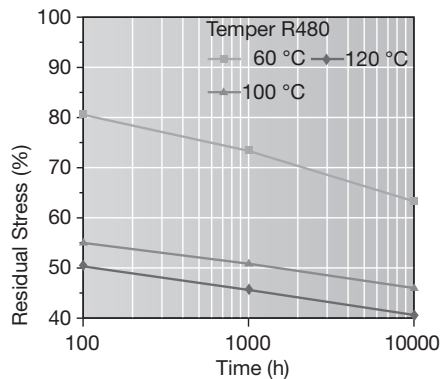
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Resistance to Softening



Vickers hardness
after heat treatment
(typical values)

Stress Relaxation



Stress remaining as a function
of service temperature and time.
Measured on rolled-to-temper
specimens parallel to rolling direction.
Values extrapolated according to
F. R. Larson, J. Miller, Trans ASME74
(1952) 765-775.
Total stress relaxation depends on
the applied stress level.

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 $\frac{1}{3}$ of the tensile strength R_m .

Types and Formats Available

- Standard coils with outside diameters up to 1400 mm
- Traverse-wound coils with drum weights up to 1.5 t
- Multicoil up to 5 t
- Hot-dip tinned strip
- Contour-milled strip
- Sheet
- Strip and sheet with protective coating

Dimensions Available

- Strip thickness from 0.10 mm, thinner gauges on request
- Strip width from 3 mm, however min. 10 x strip thickness

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