

Table 6b: Unwrought (1) and Wrought Coppers - Relevant Standards

Material Designation			Inclusion in the following EN Standards with Indicated Material Conditions (2)																
Symbol	Number		1652	1653	1758	12163	12165	12166	12167	12449	12451	12452	1977	13599	13600	13601	13602	13605	
	Unwrought	Wrought	Plate, Strip, Sheet, Circles (3)	Plate, Sheet, Circles (4)	Strip for Lead Frames	Rod (3)	Forging Stock	Wire	Profiles, Rectangular Bar	Tubes (3)	Tubes for Heat Exchangers	Finned Tubes for Heat Exchangers	Copper Drawing Stock (Wire Rod)	Copper Plate, Sheet, Strip	Seamless Copper Tubes	Copper Rod, Bar, Wire	Drawn Round Copper Wire	Copper Profiles	
Copper Cathode													(For Electrical Purposes)						
Cu-CATH-1	CR001A	–																	
Cu-CATH-2	CR002A	–																	
Coppers ex Cu-CATH-1																			
Cu-ETP1	CR003A	CW003A											SV					AR	
Cu-OF1	CR007A	CW007A											EV					AR	
Cu-OFE	CR009A	CW009A											EV						
Cu-PHCE	CR022A	CW022A											EV						
Other Unalloyed Coppers																			
Cu-ETP	CR004A	CW004A	RH						MH				V	MRH	DRH	DRH	AR	DRH	
Cu-FRHC	CR005A	CW005A											V	MRH	DRH	DRH	AR	DRH	
Cu-OF	CR008A	CW008A	RH						MH				EV	MRH	DRH	DRH	AR	DRH	
Cu-FRTP	CR006A	CW006A	RH				MRH												
Phosphorus-containing Coppers																			
Cu-PHC	CR020A	CW020A											EV	MRH	DRH	DRH			DRH
Cu-HCP	CR021A	CW021A							MH				EV	MRH	DRH	DRH			DRH
Cu-DLP	CR023A	CW023A	RH	R	RH	MRH			MRH										
Cu-DHP	CR024A	CW024A	RH	R		MRH	MH	MRHG	MRH	MRH	RH	RH							
Cu-DXP	CR025A	–																	
Silver-bearing Coppers																			
CuAg0.04	CR011A	CW011A											V				DRH		DRH
CuAg0.07	CR012A	CW012A											V				DRH		DRH
CuAg0.10	CR013A	CW013A											V	MRH	DRH	DRH	DRH		DRH
CuAg0.04P	CR014A	CW014A											EV				DRH		DRH
CuAg0.07P	CR015A	CW015A											EV				DRH		DRH
CuAg0.10P	CR016A	CW016A											EV	MRH	DRH	DRH	DRH		DRH
CuAg0.04(OF)	CR017A	CW017A											EV				DRH		DRH
CuAg0.07(OF)	CR018A	CW018A											EV				DRH		DRH
CuAg0.10(OF)	CR019A	CW019A											EV	MRH	DRH	DRH	DRH		DRH

Notes:

(1) Unwrought coppers in EN 1976 – Cast Unwrought Copper Products and EN 1978 – Copper Cathodes

(2) A – mandatory elongation
 D – cold worked
 E – mandatory hydrogen embrittlement test
 G – mandatory grain size

H – mandatory hardness
 M – as manufactured
 R – mandatory tensile strength
 S – spiral elongation test
 V – volume resistivity test

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