ALLOY DATA

C22000
ASTM B36

wieland

Known for years as Commercial Bronze, this alloy derives its name from its rich bronze color. More a brass than an actually bronze, C220 offers a unique set of properties that make it great for applications requiring deep drawing and resistance to corrosion including values, buttons and pen ink tubes. Its appealing color also makes it ideal for architectural applications such as hinges, doorknobs, escutcheons and kick plates.

Chemical Composition

Copper[1]	**89.0 - 91.0%**
Zinc	**Remainder**
Lead	0.05% Max
Iron	0.05% Max

[1] Copper plus named elements, 99.8%

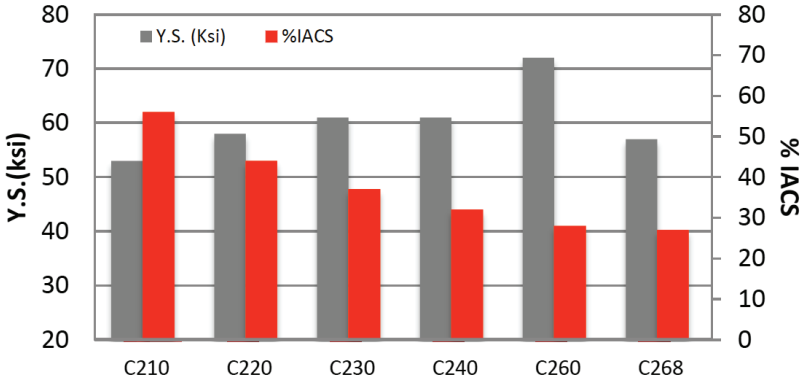

Figure 1: Comparison of Yield Strength and Electrical Conductivity performance of select Hard temper brass materials.

Physical Properties

	English Units	Metric Units
Density	0.318 lb/in^3 @ 68ºF	8.80 g/cm^3
Thermal Conductivity	109 BTU-ft/ft^2-hr-ºF	189 W/mK
Electrical Resistivity	23.6 ohm circ mils/ft	3.92 microhm-cm
Electrical Conductivity (annealed)	44% IACS*	0.255 megamho/cm
Modulus of Elasticity	17,000,000 psi	117 kN/mm^2
Coeff. Of Thermal Expansion		
68-572ºF (20-300ºC)	10.2 PPM/ºF	18.36 PPM/ºC

*International Annealed Copper Standard

Mechanical Properties

Temper[1]	Tensile Strength		Yield Strength		% Elongation[2]	Typical 90º Bend Formability GW/BW[3]	
	ksi	N/mm^2	ksi	N/mm^2			
Annealed (Soft)[4]	36-42	250-290	12	85	47	-	-
1/4 Hard	40-50	275-345	33	230	27	-	-
1/2 Hard	47-57	325-395	47	325	12	-	-
3/4 Hard	52-62	360-425	54	370	6	-	0.5
Hard	57-66	395-455	58	400	4	0.5	0.8
Extra Hard	64-72	440-495	63	435	2	1.0	1.3
Spring	69-77	475-530	68	470	1 Min	1.5	2.0
Extra Spring	72-80	495-550	70	485	1 Max		

[1] Mechanical properties subject to change. All rolled- tempers are accepted or rejected based on Tensile Strength.

[2] Nominal Values in 2" (51mm) [3] DATA FOR REFERENCE ONLY. R/T = Bend Radius/Material Thickness <0.016" (0.4mm) thick, 11/16 (17.5mm) wide.

[4] Annealed temper are manufactured to a grain size only, consult mill for additional info.