Brass strips

Descripción	Rolled brass CuZn sheets or strips in rolls for general, industrial and decorative applications. Annealed, semi-hard and hard state.

BRONMETAL

Alloys

Material Designation		Composition in % (mass fraction)																Density g/cm³
Symbolic	Numerical	Element	Cu	Al	As	Be	C	Co	Fe	Mn	Ni	P	Pb	S	Si	Sn	Zn	Total other	approx.
CuZn5	CW500L	min.	94,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,9
		max.	96,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn10	CW501L	min.	89,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,8
		max.	91,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn15	CW502L	min.	84,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,8
		max.	86,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn20	CW503L	min.	79,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,7
		max.	81,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn30	CW505L	min.	69,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,5
		max.	71,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn33	CW506L	min.	66,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,5
		max.	68,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn36	CW507L	min.	63,5	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	65,5	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn37	CW508L	min.	62,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	0,1	–	–	0,1	–	0,1	

BRONMETAL

Material Designation		Composition in % (mass fraction)																Density g/cm^3
Symbolic	Numerical	Element	Cu	Al	As	Be	C	Co	Fe	Mn	Ni	P	Pb	S	Si	Sn	Zn	Total other	approx.
CuZn40	CW509L	min.	59,5	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	61,5	0,05	–	–	–	–	0,2	–	0,3	–	0,3	–	–	0,1	–	0,2	
CuZn35Pb1	CW600N	min.	62,5	–	–	–	–	–	–	–	–	–	0,8	–	–	–	Rest	–	8,5
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	1,6	–	–	0,1	–	0,1	
CuZn37Pb0,5	CW604N	min.	62,0	–	–	–	–	–	–	–	–	–	0,1	–	–	–	Rest	–	8,4
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	0,8	–	–	0,2	–	0,2	
CuZn37Pb2	CW606N	min.	61,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	62,0	0,05	–	–	–	–	0,2	–	0,3	–	2,5	–	–	0,2	–	0,2	
CuZn38Pb2	CW608N	min.	60,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	61,0	0,05	–	–	–	–	0,2	–	0,3	–	2,5	–	–	0,2	–	0,2	
CuZn39Pb0,5	CW610N	min.	69,0	–	–	–	–	–	–	–	–	–	0,2	–	–	–	Rest	–	8,4
		max.	60,5	0,05	–	–	–	–	0,2	–	0,3	–	0,8	–	–	0,2	–	0,2	
CuZn39Pb2	CW612N	min.	59,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	60,0	0,05	–	–	–	–	0,3	–	0,3	–	2,5	–	–	0,3	–	0,2	
CuZn20Al2As	CW702R	min.	76,0	1,8	0,02	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	79,0	2,3	0,06	–	–	–	0,07	0,1	0,1	0,01	0,05	–	–	–	–	0,3	

Possibility of supplying in: polished surface finish, and/or plasticized finish

BRONMETAL

Technical characteristics

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn5	CW500L	R230	0,2	5	230	280	(max. 130)	36	45	–	–	–	–
		H045			–	–	–	–	–	45	75	–	–
		R270	0,2	5	270	350	(min. 200)	12	19	–	–	–	–
		H075			–	–	–	–	–	75	110	–	–
		R340	0,2	5	340	–	(min. 280)	4	8	–	–	–	–
		H110			–	–	–	–	–	110	–	–	–
CuZn10	CW501L	R240	0,2	5	240	290	(max.140)	36	45	–	–	–	–
		H050			–	–	–	–	–	50	80	–	–
		R280	0,2	5	280	360	(min. 200)	13	20	–	–	–	–
		H080			–	–	–	–	–	80	110	–	–
		R350	0,2	5	350	–	(min. 290)	4	8	–	–	–	–
		H110			–	–	–	–	–	110	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn15	CW502L	R260	0,2	5	260	310	(max. 170)	36	45	–	–	–	–
		H055			–	–	–	–	–	55	85	–	–
		G010	0,2	1	(340)		(190)	(50)	–	–	105	–	0,015
		G020	0,2	2	(300)		(125)	(50)	–	–	85	0,015	0,030
		G035			(290)		(110)	(50)	–	–	75	0,025	0,050
		R300	0,2	5	300	370	(min. 150)	16	25	–	–	–	–
		H085			–	–	–	–	–	85	115	–	–
		R350	0,2	5	350	420	(min. 250)	4	12	–	–	–	–
		H105			–	–	–	–	–	105	135	–	–
		R410	0,2	5	410	–	(min. 360)	–	–	–	–	–	–
		H125			–	–	–	–	–	125	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn20	CW503L	R270	0,2	5	270	320	(max. 150)	38	48	–	–	–	–
		H055			–	–	–	–	–	55	85	–	–
		G010	0,2	1	(340)		(190)	(50)	–	–	105	–	0,015
		G020	0,2	2	(300)		(125)	(50)	–	–	85	0,015	0,030
		G035			(290)		(110	(50)	–	–	75	0,025	0,050
		R320	0,2	5	320	400	(min. 200)	20	28	–	–	–	–
		H085			–	–	–	–	–	85	120	–	–
		R400	0,2	5	400	480	(min. 320)	5	12	–	–	–	–
		H120			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	–	(min. 440)	–	–	–	–	–	–
		H155			–	–	–	–	–	155	–		

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn30	CW505L	R270	0,2	5	270	350	(max. 160)	40	50	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		G075			(310)		(90)	(50)	–	–	70	0,050	0,100
		R350	0,2	5	350	430	(min. 170)	21	33	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R410	0,2	5	410	490	(min. 260)	9	15	–	–	–	–
		H120			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	–	(min. 430)	–	–	–	–	–	–
		H150			–	–	–	–	–	150	–	–	–

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn33	CW506L	R280	0,2	5	280	380	(max. 170)	40	50	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		R350	0,2	5	350	430	(min. 170)	23	31	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R420	0,2	5	420	500	(min. 300)	6	13	–	–	–	–
		H125			–	–	–	–	–	120	155	–	–
		R500	0,2	2	500	–	(min. 450)	–	–	–	–	–	–
		H155			–	–	–	–	–	155	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn36 CuZn37	CW507L CW508L	R300	0,2	5	300	370	(max. 180)	38	46	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2,0	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		R350	0,2	5	350	440	(min. 170)	19	28	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R410	0,2	5	410	490	(min. 300)	8	12	–	–	–	–
		H125			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	560	(min. 430)	3	–	–	–	–	–
		150			–	–	–	–	–	150	180	–	–
		R550	0,2	2	550	–	(min. 500)	–	–	–	–	–	–
		H170			–	–	–	–	–	170	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn40	CW509L	R340	0,3	10	340	420	(max. 240)	33	43	–	–	–	–
		H085			–	–	–	–	–	85	115	–	–
		R400	0,3	10	400	480	(min. 200)	15	23	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R470	0,3	5	470	–	(min. 390)	6	12	–	–	–	–
		H140			–	–	–	–	–	140	–	–	–
CuZn35Pb1 CuZn37Pb0,5 CuZn37Pb2	CW600N CW604N CW606N	R290	0,3	5	290	370	(max. 200)	40	50	–	–	–	–
		H060			–	–	–	–	–	60	110	–	–
		R370	0,3	5	370	440	(min. 200)	19	28	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R440	0,3	2	440	540	(min. 370)	5	12	–	–	–	–
		H140			–	–	–	–	–	140	170	–	–
		R540	0,3	2	540	–	(min.490)	–	–	–	–	–	–
		H170			–	–	–	–	–	170	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn39Pb2	CW612N	R360	0,3	5	360	440	(max. 270)	30	40	–	–	–	–
		H090			–	–	–	–	–	90	120	–	–
		R420	0,3	5	420	500	(min. 270)	12	20	–	–	–	–
		H120			–	–	–	–	–	120	150	–	–
		R490	0,3	5	490	570	(min. 420)	–	9	–	–	–	–
		H150			–	–	–	–	–	150	180	–	–
		R560	0,3	2	560	–	(min. 510)	–	–	–	–	–	–
		H175			–	–	–	–	–	175	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn38Pb2 CuZn39Pb0,5	CW608N CW610N	R340	0,3	10	340	420	(max. 240)	33	43	–	–	–	–
		H075			–	–	–	–	–	75	110	–	–
		R400	0,3	10	400	480	(min. 200)	14	23	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R470	0,3	5	470	550	(min. 390)	5	12	–	–	–	–
		H140			–	–	–	–	–	140	170	–	–
		R540	0,3	2	540	–	(min. 490)	–	–	–	–	–	–
		H165			–	–	–	–	–	165	–	–	–
CuZn20Al2As	CW702R	R330	3	15	330	–	(min. 90)	–	30	–	–	–	–
		H070			–	–	–	–	–	70	105	–	–
		R390	3	15	390	–	(min. 240)	–	25	–	–	–	–
		H100			–	–	–	–	–	100	–	–	–

BRONMETAL

Tolerances

TOLERANCES ON THICKNESS OF HOT-ROLLED PRODUCTS

Nominal thickness		Thickness tolerances for nominal widths						
		Up to and including 700		Greater than 700, up to and inc. 1000		Greater than 1000, up to and inc. 1500		Greater than 1500
greather than	up to and including	1)	2)	1)	2)	1)	2)	
–	2,5	By agreement		By agreement		By agreement		By agreement
2,5	5,0	± 0,25	± 0,30	± 0,30	± 0,35	± 0,35	± 0,45	
5,0	7,5	± 0,35	± 0,45	± 0,40	± 0,50	± 0,45	± 0,55	
7,5	10	± 0,45	± 0,60	± 0,50	± 0,65	± 0,55	± 0,75	
10	15	± 0,75	± 0,95	± 0,80	± 1,00	± 0,90	± 1,10	
15	25	± 0,95	± 1,20	± 1,05	± 1,30	± 1,30	± 1,60	
25	50	± 1,30	± 1,60	± 1,40	± 1,75	± 1,50	± 1,90	
50	–	± 1,50	± 1,90	± 1,65	± 2,05	± 1,80	± 2,20	
1) For all materials, except CuAl8Fe3 (CW303G), CuNi10Fe1Mn (CW352H), CuNi30Mn1Fe (CW354H) y CuZn20Al2As (CW702R).								
2) For all alloys CuAl8Fe3 (CW303G), CuNi10Fe1Mn (CW352H), CuNi30Mn1Fe (CW354H) y CuZn20Al2As (CW702R).								

TOLERANCES ON THICKNESS OF COLD ROLLED PRODUCTS

BRONMETAL

Nominal thickness		Thickness tolerances for nominal widths[a]			
greather than	up to and including	Up to and including 350	greather than 350 Up to and including 700	Greater than 700, up to and inc. 1000	Greater than 1000, up to and inc. 1250
0.1[b]	0,2	± 0,018	–	–	–
0,2	0,3	± 0,022	± 0,03	± 0,04	–
0,3	0,4	± 0,025	± 0,04	± 0,05	± 0,07
0,4	0,5	± 0,03	± 0,05	± 0,06	± 0,08
0,5	0,8	± 0,04	± 0,06	± 0,07	± 0,09
0,8	1,2	± 0,05	± 0,07	± 0,09	± 0,10
1,2	1,8	± 0,06	± 0,08	± 0,10	± 0,11
1,8	2,5	± 0,07	± 0,09	± 0,11	± 0,13
2,5	3,2	± 0,08	± 0,10	± 0,13	± 0,17
3,2	4,0	± 0,10	± 0,12	± 0,15	± 0,20
4,0	5,0	± 0,12	± 0,14	± 0,17	± 0,23
5,0	6,0	± 0,14	± 0,16	± 0,20	± 0,26
6,0	7,0	± 0,16	± 0,19	± 0,23	± 0,29
7,0	8,0	± 0,18	± 0,22	± 0,26	± 0,32
8,0	9,0	± 0,20	± 0,25	± 0,29	± 0,35
9,0	10,0	± 0,22	± 0,28	± 0,32	± 0,38

[a] For all alloys CuAl8Fe3 (CW303G), CuNi10Fe1Mn (CW352H), CuNi30Mn1Fe (CW354H) y CuZn20Al2As (CW702R), tolerances on thickness must be multiplied by 1.25 and the redult rounded up to 0.01mm

[b] includes 0.1.

Nominal thickness		Thickness tolerances for nominal widths[a]			
greather than	up to and including	Up to and including 350	greather than 350 Up to and including 700	Greater than 700, up to and inc. 1000	Greater than 1000, up to and inc. 1250
NOTA – For thicknesses greater than 10 mm, tolerances are those indicated in Norm EN 1653.					

BRONMETAL

Alloys

Material Designation		Composition in % (mass fraction)																Density g/cm³
Symbolic	Numerical	Element	Cu	Al	As	Be	C	Co	Fe	Mn	Ni	P	Pb	S	Si	Sn	Zn	Total other	approx.
CuZn5	CW500L	min.	94,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,9
		max.	96,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn10	CW501L	min.	89,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,8
		max.	91,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn15	CW502L	min.	84,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,8
		max.	86,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn20	CW503L	min.	79,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,7
		max.	81,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn30	CW505L	min.	69,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,5
		max.	71,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn33	CW506L	min.	66,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,5
		max.	68,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn36	CW507L	min.	63,5	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	65,5	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn37	CW508L	min.	62,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	0,1	–	–	0,1	–	0,1	

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Material Designation		Composition in % (mass fraction)																Density g/cm^3
Symbolic	Numerical	Element	Cu	Al	As	Be	C	Co	Fe	Mn	Ni	P	Pb	S	Si	Sn	Zn	Total other	approx.
CuZn40	CW509L	min.	59,5	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	61,5	0,05	–	–	–	–	0,2	–	0,3	–	0,3	–	–	0,1	–	0,2	
CuZn35Pb1	CW600N	min.	62,5	–	–	–	–	–	–	–	–	–	0,8	–	–	–	Rest	–	8,5
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	1,6	–	–	0,1	–	0,1	
CuZn37Pb0,5	CW604N	min.	62,0	–	–	–	–	–	–	–	–	–	0,1	–	–	–	Rest	–	8,4
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	0,8	–	–	0,2	–	0,2	
CuZn37Pb2	CW606N	min.	61,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	62,0	0,05	–	–	–	–	0,2	–	0,3	–	2,5	–	–	0,2	–	0,2	
CuZn38Pb2	CW608N	min.	60,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	61,0	0,05	–	–	–	–	0,2	–	0,3	–	2,5	–	–	0,2	–	0,2	
CuZn39Pb0,5	CW610N	min.	69,0	–	–	–	–	–	–	–	–	–	0,2	–	–	–	Rest	–	8,4
		max.	60,5	0,05	–	–	–	–	0,2	–	0,3	–	0,8	–	–	0,2	–	0,2	
CuZn39Pb2	CW612N	min.	59,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	60,0	0,05	–	–	–	–	0,3	–	0,3	–	2,5	–	–	0,3	–	0,2	
CuZn20Al2As	CW702R	min.	76,0	1,8	0,02	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	79,0	2,3	0,06	–	–	–	0,07	0,1	0,1	0,01	0,05	–	–	–	–	0,3	

Possibility of supplying in: polished surface finish, and/or plasticized finish

BRONMETAL

Technical characteristics

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn5	CW500L	R230	0,2	5	230	280	(max. 130)	36	45	–	–	–	–
		H045			–	–	–	–	–	45	75	–	–
		R270	0,2	5	270	350	(min. 200)	12	19	–	–	–	–
		H075			–	–	–	–	–	75	110	–	–
		R340	0,2	5	340	–	(min. 280)	4	8	–	–	–	–
		H110			–	–	–	–	–	110	–	–	–
CuZn10	CW501L	R240	0,2	5	240	290	(max.140)	36	45	–	–	–	–
		H050			–	–	–	–	–	50	80	–	–
		R280	0,2	5	280	360	(min. 200)	13	20	–	–	–	–
		H080			–	–	–	–	–	80	110	–	–
		R350	0,2	5	350	–	(min. 290)	4	8	–	–	–	–
		H110			–	–	–	–	–	110	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn15	CW502L	R260	0,2	5	260	310	(max. 170)	36	45	–	–	–	–
		H055			–	–	–	–	–	55	85	–	–
		G010	0,2	1	(340)		(190)	(50)	–	–	105	–	0,015
		G020	0,2	2	(300)		(125)	(50)	–	–	85	0,015	0,030
		G035			(290)		(110)	(50)	–	–	75	0,025	0,050
		R300	0,2	5	300	370	(min. 150)	16	25	–	–	–	–
		H085			–	–	–	–	–	85	115	–	–
		R350	0,2	5	350	420	(min. 250)	4	12	–	–	–	–
		H105			–	–	–	–	–	105	135	–	–
		R410	0,2	5	410	–	(min. 360)	–	–	–	–	–	–
		H125			–	–	–	–	–	125	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn20	CW503L	R270	0,2	5	270	320	(max. 150)	38	48	–	–	–	–
		H055			–	–	–	–	–	55	85	–	–
		G010	0,2	1	(340)		(190)	(50)	–	–	105	–	0,015
		G020	0,2	2	(300)		(125)	(50)	–	–	85	0,015	0,030
		G035			(290)		(110	(50)	–	–	75	0,025	0,050
		R320	0,2	5	320	400	(min. 200)	20	28	–	–	–	–
		H085			–	–	–	–	–	85	120	–	–
		R400	0,2	5	400	480	(min. 320)	5	12	–	–	–	–
		H120			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	–	(min. 440)	–	–	–	–	–	–
		H155			–	–	–	–	–	155	–		

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn30	CW505L	R270	0,2	5	270	350	(max. 160)	40	50	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		G075			(310)		(90)	(50)	–	–	70	0,050	0,100
		R350	0,2	5	350	430	(min. 170)	21	33	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R410	0,2	5	410	490	(min. 260)	9	15	–	–	–	–
		H120			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	–	(min. 430)	–	–	–	–	–	–
		H150			–	–	–	–	–	150	–	–	–

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn33	CW506L	R280	0,2	5	280	380	(max. 170)	40	50	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		R350	0,2	5	350	430	(min. 170)	23	31	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R420	0,2	5	420	500	(min. 300)	6	13	–	–	–	–
		H125			–	–	–	–	–	120	155	–	–
		R500	0,2	2	500	–	(min. 450)	–	–	–	–	–	–
		H155			–	–	–	–	–	155	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn36 CuZn37	CW507L CW508L	R300	0,2	5	300	370	(max. 180)	38	46	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2,0	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		R350	0,2	5	350	440	(min. 170)	19	28	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R410	0,2	5	410	490	(min. 300)	8	12	–	–	–	–
		H125			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	560	(min. 430)	3	–	–	–	–	–
		150			–	–	–	–	–	150	180	–	–
		R550	0,2	2	550	–	(min. 500)	–	–	–	–	–	–
		H170			–	–	–	–	–	170	–	–	–

BRONMETAL

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn40	CW509L	R340	0,3	10	340	420	(max. 240)	33	43	–	–	–	–
		H085			–	–	–	–	–	85	115	–	–
		R400	0,3	10	400	480	(min. 200)	15	23	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R470	0,3	5	470	–	(min. 390)	6	12	–	–	–	–
		H140			–	–	–	–	–	140	–	–	–
CuZn35Pb1 CuZn37Pb0,5 CuZn37Pb2	CW600N CW604N CW606N	R290	0,3	5	290	370	(max. 200)	40	50	–	–	–	–
		H060			–	–	–	–	–	60	110	–	–
		R370	0,3	5	370	440	(min. 200)	19	28	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R440	0,3	2	440	540	(min. 370)	5	12	–	–	–	–
		H140			–	–	–	–	–	140	170	–	–
		R540	0,3	2	540	–	(min.490)	–	–	–	–	–	–
		H170			–	–	–	–	–	170	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn39Pb2	CW612N	R360	0,3	5	360	440	(max. 270)	30	40	–	–	–	–
		H090			–	–	–	–	–	90	120	–	–
		R420	0,3	5	420	500	(min. 270)	12	20	–	–	–	–
		H120			–	–	–	–	–	120	150	–	–
		R490	0,3	5	490	570	(min. 420)	–	9	–	–	–	–
		H150			–	–	–	–	–	150	180	–	–
		R560	0,3	2	560	–	(min. 510)	–	–	–	–	–	–
		H175			–	–	–	–	–	175	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn38Pb2 CuZn39Pb0,5	CW608N CW610N	R340	0,3	10	340	420	(max. 240)	33	43	–	–	–	–
		H075			–	–	–	–	–	75	110	–	–
		R400	0,3	10	400	480	(min. 200)	14	23	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R470	0,3	5	470	550	(min. 390)	5	12	–	–	–	–
		H140			–	–	–	–	–	140	170	–	–
		R540	0,3	2	540	–	(min. 490)	–	–	–	–	–	–
		H165			–	–	–	–	–	165	–	–	–
CuZn20Al2As	CW702R	R330	3	15	330	–	(min. 90)	–	30	–	–	–	–
		H070			–	–	–	–	–	70	105	–	–
		R390	3	15	390	–	(min. 240)	–	25	–	–	–	–
		H100			–	–	–	–	–	100	–	–	–

BRONMETAL

Alloys

Material Designation		Composition in % (mass fraction)																Density g/cm³
Symbolic	Numerical	Element	Cu	Al	As	Be	C	Co	Fe	Mn	Ni	P	Pb	S	Si	Sn	Zn	Total other	approx.
CuZn5	CW500L	min.	94,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,9
		max.	96,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn10	CW501L	min.	89,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,8
		max.	91,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn15	CW502L	min.	84,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,8
		max.	86,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn20	CW503L	min.	79,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,7
		max.	81,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn30	CW505L	min.	69,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,5
		max.	71,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn33	CW506L	min.	66,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,5
		max.	68,0	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn36	CW507L	min.	63,5	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	65,5	0,02	–	–	–	–	0,05	–	0,3	–	0,05	–	–	0,1	–	0,1	
CuZn37	CW508L	min.	62,0	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	0,1	–	–	0,1	–	0,1	

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Material Designation		Composition in % (mass fraction)																Density g/cm^3
Symbolic	Numerical	Element	Cu	Al	As	Be	C	Co	Fe	Mn	Ni	P	Pb	S	Si	Sn	Zn	Total other	approx.
CuZn40	CW509L	min.	59,5	–	–	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	61,5	0,05	–	–	–	–	0,2	–	0,3	–	0,3	–	–	0,1	–	0,2	
CuZn35Pb1	CW600N	min.	62,5	–	–	–	–	–	–	–	–	–	0,8	–	–	–	Rest	–	8,5
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	1,6	–	–	0,1	–	0,1	
CuZn37Pb0,5	CW604N	min.	62,0	–	–	–	–	–	–	–	–	–	0,1	–	–	–	Rest	–	8,4
		max.	64,0	0,05	–	–	–	–	0,1	–	0,3	–	0,8	–	–	0,2	–	0,2	
CuZn37Pb2	CW606N	min.	61,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	62,0	0,05	–	–	–	–	0,2	–	0,3	–	2,5	–	–	0,2	–	0,2	
CuZn38Pb2	CW608N	min.	60,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	61,0	0,05	–	–	–	–	0,2	–	0,3	–	2,5	–	–	0,2	–	0,2	
CuZn39Pb0,5	CW610N	min.	69,0	–	–	–	–	–	–	–	–	–	0,2	–	–	–	Rest	–	8,4
		max.	60,5	0,05	–	–	–	–	0,2	–	0,3	–	0,8	–	–	0,2	–	0,2	
CuZn39Pb2	CW612N	min.	59,0	–	–	–	–	–	–	–	–	–	1,6	–	–	–	Rest	–	8,4
		max.	60,0	0,05	–	–	–	–	0,3	–	0,3	–	2,5	–	–	0,3	–	0,2	
CuZn20Al2As	CW702R	min.	76,0	1,8	0,02	–	–	–	–	–	–	–	–	–	–	–	Rest	–	8,4
		max.	79,0	2,3	0,06	–	–	–	0,07	0,1	0,1	0,01	0,05	–	–	–	–	0,3	

Possibility of supplying in: polished surface finish, and/or plasticized finish

BRONMETAL

Technical characteristics

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn5	CW500L	R230	0,2	5	230	280	(max. 130)	36	45	–	–	–	–
		H045			–	–	–	–	–	45	75	–	–
		R270	0,2	5	270	350	(min. 200)	12	19	–	–	–	–
		H075			–	–	–	–	–	75	110	–	–
		R340	0,2	5	340	–	(min. 280)	4	8	–	–	–	–
		H110			–	–	–	–	–	110	–	–	–
CuZn10	CW501L	R240	0,2	5	240	290	(max.140)	36	45	–	–	–	–
		H050			–	–	–	–	–	50	80	–	–
		R280	0,2	5	280	360	(min. 200)	13	20	–	–	–	–
		H080			–	–	–	–	–	80	110	–	–
		R350	0,2	5	350	–	(min. 290)	4	8	–	–	–	–
		H110			–	–	–	–	–	110	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn15	CW502L	R260	0,2	5	260	310	(max. 170)	36	45	–	–	–	–
		H055			–	–	–	–	–	55	85	–	–
		G010	0,2	1	(340)		(190)	(50)	–	–	105	–	0,015
		G020	0,2	2	(300)		(125)	(50)	–	–	85	0,015	0,030
		G035			(290)		(110)	(50)	–	–	75	0,025	0,050
		R300	0,2	5	300	370	(min. 150)	16	25	–	–	–	–
		H085			–	–	–	–	–	85	115	–	–
		R350	0,2	5	350	420	(min. 250)	4	12	–	–	–	–
		H105			–	–	–	–	–	105	135	–	–
		R410	0,2	5	410	–	(min. 360)	–	–	–	–	–	–
		H125			–	–	–	–	–	125	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn20	CW503L	R270	0,2	5	270	320	(max. 150)	38	48	–	–	–	–
		H055			–	–	–	–	–	55	85	–	–
		G010	0,2	1	(340)		(190)	(50)	–	–	105	–	0,015
		G020	0,2	2	(300)		(125)	(50)	–	–	85	0,015	0,030
		G035			(290)		(110	(50)	–	–	75	0,025	0,050
		R320	0,2	5	320	400	(min. 200)	20	28	–	–	–	–
		H085			–	–	–	–	–	85	120	–	–
		R400	0,2	5	400	480	(min. 320)	5	12	–	–	–	–
		H120			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	–	(min. 440)	–	–	–	–	–	–
		H155			–	–	–	–	–	155	–		

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn30	CW505L	R270	0,2	5	270	350	(max. 160)	40	50	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		G075			(310)		(90)	(50)	–	–	70	0,050	0,100
		R350	0,2	5	350	430	(min. 170)	21	33	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R410	0,2	5	410	490	(min. 260)	9	15	–	–	–	–
		H120			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	–	(min. 430)	–	–	–	–	–	–
		H150			–	–	–	–	–	150	–	–	–

Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn33	CW506L	R280	0,2	5	280	380	(max. 170)	40	50	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		R350	0,2	5	350	430	(min. 170)	23	31	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R420	0,2	5	420	500	(min. 300)	6	13	–	–	–	–
		H125			–	–	–	–	–	120	155	–	–
		R500	0,2	2	500	–	(min. 450)	–	–	–	–	–	–
		H155			–	–	–	–	–	155	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn36 CuZn37	CW507L CW508L	R300	0,2	5	300	370	(max. 180)	38	46	–	–	–	–
		H055			–	–	–	–	–	55	90	–	–
		G010	0,2	1	(410)		(210)	(40)	–	–	120	–	0,015
		G020	0,2	2,0	(360)		(150)	(40)	–	–	95	0,015	0,030
		G030			(340)		(130)	(40)	–	–	90	0,020	0,040
		G050			(330)		(110)	(40)	–	–	80	0,035	0,070
		R350	0,2	5	350	440	(min. 170)	19	28	–	–	–	–
		H095			–	–	–	–	–	95	125	–	–
		R410	0,2	5	410	490	(min. 300)	8	12	–	–	–	–
		H125			–	–	–	–	–	120	155	–	–
		R480	0,2	2	480	560	(min. 430)	3	–	–	–	–	–
		150			–	–	–	–	–	150	180	–	–
		R550	0,2	2	550	–	(min. 500)	–	–	–	–	–	–
		H170			–	–	–	–	–	170	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn40	CW509L	R340	0,3	10	340	420	(max. 240)	33	43	–	–	–	–
		H085			–	–	–	–	–	85	115	–	–
		R400	0,3	10	400	480	(min. 200)	15	23	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R470	0,3	5	470	–	(min. 390)	6	12	–	–	–	–
		H140			–	–	–	–	–	140	–	–	–
CuZn35Pb1 CuZn37Pb0,5 CuZn37Pb2	CW600N CW604N CW606N	R290	0,3	5	290	370	(max. 200)	40	50	–	–	–	–
		H060			–	–	–	–	–	60	110	–	–
		R370	0,3	5	370	440	(min. 200)	19	28	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R440	0,3	2	440	540	(min. 370)	5	12	–	–	–	–
		H140			–	–	–	–	–	140	170	–	–
		R540	0,3	2	540	–	(min.490)	–	–	–	–	–	–
		H170			–	–	–	–	–	170	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn39Pb2	CW612N	R360	0,3	5	360	440	(max. 270)	30	40	–	–	–	–
		H090			–	–	–	–	–	90	120	–	–
		R420	0,3	5	420	500	(min. 270)	12	20	–	–	–	–
		H120			–	–	–	–	–	120	150	–	–
		R490	0,3	5	490	570	(min. 420)	–	9	–	–	–	–
		H150			–	–	–	–	–	150	180	–	–
		R560	0,3	2	560	–	(min. 510)	–	–	–	–	–	–
		H175			–	–	–	–	–	175	–	–	–

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Designations			Nominal thickness mm		Tensile Strength R_m N/mm^2		Proof stress of0,2% $R_{p0.2}$ N/mm^2	Elongation		Hardness HV		Grain size mm	
Material		Metallurgical State						A_{50mm} For thicknesses to 2.5mm included % min.	A For thicknesses Over 2.5mm % min.				
Symbolic	Numerical		from	up to and including	min.	max.				min.	max.	min.	max.
CuZn38Pb2 CuZn39Pb0,5	CW608N CW610N	R340	0,3	10	340	420	(max. 240)	33	43	–	–	–	–
		H075			–	–	–	–	–	75	110	–	–
		R400	0,3	10	400	480	(min. 200)	14	23	–	–	–	–
		H110			–	–	–	–	–	110	140	–	–
		R470	0,3	5	470	550	(min. 390)	5	12	–	–	–	–
		H140			–	–	–	–	–	140	170	–	–
		R540	0,3	2	540	–	(min. 490)	–	–	–	–	–	–
		H165			–	–	–	–	–	165	–	–	–
CuZn20Al2As	CW702R	R330	3	15	330	–	(min. 90)	–	30	–	–	–	–
		H070			–	–	–	–	–	70	105	–	–
		R390	3	15	390	–	(min. 240)	–	25	–	–	–	–
		H100			–	–	–	–	–	100	–	–	–

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Tolerances

TOLERANCES ON THICKNESS OF HOT-ROLLED PRODUCTS

Nominal thickness		Thickness tolerances for nominal widths						
		Up to and including 700		Greater than 700, up to and inc. 1000		Greater than 1000, up to and inc. 1500		Greater than 1500
greather than	up to and including	1)	2)	1)	2)	1)	2)	
–	2,5	By agreement		By agreement		By agreement		By agreement
2,5	5,0	± 0,25	± 0,30	± 0,30	± 0,35	± 0,35	± 0,45	
5,0	7,5	± 0,35	± 0,45	± 0,40	± 0,50	± 0,45	± 0,55	
7,5	10	± 0,45	± 0,60	± 0,50	± 0,65	± 0,55	± 0,75	
10	15	± 0,75	± 0,95	± 0,80	± 1,00	± 0,90	± 1,10	
15	25	± 0,95	± 1,20	± 1,05	± 1,30	± 1,30	± 1,60	
25	50	± 1,30	± 1,60	± 1,40	± 1,75	± 1,50	± 1,90	
50	–	± 1,50	± 1,90	± 1,65	± 2,05	± 1,80	± 2,20	
1) For all materials, except CuAl8Fe3 (CW303G), CuNi10Fe1Mn (CW352H), CuNi30Mn1Fe (CW354H) y CuZn20Al2As (CW702R).								
2) For all alloys CuAl8Fe3 (CW303G), CuNi10Fe1Mn (CW352H), CuNi30Mn1Fe (CW354H) y CuZn20Al2As (CW702R).								

TOLERANCES ON THICKNESS OF COLD ROLLED PRODUCTS

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Nominal thickness		Thickness tolerances for nominal widths[a]			
greather than	up to and including	Up to and including 350	greather than 350 Up to and including 700	Greater than 700, up to and inc. 1000	Greater than 1000, up to and inc. 1250
0.1[b]	0,2	± 0,018	–	–	–
0,2	0,3	± 0,022	± 0,03	± 0,04	–
0,3	0,4	± 0,025	± 0,04	± 0,05	± 0,07
0,4	0,5	± 0,03	± 0,05	± 0,06	± 0,08
0,5	0,8	± 0,04	± 0,06	± 0,07	± 0,09
0,8	1,2	± 0,05	± 0,07	± 0,09	± 0,10
1,2	1,8	± 0,06	± 0,08	± 0,10	± 0,11
1,8	2,5	± 0,07	± 0,09	± 0,11	± 0,13
2,5	3,2	± 0,08	± 0,10	± 0,13	± 0,17
3,2	4,0	± 0,10	± 0,12	± 0,15	± 0,20
4,0	5,0	± 0,12	± 0,14	± 0,17	± 0,23
5,0	6,0	± 0,14	± 0,16	± 0,20	± 0,26
6,0	7,0	± 0,16	± 0,19	± 0,23	± 0,29
7,0	8,0	± 0,18	± 0,22	± 0,26	± 0,32
8,0	9,0	± 0,20	± 0,25	± 0,29	± 0,35
9,0	10,0	± 0,22	± 0,28	± 0,32	± 0,38

[a] For all alloys CuAl8Fe3 (CW303G), CuNi10Fe1Mn (CW352H), CuNi30Mn1Fe (CW354H) y CuZn20Al2As (CW702R), tolerances on thickness must be multiplied by 1.25 and the redult rounded up to 0.01mm

[b] includes 0.1.

Nominal thickness		Thickness tolerances for nominal widths[a]			
greather than	up to and including	Up to and including 350	greather than 350 Up to and including 700	Greater than 700, up to and inc. 1000	Greater than 1000, up to and inc. 1250
NOTA – For thicknesses greater than 10 mm, tolerances are those indicated in Norm EN 1653.					