Wieland-M33

CuZn33 | C26800 | CW506L

Yellow Brass, as it is commonly known, is among the highest zinc-containing brasses available to designers. Exhibiting a handsome yellow color associated with brasses this alloy finds use in many of the same applications as other high brasses. C26800 offers similar mechanical and physical properties to that of other brasses and is often found in applications requiring an economical copper-based alloy. Designers considering applications requiring a material capable of heavy deep drawing should consider alloy C26000.

Chemical composition (Reference)	
Cu	67 %
Zn	remainder

Physical properties (Reference values at room temperature)				
Electrical conductivity	16	MS/m	28	%IACS
Thermal conductivity	121	W/(m·K)	70	Btu·ft/(ft²·h·℉)
Coefficient of electrical resistance*	1.6	10^{-3}/K	0.9	10^{-3}/℉
Coefficient of thermal expansion*	19.9	10^{-6}/K	11.1	10^{-6}/℉
Density	8.48	g/cm³	0.306	lb/in³
Modulus of elasticity	105	GPa	15,000	ksi
Specific heat	0.377	J/(g·K)	0.090	Btu/(lb·℉)
Poisson´s ratio	0.34		0.34	

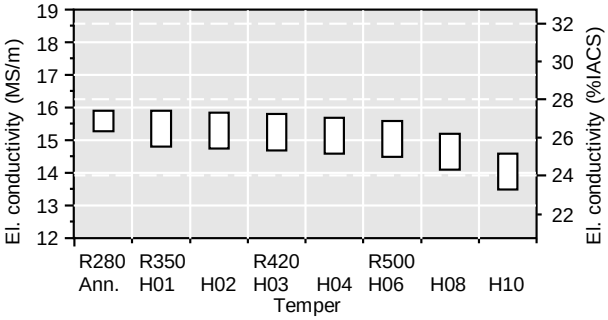
* Between 0 and 300 ℃

Mechanical properties (values in brackets are for information only)

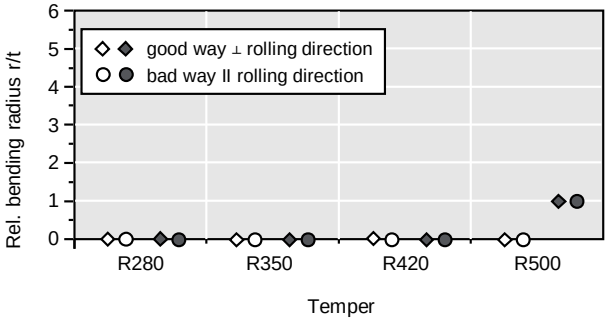
Temper	Tensile strength R_m		Yield strength $R_{p0.2}$		Elongation A_{50}	Hardness HV
	MPa	ksi	MPa	ksi	%	
R280	280-380	41-55	≤ 170	≤ 25	≥ 40	(55-90)
R350	350-430	51-62	≥ 170	≥ 25	≥ 23	(90-125)
R420	420-500	61-73	≥ 300	≥ 44	≥ 6	(120-155)
R500	≥ 500	≥ 73	≥ 450	≥ 65	-	(155-190)
Annealed	305-420	44-61	(160)	(23)	(52)	
H01*	340-405	49-59	(235)	(34)	(42)	
H02*	380-450	55-65	(305)	(44)	(36)	
H03*	425-495	62-72	(365)	(53)	(25)	
H04*	470-540	68-78	(395)	(57)	(19)	
H06*	545-615	79-89	(460)	(67)	(7)	
H08*	595-655	86-95	(490)	(71)	(5)	
H10*	620-685	90-99	(505)	(73)	(≤ 5)	

* According to ASTM B36

Electrical conductivity



Bendability (Strip thickness t ≤ 0.5 mm) ◇○ 90° ◆● 180°



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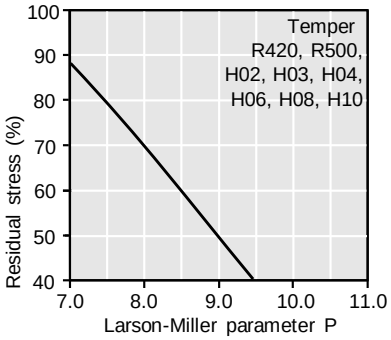
Thermal stress relaxation

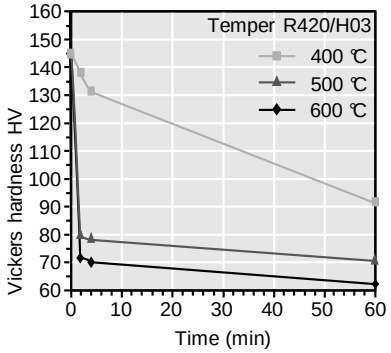


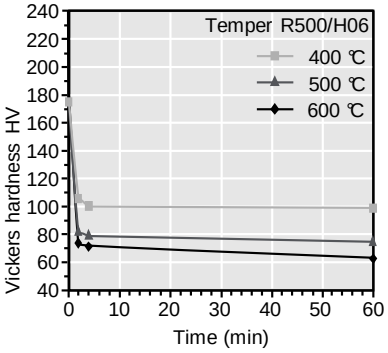
Stress remaining after thermal relaxation as a function of Larson-Miller parameter P
(F. R. Larson, J. Miller, Trans ASME74 (1952) 765–775) given by:
P = (20 + log(t))*(T + 273)*0.001.
Time t in hours, temperature T in ℃.
Example: P = 9 is equivalent to 1,000 h/118 ℃.
Measured on rolled to temper specimens parallel to rolling direction.
Total stress relaxation depends on the applied stress level.
Furthermore, it is increased to some extent by cold deformation.

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.

Softening resistance





Vickers hardness after heat treatment (typical values)

Types and formats available

- Standard coils with outside diameters up to 1,400 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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