Wieland-M38
CuZn37
C27200

Rolled Products

Wieland

Material Designation	
EN	CuZn37
UNS*	C27200

** Unified Numbering System (USA)*

Chemical Composition (Reference)	
Cu	63 %
Zn	balance

Typical Applications

- Components for the electrical industry
- Stamped parts
- Connectors

Physical Properties*		
Electrical Conductivity	MS/m %IACS	15 26
Thermal Conductivity	W/(m·K)	120
Coefficient of Electrical Resistance**	10^{-3}/K	1.7
Coefficient of Thermal Expansion**	10^{-6}/K	20.2
Density	g/cm³	8.44
Modulus of Elasticity	GPa	110
Specific Heat	J/(g·K)	0.377
Poisson's Ratio		0.34

* *Reference values at room temperature*
** *Between 0 and 300 °C*

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

Corrosion Resistance

Good resistance to: fresh water, neutral or alkaline solutions, organic compounds as well as land, sea, and industrial atmosphere.

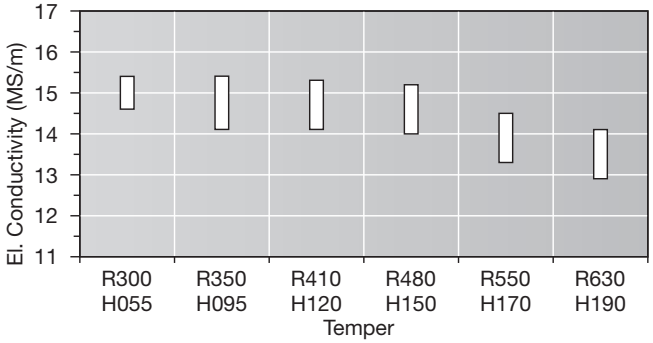
Not resistant to: acids, hydrous sulphur compounds, hydrous ammonia (stress corrosion cracking) in non-stress-relieved condition.

Mechanical Properties

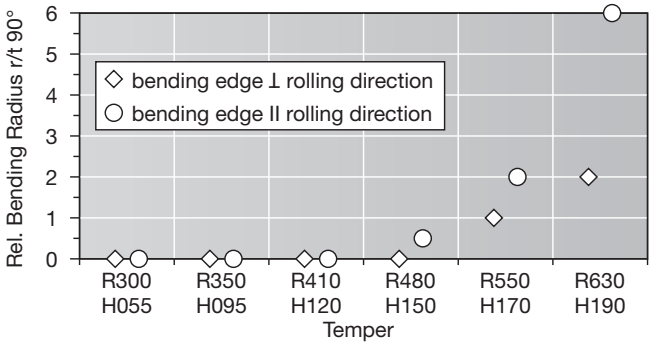
Temper		R300	R350	R410	R480	R550	R630
Tensile Strength R_m	MPa	300–370	350–440	410–490	480–560	550–640	≥ 630
Yield Strength $R_{p0.2}$	MPa	≤ 180	≥ 170	≥ 300	≥ 430	≥ 500	≥ 600
Elongation A_{50mm}	%	≥ 38	≥ 19	≥ 8	≥ 3	–	–

Temper	H055	H095	H120	H150	H170	H190
Hardness HV	55–95	95–125	120–155	150–180	170–200	≥ 190

Electrical Conductivity



Bendability (Strip Thickness t ≤ 0.5 mm)



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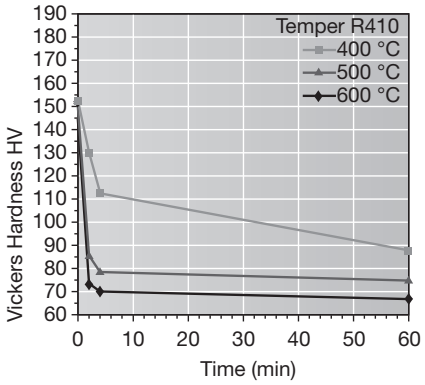
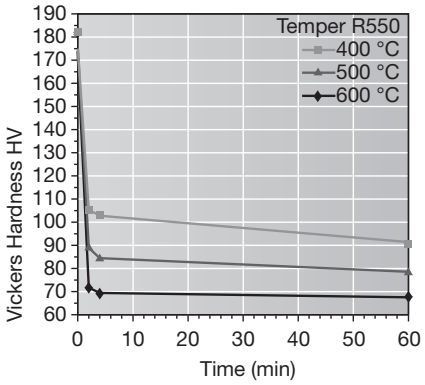
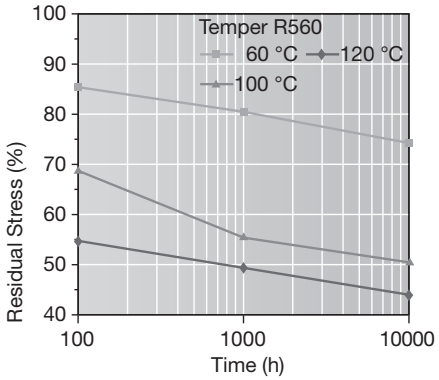
Resistance to Softening





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 $^1/_3$ 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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