Commonly cast copper and copper alloys grades

Copper Alloys

Group	EN 1982-2008										min. mechanical properties			
	number	symbol	old designation	Al	Fe	Mn	Ni	Pb	Sn	Zn	R_m [Mpa]	$R_{p0,2}$ [MPa]	A [%]	Hardness [HBW]
Tin bronze	CC480K	CuSn10-C	Gbz 10	max. 0,01	max. 0,2	max. 0,1	max. 2,0	max. 1,0	**10,0**	max. 0,5	250	130	18	70
	CC483K	CuSn12-C	Gbz 12	max. 0,01	max. 0,2	max. 0,2	max. 2,0	max. 0,7	**12,0**	max. 0,5	260	140	7	80
Tin-lead bronze (red bronze)	CC490K	CuSn3Zn8Pb5-C	Rg 2	max. 0,01	max. 0,5	-	max. 2,0	**5,0**	**3,0**	**8,0**	180	85	15	60
	CC491K	CuSn5Zn5Pb5-C	Rg 5	max. 0,01	max. 0,3	-	max. 2,0	**5,0**	**5,0**	**5,0**	200	90	13	60
	CC493K	CuSn7Zn4Pb7-C	Rg 7	max. 0,01	max. 0,2	-	max. 2,0	**6,5**	**7,0**	**3,5**	230	120	15	60
Aluminium bronze	CC331G	CuAl10Fe2-C	Fe-Al Bz	**9,5**	**2,5**	max. 1,0	max. 1,5	-	-	-	500	180	18	100
	CC332G	CuAl10Ni3Fe2-C	-	**9,5**	**2,0**	max. 2,0	**2,5**	-	-	-	500	180	18	100
	CC333G	CuAl10Fe5Ni5-C	Ni-Al Bz (AB2)	**9,5**	**5,0**	max. 3,0	**5,0**	-	-	-	600	250	13	140
Copper-nickel	CC380H	CuNi10Fe1Mn1-C	CuNi 90/10	max. 0,01	**1,5**	**1,3**	**10,0**	-	-	-	280	120	20	70
	CC381H	CuNi30Fe1Mn1-C	CuNi 70/30	max. 0,01	**1,0**	**1,0**	**30,0**	-	-	-	340	120	18	80
Brass	CC750s	CuZn33Pb2-C	GB-MS 65 A	max. 0,10	max. 0,7	max. 0,2	max. 1,0	**2,0**	max 1,5	remainder	180	70	12	45

Copper

Group	EN 1982-2008		chemical composition [%]			min. mechanical properties				min. conductivity	
	number	symbol	Cu	Cr	Zr	R_m [MPa] min.	$R_{p0,2}$ [MPa] min.	A [%] min.	Hardness [HBW] min.	Thermal [W/m.K]	Electrical [%IACS]
copper	CC040A	Cu-C	not specified	-	-	150	40	25	40	346	90
* high copper alloys	CC140C	CuCr-C	remainder	**0,4-1,2**	-	300	200	10	95	315	75
	-	CuCr1Zr-C	remainder	**0,6-1,2**	**0,03-0,3**	300	200	10	95	300	70

*By high copper alloys can be achieved different combination of mech. properties and conductivities via heat treatment optimalization and also with specific content of hardening elements (Cr,Zr).
Generally higher mech. properties are equel to lower electrical & thermal conductivity (and vice versa).