

Material Designation	
EN	CuZn36
UNS*	C27000

* Unified Numbering System (USA)

Chemical Composition (Reference)	
Cu	64 %
Zn	balance

Typical Applications

- Metal goods
- Deep drawn parts
- Stamped parts
- Connectors
- Components for the electrical industry

Physical Properties*		
Electrical Conductivity	MS/m	15
	%IACS	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/cm ³	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.

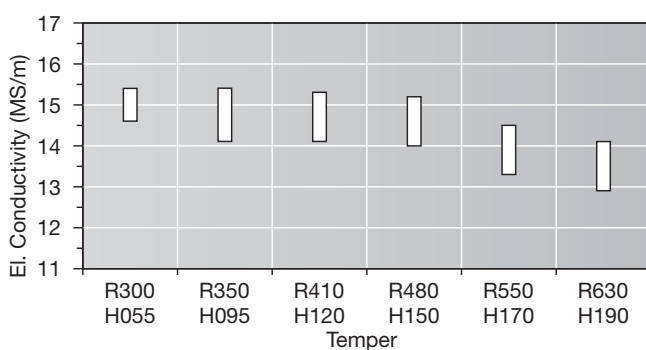
Mechanical Properties

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	–	–

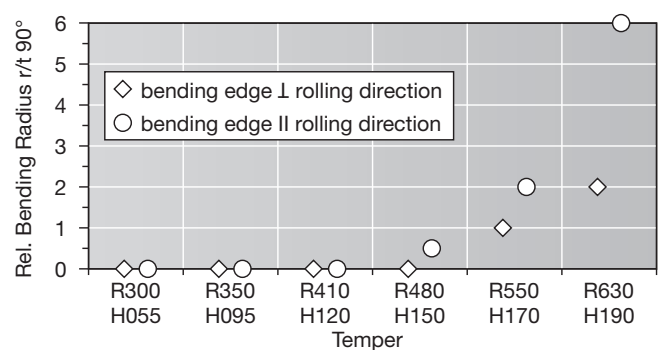
Temper		H055	H095	H120	H150	H170	H190
Hardness HV		55–95	95–125	120–155	150–180	170–200	≥ 190

Temper		G010	G020	G030	G050
Grain Size	mm	≤ 0.015	0.015–0.030	0.020–0.045	0.035–0.070
Hardness HV		≤ 120	≤ 95	≤ 90	≤ 80

Electrical Conductivity



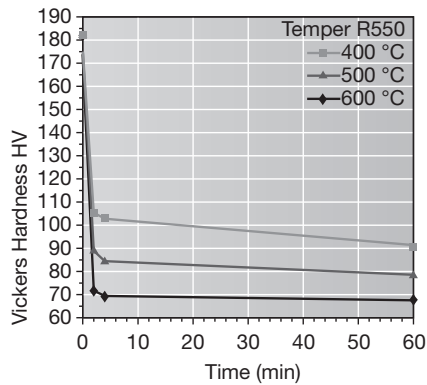
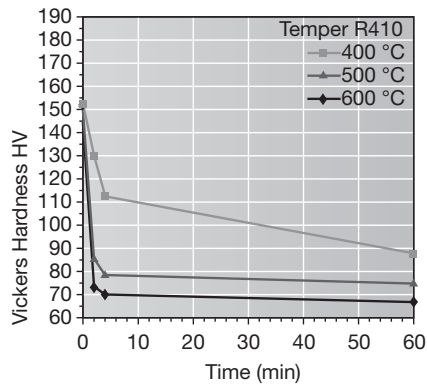
Bendability (Strip Thickness t ≤ 0.5 mm)



Wieland-M37

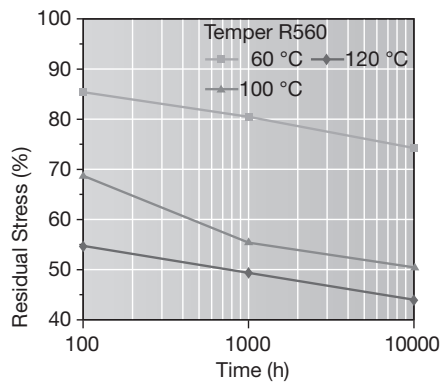
CuZn37
C27200

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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