C22600

CuZn12.5

The attractive golden hue of this metal makes it easy to understand how it received the name Jewelry Bronze. This beautiful brass can be buffed and lacquered to display its natural color, or used as a base for gold plating. Its moderate moderate strength, resistance to corrosion, electrical conductivity and ability to be deep drawn makes C22600 a great material option for many design engineers working on functional applications including hinges, doorknobs, and selected electrical connectors.

Chemical composition (Reference)	
Cu	87.5 %
Zn	remainder

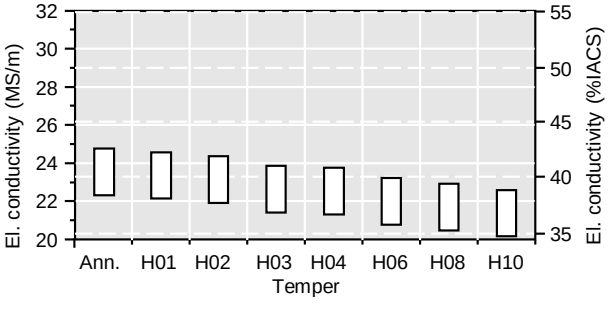
Physical properties (Reference values at room temperature)				
Electrical conductivity	23	MS/m	40	%IACS
Thermal conductivity	173	W/(m·K)	100	Btu·ft/(ft²·h·℉)
Coefficient of electrical resistance*	1.8	10^{-3}/K	1.0	10^{-3}/℉
Coefficient of thermal expansion*	18.6	10^{-6}/K	10.3	10^{-6}/℉
Density	8.87	g/cm³	0.317	lb/in³
Modulus of elasticity	117	GPa	17,000	ksi
Specific heat	0.380	J/(g·K)	0.091	Btu/(lb·℉)
Poisson´s ratio	0.34		0.34	

* Between 0 and 300 ℃

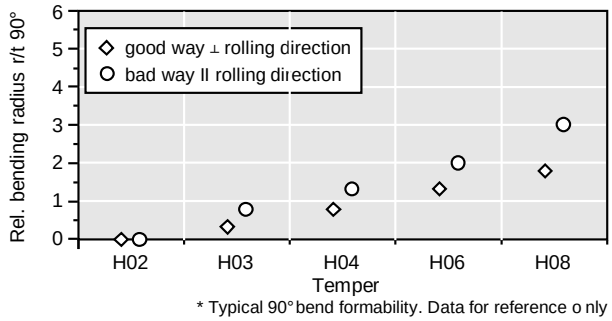
Mechanical properties (values in brackets are for information only)					
Temper	**Tensile strength R_m**		**Yield strength $R_{p0.2}$**		**Elongation A_{50} / $A_{2"}$**
	MPa	**ksi**	**MPa**	**ksi**	**%**
Annealed	255-310	37-45	(105)	(15)	(40)
H01*	290-360	42-52	(220)	(32)	(28)
H02*	340-405	49-59	(345)	(50)	(19)
H03*	380-450	55-65	(400)	(58)	(9)
H04*	415-475	60-69	(425)	(62)	(6)
H06*	475-530	69-77	(485)	(70)	(4)
H08*	515-570	75-83	(525)	(76)	(3)
H10*	540-595	78-86	(540)	(78)	(≤ 3)

* According to ASTM B36

Electrical conductivity



Bendability* (Strip thickness t ≤ 0.4 mm)



* Typical 90° bend formability. Data for reference o nly

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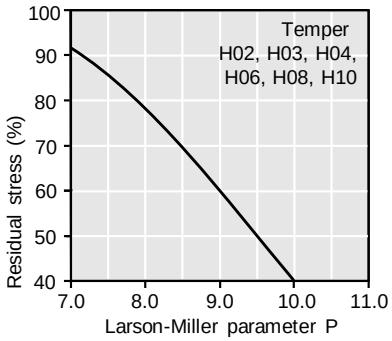
Thermal stress relaxation



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.

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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