

**Table 12b: Wrought, Complex, Copper-zinc Alloys (Special Brasses) – Relevant Standards**

Material Designation		Inclusion in the following EN Standards with Indicated Material Conditions (1)											
Symbol	Number	1652	1653	1654	12163	12164	12165	12166	12167	12168	12449	12451	12452
		Plate, Sheet, Strip, Circles (2)	Plate, Sheet, Circles (3)	Strip for Springs, Connectors	Rod (2)	Rod for Free-machining	Forging Stock	Wire	Profiles, Rectangular Bar (2)	Hollow Rod for Free-machining	Tubes (2)	Tubes for Heat Exchangers	Finned Tubes for Heat Exchangers
<b>Corrosion Resistant Alloys</b>													
CuZn13Al1Ni1Si1	CW700R										MRH		
CuZn20Al2As	CW702R	RH	R								MRH	RH	RH
CuZn28Sn1As	CW706R											RH	RH
CuZn30As	CW707R											RH	
CuZn38AlFeNiPbSn	CW715R		R										
CuZn38Sn1As	CW717R		R										
CuZn32Pb2AsFeSi	CW709R				MRH								
CuZn36Pb2Sn1	CW711R					MR				MH			
CuZn36Sn1Pb	CW712R				MRH		MH	MRH	MRH				
CuZn37Pb1Sn1	CW714R					MR	MH	MRH	MRH	MH			
CuZn39Sn1	CW719R		R		MRH		MH		MRH				
<b>High Tensile Brasses</b>													
CuZn23Al6Mn4Fe3Pb	CW704R				MRH		MH						
CuZn25Al5Fe2Mn2Pb	CW705R				MRH		MH						
CuZn35Ni3Mn2AlPb	CW710R				MRH		MH		MRH		MRH		
CuZn40Mn1Pb1AlFeSn	CW721R					MR	MH		MRH	MH			
CuZn40Mn1Pb1FeSn	CW722R					MR	MH		MRH	MH			
CuZn31Si1	CW708R				MRH						MRH		
CuZn37Mn3Al2PbSi	CW713R					MR	MH		MRH	MH	MRH		
CuZn39Mn1AlPbSi	CW718R				MRH		MH		MRH		MRH		
<b>Other Brasses</b>													
CuZn19Sn	CW701R							MRH					
CuZn23Al3Co	CW703R		RH										
CuZn38Mn1Al	CW716R				MRH						MRH		
CuZn40Mn1Pb1	CW720R					MR	MH	MRH	MRH	MH			
CuZn40Mn2Fe1	CW723R				MRH		MH		MRH		MRH		

**Notes:**

(1) M – as manufactured  
 R – mandatory tensile strength  
 H – mandatory hardness (HB)

(2) For general purposes  
 (3) For boilers, pressure vessels and hot water storage units