

Material Designation	
EN	CuZn20
UNS*	C24000

\* Unified Numbering System (USA)

Chemical Composition (Reference)	
Cu	80 %
Zn	balance

Typical Applications
<ul style="list-style-type: none"> <li>Jewellery and metal goods</li> <li>Deep drawn parts</li> </ul>

Physical Properties*		
Electrical Conductivity	MS/m	19
	%IACS	33
Thermal Conductivity	W/(m·K)	142
Coefficient of Electrical Resistance**	10 <sup>-3</sup> /K	1.5
Coefficient of Thermal Expansion**	10 <sup>-6</sup> /K	18.8
Density	g/cm <sup>3</sup>	8.67
Modulus of Elasticity	GPa	119
Specific Heat	J/(g·K)	0.380
Poisson's Ratio		0.34

\* Reference values at room temperature

\*\* Between 0 and 300 °C

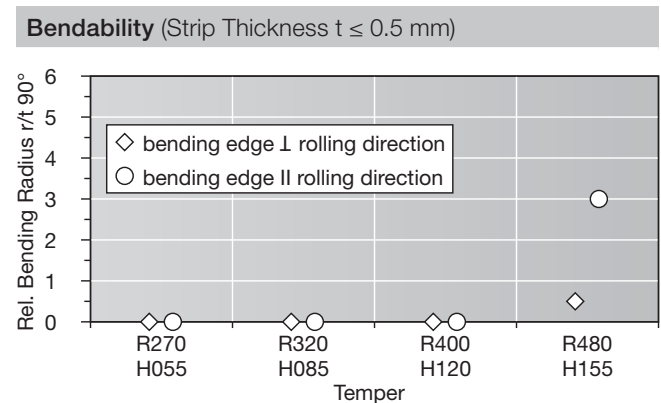
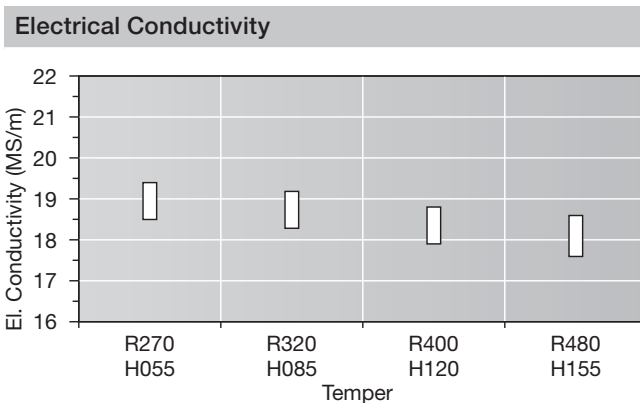
Fabrication Properties	
Capacity for Being Cold Worked	excellent
Machinability	less suitable
Capacity for Being Electroplated	excellent
Capacity for Being Hot-Dip Tinned	excellent
Soft Soldering	excellent
Resistance Welding	good
Gas Shielded Arc Welding	fair
Laser Welding	fair

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		R270	R320	R400	R480
Tensile Strength R <sub>m</sub>	MPa	270–320	320–400	400–480	≥ 480
Yield Strength R <sub>p0.2</sub>	MPa	≤ 150	≥ 200	≥ 320	≥ 440
Elongation A <sub>50mm</sub>	%	≥ 38	≥ 20	≥ 5	–

Temper	H055	H085	H120	H155
Hardness HV	55–85	85–120	120–155	≥ 155

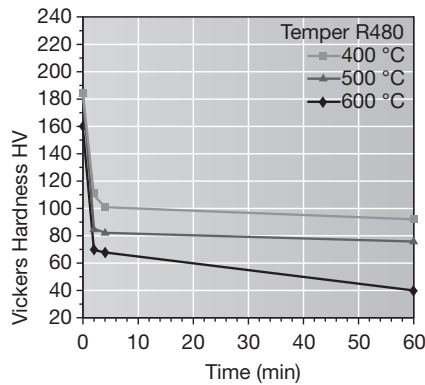
Temper	G010	G020	G035	
Grain Size	mm	≤ 0.015	0.015–0.030	0.025–0.050
Hardness HV		≤ 105	≤ 85	≤ 75



# Wieland-M20

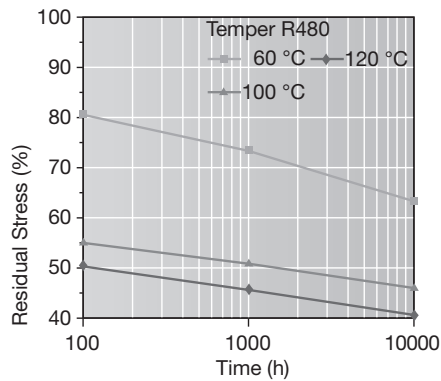
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## Resistance to Softening



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

Wieland-Werke AG

[www.wieland.com](http://www.wieland.com)

Rolled Products Division

Graf-Arco-Str. 36, 89079 Ulm, Germany, Phone +49 (0)731 944-0, Fax +49 (0)731 944-2772, [info@wieland.de](mailto:info@wieland.de)  
Ziegeleiweg 20, 42555 Velbert-Langenberg, Germany, Phone +49 (0)731 944-0, Fax +49 (0)731 944-9270, [info@wieland.de](mailto:info@wieland.de)  
Lantwattenstr. 11, 78007 Villingen-Schwenningen, Germany, Phone +49 (0)731 944-0, Fax +49 (0)731 944-7108, [info@wieland.de](mailto:info@wieland.de)

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