

**Material Designation**

EN	no EN standard
UNS*	C70250

\* Unified Numbering System (USA)

**Chemical Composition (Reference)**

Ni	3 %
Si	0.65 %
Mg	0.15 %
Cu	balance

**Typical Applications**

- Components for the electrical industry
- Stamped parts
- Connectors
- Relay springs
- Semiconductor components

**Physical Properties\***

Electrical Conductivity	MS/m	25
	%IACS	43
Thermal Conductivity	W/(m·K)	190
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /K	1.8
Coefficient of Thermal Expansion**	10 <sup>-6</sup> /K	17.6
Density	g/cm <sup>3</sup>	8.82
Modulus of Elasticity	GPa	130
Specific Heat	J/(g·K)	0.399
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	good
Capacity for Being Hot-Dip Tinned	good
Soft Soldering	good
Resistance Welding	fair
Gas Shielded Arc Welding	good
Laser Welding	less suitable

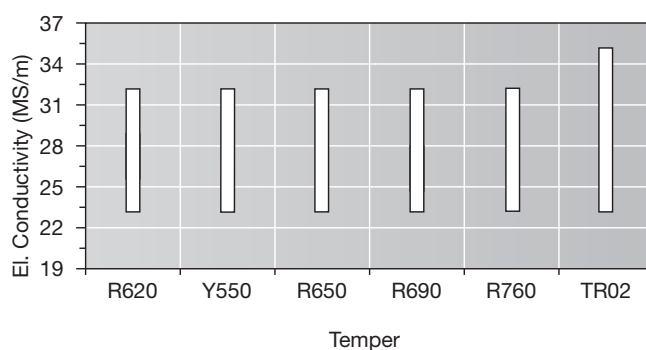
**Corrosion Resistance**

Wieland-K55® has good corrosion resistance in natural atmosphere. It is insensitive to stress corrosion cracking.

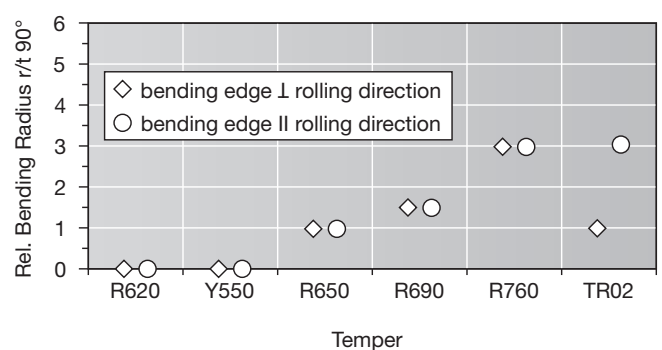
**Mechanical Properties**

Temper		R620	Y550	R650	R690	R760	TR02
Tensile Strength R <sub>m</sub>	MPa	620–760	620–740	650–780	690–800	760–840	608–725
Yield Strength R <sub>p0.2</sub>	MPa	≥ 500	≥ 550	≥ 585	≥ 655	≥ 720	550–650
Elongation A <sub>50mm</sub>	%	≥ 10	≥ 14	≥ 7	≥ 5	≥ 7	≥ 6
Hardness HV (for information only)		(180–220)	(180–230)	(200–240)	(220–260)	(210–250)	(180–220)

**Electrical Conductivity**



**Bendability (Strip Thickness t ≤ 0.5 mm)**

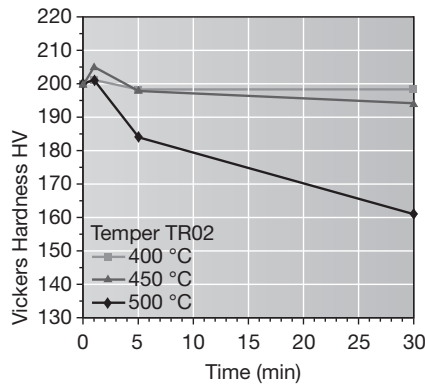
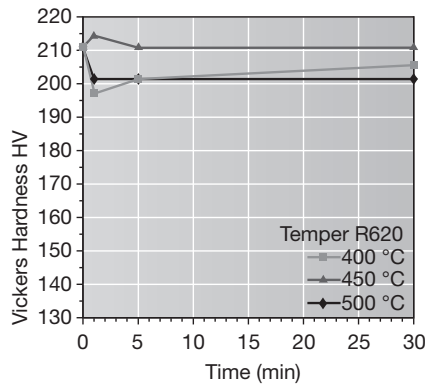


# Wieland-K55<sup>®</sup>

CuNi3Si1Mg

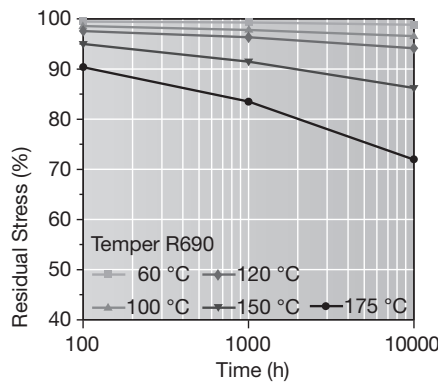
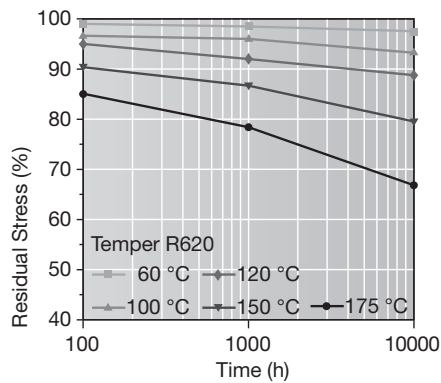
C70250

## Resistance to Softening



Vickers hardness after heat treatment (typical values)

## Stress Relaxation



Stress remaining as a function of service temperature and time. Measured on stress relief annealed 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

Wieland-Werke AG

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Rolled Products Division

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