ALLOY DATA

C35300
ASTM B121

wieland

Known for its characteristics of excellent resistance to atmospheric corrosion, good strength and excellent machinability, alloy C353 has been the essential leaded Yellow Brass of choice for years. Also known as "clock brass" because of its use in clock and watch parts this alloy has found wide use in applications such as meter plates, gears, key stock and bearings. In addition to offering excellent machinability rating, alloy C353 also offers outstanding wear resistance for moving parts that are subject to frictional forces.

Chemical Composition

Copper[1]	**60.0-63.0%**
Lead	**1.5-2.5%**
Zinc	**Remainder**
Iron	**0.10% max**

[1] Copper plus named elements, 99.5% min

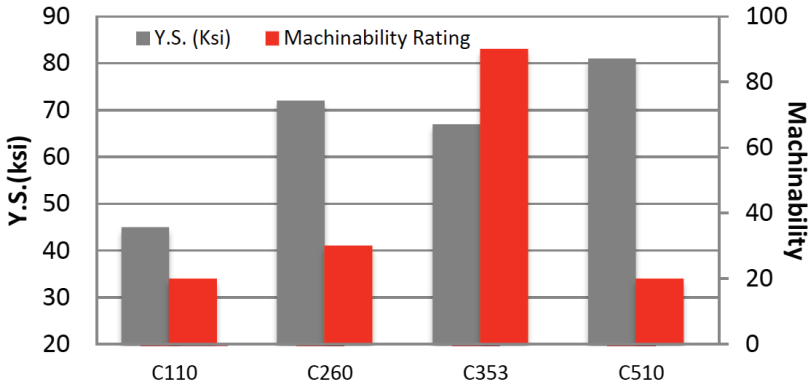

Figure 1: Comparison of Yield Strength and Machinability performance of select Hard temper copper based materials.

Physical Properties

	English Units	Metric Units
Density	0.306 lb/in^3 @ 68ºF	8.47 g/cm^3
Thermal Conductivity	67 BTU-ft/ft^2-hr-ºF	113 W/mºK
Electrical Resistivity	39.9 ohm circ mils/ft	6.63 microhm-cm
Electrical Conductivity (annealed)	26% IACS*	0.151 megamho/cm
Modulus of Elasticity	15,000,000 psi	105 kN/mm^2
Thermal Capacity(Specific Heat)	0.090 Btu/lb/Fº @ 68ºF	377.1 J/kg · ºC @ 20ºC
Coeff. Of Thermal Expansion		
68-572ºF (20-300ºC)	11.3 PPM/ºF	20.34 PPM/ºC

*International Annealed Copper Standard

Mechanical Properties

Temper[1]	Tensile Strength		Yield Strength[2]		% Elongation[2]	Rockwell B Hardness[2,3]
	ksi	N/mm^2	ksi	N/mm^2		
Annealed	46-54	315-370	21	145	56	72F
1/4 Hard	49-59	340-405	29	200	48	52
1/2 Hard	55-65	380-450	42	290	35	65
3/4 Hard	62-72	425-495	55	380	21	75
Hard	68-78	470-540	67	460	12	80
Extra Hard	79-89	545-615	78	540	6	86
Spring	86-95	595-655	84	580	4	89

[1] Mechanical properties subject to change. All tempers listed are made to a Tensile Strength specification unless otherwise noted.

[2] Nominal Values [3] Thickness > 0.020". Rockwell F where noted