



BRONMETAL

Brass Zn

Product format:

Wire

Technical characteristics:

Brass wire roll for cold stamping

COOPER-ZINC

Designation		Nominal Diameter			Tensile Strength		Yield limit at 0.2%	Enlogation			Hardness		Previous designation of metallurgical state (only for informtaive purposes)	
Material	Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV			
					N/mm ²		N/mm ²	%	%	%				
Symbolic	Numerical				mín.	máx.	approx.	mín.	mín.	mín.	mín.	máx.		
CuZn10	CW501L	M	All measurements			Rough manufacture								
		R290	0,1	-	0,5	290	390	(140)	(25)	-	-	-	-	
		R280	-	0,5	1,5	280	380	(130)	30	-	-	-	-	
		R270	-	1,5	4,0	270	370	(130)	35	-	-	-	-	
		H070	1,5	-	4,0	-	-	-	-	-	-	70	120	
		R240	-	4,0	20,0	240	340	(120)	-	35	40	-	-	
		R380	0,5	-	1,5	380	480	(260)	(8)	-	-	-	-	
		R350	-	1,5	4,0	350	450	(240)	(12)	-	-	-	-	
		H115	1,5	-	4,0	-	-	-	-	-	-	115	145	
		R330	-	4,0	20,0	330	430	(230)	-	(15)	(20)	-	-	
		H105	-	4,0	20,0	-	-	-	-	-	-	105	135	
		R470	0,5	-	1,5	470	570	(390)	-	-	-	-	-	
		R440	-	1,5	4,0	440	540	(370)	-	-	-	-	-	
		H135	1,5	-	4,0	-	-	-	-	-	-	135	165	
		R410	-	4,0	20,0	410	510	(350)	-	-	-	-	-	
		H125	-	4,0	20,0	-	-	-	-	-	-	125	155	
		R570	0,5	-	1,5	570	-	(560)	-	-	-	-	-	
		R530	-	1,5	4,0	530	-	(520)	-	-	-	-	-	
		H155	1,5	-	4,0	-	-	-	-	-	-	155	-	
		CuZn15 CuZn20	CW502L CW503L	M	All measurements			Rough manufacture						
R310	0,1			-	0,5	310	410	(140)	(25)	-	-	-	-	
R300	-			0,5	1,5	300	400	(140)	25	-	-	-	-	
R290	-			1,5	4,0	290	390	(140)	30	-	-	-	-	
H070	1,5			-	4,0	-	-	-	-	-	-	70	125	
R260	-			4,0	20,0	260	360	(120)	-	40	45	-	-	
H065	-			4,0	20,0	-	-	-	-	-	-	65	120	

Designation		Nominal Diameter			Tensile Strength		Yield limit at 0.2%	Enlogation			Hardness		Previous designation of metallurgical state (only for informtaive purposes)				
Material		Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV					
Symbolic	Numerical					N/mm ²		N/mm ²	%	%	%	mín.		mín.	mín.	mín.	mín.
						mín.	máx.	aprox.	mín.	mín.	mín.						
		M	All measurements			Rough manufacture											
CuZn15 CuZn20	CW502L CW503L	R400	0,5	-	1,5	400	500	(270)	(10)	-	-	-	-	1/4 hard			
		R370	-	1,5	4,0	370	470	(250)	(14)	-	-	-	-				
		H120	1,5	-	4,0	-	-	-	-	-	-	120	150				
		R360	-	4,0	20,0	360	460	(250)	-	(18)	(20)	-	-				
		H115	-	4,0	20,0	-	-	-	-	-	-	115	145				
		R480	0,5	-	1,5	480	580	(400)	-	-	-	-	-	1/2 hard			
		R450	-	1,5	4,0	450	550	(380)	(3)	-	-	-	-				
		H140	1,5	-	4,0	-	-	-	-	-	-	140	170				
		R430	-	4,0	20,0	430	530	(360)	(6)	-	-	-	-				
		H135	-	4,0	20,0	-	-	-	-	-	-	135	165				
	R600	0,1	-	0,5	600	-	(590)	-	-	-	-	-	hard				
	R580	-	0,5	1,5	580	-	(570)	-	-	-	-	-					
	R540	-	1,5	4,0	540	-	(530)	-	-	-	-	-					
	H165	1,5	-	4,0	-	-	-	-	-	-	165	-					

NOTE 1 - 1 N/mm² equivalent a 1 Mpa.
NOTE 2 - The numbers in brackets are not requirements for this regulation, they are given for informative purposes.

Designation		Nominal Diameter			Tensile Strength		Yield limit at 0.2%	Enlogation			Hardness		Previous designation of metallurgical state (only for informtaive purposes)	
Material		Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV		
Symbolic	Numerical					N/mm ²		N/mm ²		%	%	%		
		mín.	máx.	approx.		mín.	mín.	mín.	mín.	máx.				
CuZn30	CW505L	M	All measurements			Rough manufacture								
		R350	0,1	-	0,5	350	450	(160)	(30)	-	-	-	-	annealed
		R340	-	0,5	1,5	340	440	(150)	35	-	-	-	-	
		R310	-	1,5	4,0	310	410	(140)	40	-	-	-	-	
		R300	-	4,0	20,0	300	400	(130)	-	45	50	-	-	
		H065	1,5	-	20,0	-	-	-	-	-	-	65	115	
		R430	0,1	-	0,5	430	530	(240)	(10)	-	-	-	-	1/8 hard
		R410	-	0,5	1,5	410	510	(230)	(14)	-	-	-	-	
		R380	-	1,5	4,0	380	480	(220)	(18)	-	-	-	-	
		H095	1,5	-	4,0	-	-	-	-	-	-	95	135	
		R360	-	4,0	20,0	360	460	(210)	-	(22)	(25)	-	-	
		H085	-	4,0	20,0	-	-	-	-	-	-	85	130	
		R520	0,1	-	0,5	520	620	(340)	-	-	-	-	-	1/4 hard
		R500	-	0,5	1,5	500	600	(330)	-	-	-	-	-	
		R460	-	1,5	4,0	460	560	(310)	(7)	-	-	-	-	
		H125	1,5	-	4,0	-	-	-	-	-	-	125	160	
		R440	-	4,0	8,0	440	540	(290)	-	(10)	-	-	-	
		H120	-	4,0	8,0	-	-	-	-	-	-	120	155	
		R610	0,1	-	0,5	610	710	(500)	-	-	-	-	-	1/2 hard
		R590	-	0,5	1,5	590	690	(480)	-	-	-	-	-	
		R540	-	1,5	4,0	540	640	(440)	-	-	-	-	-	
		H150	1,5	-	4,0	-	-	-	-	-	-	150	180	
		R530	-	4,0	8,0	530	630	(440)	-	-	-	-	-	
		H145	-	4,0	8,0	-	-	-	-	-	-	145	175	
		R700	0,1	-	0,5	700	800	(680)	-	-	-	-	-	hard
		R670	-	0,5	1,5	670	770	(650)	-	-	-	-	-	
		R620	-	1,5	4,0	620	720	(600)	-	-	-	-	-	
		H170	1,5	-	4,0	-	-	-	-	-	-	170	200	

Designation		Nominal Diameter			Tensile Strength		Yield limit at 0.2%	Enlogation			Hardness		Previous designation of metallurgical state (only for informtaive purposes)	
Material		Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV		
Symbolic	Numerical					N/mm ²		N/mm ²	%	%	%			
						mín.	máx.	approx.	mín.	mín.	mín.	mín.		máx.
CuZn30	CW505L													Spring quality
		R800	0,1	-	0,5	800	-	(810)	-	-	-	-	-	
		R750	-	0,5	1,5	750	-	(760)	-	-	-	-	-	
		R700	-	1,5	4,0	700	-	(710)	-	-	-	-	-	
		H195	1,5	-	4,0	-	-	-	-	-	-	195	-	
CuZn36 CuZn37	CW507L CW508L	M	All measurements			Rough manufacture								annealed
		R360	0,1	-	0,5	360	450	(160)	(30)	-	-	-	-	
		R330	-	0,5	1,5	330	420	(150)	33	-	-	-	-	
		R300	-	1,5	4,0	300	380	(140)	35	-	-	-	-	
		H070	1,5	-	4,0	-	-	-	-	-	-	70	105	
		R280	-	4,0	20,0	280	370	(130)	-	40	45	-	-	
		H065	-	4,0	20,0	-	-	-	-	-	-	60	100	



Designation		Nominal Diameter			Tensile Strength		Yield limit at 0.2%	Enlogation			Hardness		Previous designation of metallurgical state (only for informtaive purposes)	
Material	Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV			
					N/mm ²		N/mm ²	%	%	%				
Symbolic	numerical				mín.	máx.	approx.	mín.	mín.	mín.	mín.	máx.		
CuZn36 CuZn37	CW507L CW508L	R420	0,5	-	1,5	420	510	(280)	(12)	-	-	-	-	1/8 hard
		R380	-	1,5	4,0	380	480	(260)	(16)	-	-	-	-	
		H105	1,5	-	4,0	-	-	-	-	-	-	105	140	
		R370	-	4,0	20,0	370	470	(250)	-	(20)	(25)	-	-	
		H095	-	4,0	20,0	-	-	-	-	-	-	95	135	
		R510	0,5	-	1,5	510	610	(420)	-	-	-	-	-	1/4 hard
		R470	-	1,5	4,0	470	570	(390)	(5)	-	-	-	-	
		H130	1,5	-	4,0	-	-	-	-	-	-	130	160	
		R460	-	4,0	8,0	460	560	(380)	-	(8)	-	-	-	
		H135	-	4,0	8,0	-	-	-	-	-	-	135	165	
		R610	0,5	-	1,5	610	750	(610)	-	-	-	-	-	1/2 hard / hard
		R560	-	1,5	4,0	560	700	(570)	-	-	-	-	-	
		H160	1,5	-	4,0	-	-	-	-	-	-	160	190	
		R550	-	4,0	8,0	550	680	(550)	-	-	-	-	-	
		H155	-	4,0	8,0	-	-	-	-	-	-	155	185	
		R800	0,1	-	0,5	800	-	(810)	-	-	-	-	-	Spring quality
		R750	-	0,5	1,5	750	-	(760)	-	-	-	-	-	
		R700	-	1,5	4,0	700	-	(710)	-	-	-	-	-	
		H190	1,5	-	4,0	-	-	-	-	-	-	190	-	

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Material		Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV		
Symbolic	Numerical					N/mm ²		N/mm ²	%	%	%			
		mín.	máx.	approx.	mín.	mín.	mín.	mín.	máx.					
CuZn35Pb1 CuZn35Pb2	CW600N CW601N	M	All measurements			Rough manufacture								
		R380	0,5	-	1,5	380	-	(200)	-	-	-	-	-	1/2 hard
		R380	-	1,5	8,0	380	-	(200)	18	20	-	-	-	
		H120	1,5	-	8,0	-	-	-	-	-	-	120	150	
		R370	-	8,0	20,0	370	-	(200)	-	-	25	-	-	
		H110	-	8,0	20,0	-	-	-	-	-	-	110	140	
		R450	0,5	-	1,5	450	-	(320)	-	-	-	-	-	hard
		R450	-	1,5	4,0	450	-	(320)	6	-	-	-	-	
		H155	1,5	-	4,0	-	-	-	-	-	-	155	185	
		R450	-	4,0	8,0	450	-	(320)	-	10	-	-	-	
		H145	-	4,0	8,0	-	-	-	-	-	-	145	175	
		R440	-	8,0	14,0	440	-	(320)	-	-	15	-	-	
		H140	-	8,0	14,0	-	-	-	-	-	-	140	170	
		R540	0,5	-	4,0	540	-	(480)	-	-	-	-	-	Spring quality
H165	1,5	-	4,0	-	-	-	-	-	-	165	-			
CuZn36Pb3 CuZn37Pb2	CW603N CW606N	M	All measurements			Rough manufacture								
		R380	0,5	-	1,5	380	-	(180)	-	-	-	-	-	1/4 hard
		R370	-	1,5	4,0	370	-	(180)	15	-	-	-	-	
		H100	1,5	-	4,0	-	-	-	-	-	-	100	130	
		R360	-	4,0	20,0	360	-	(180)	-	15	20	-	-	
		H090	-	4,0	20,0	-	-	-	-	-	-	90	125	
		R440	0,5	-	1,5	440	-	(300)	-	-	-	-	-	1/2 hard
		R420	-	1,5	4,0	420	-	(280)	6	-	-	-	-	
		H120	1,5	-	4,0	-	-	-	-	-	-	120	150	
		R410	-	4,0	8,0	410	-	(280)	-	10	-	-	-	
		H115	-	4,0	8,0	-	-	-	-	-	-	115	145	
R400	-	8,0	20,0	400	-	(280)	-	-	15	-	-			
H110	-	8,0	20,0	-	-	-	-	-	-	110	140			

Designation		Nominal Diameter			Tensile Strength		Yield limit at 0.2%	Enlogation			Hardness		Previous designation of metallurgical state (only for informtaive purposes)	
Material		Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV		
symbolic	numerical					N/mm ²		N/mm ²	%	%	%			
		mín.	máx.	approx.	mín.	mín.	mín.	mín.	máx.					
		M	All measurements			Rough manufacture								
CuZn36Pb1 CuZn37Pb2	CW603N CW606N	R500	1,5	-	4,0	500	-	(380)	(3)	-	-	-	-	hard
		H140	1,5	-	4,0	-	-	-	-	-	-	140	170	
		R490	-	4,0	8,0	490	-	(360)	-	6	-	-	-	
		R480	-	8,0	14,0	480	-	(360)	-	-	8	-	-	
		H130	-	4,0	14,0	-	-	-	-	-	-	130	160	
		R580	1,5	-	4,0	580	-	(520)	-	-	-	-	Spring quality	
		H155	1,5	-	4,0	-	-	-	-	-	155	-		

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Material		Metellurgical state	From	Greater than	Up to and including	R _m		R _{p0.2}	A _{100mm}	A _{11.3}	A	HV		
symbolic	numerical					N/mm ²		N/mm ²	%	%	%			
		mín.	máx.	approx.	mín.	mín.	mín.	mín.	máx.					
CuZn38Pb2 CuZn39Pb0,5 CuZn39Pb2	CW608N CW610N CW612N	M	All measurements			Rough manufacture								
		R400	0,5	-	1,5	400	-	(200)	-	-	-	-	-	1/4 hard
		R400	-	1,5	4,0	400	-	(200)	10	-	-	-	-	
		H110	1,5	-	4,0	-	-	-	-	-	-	110	140	
		R390	-	4,0	8,0	390	-	(180)	-	15	-	-	-	
		R380	-	8,0	20,0	380	-	(180)	-	-	20	-	-	
		H100	-	4,0	20,0	-	-	-	-	-	-	100	130	
		R450	0,5	-	1,5	450	-	(300)	-	-	-	-	-	1/2 hard
		R440	-	1,5	4,0	440	-	(300)	8	-	-	-	-	
		H130	1,5	-	4,0	-	-	-	-	-	-	130	160	
		R430	-	4,0	8,0	430	-	(300)	-	10	-	-	-	
		R420	-	8,0	20,0	420	-	(300)	-	-	15	-	-	
		H120	-	4,0	20,0	-	-	-	-	-	-	120	155	
		R500	0,5	-	1,5	500	-	(400)	-	-	-	-	-	hard
		R500	-	1,5	4,0	500	-	(400)	4	-	-	-	-	
		H150	1,5	-	4,0	-	-	-	-	-	-	150	180	
		R490	-	4,0	8,0	490	-	(400)	-	5	-	-	-	
		R480	-	8,0	14,0	480	-	(400)	-	-	8	-	-	
		H140	-	4,0	14,0	-	-	-	-	-	-	140	170	
		R570	1,5	-	4,0	570	-	(520)	-	-	-	-	-	Spring quality
		H165	1,5	-	4,0	-	-	-	-	-	-	165	-	



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					N/mm ²		N/mm ²	%	%	%					
symbolic	numerical				mín.	máx.	approx.	mín.	mín.	mín.	mín.	máx.			
CuZn38Pb2 CuZn39Pb0,5 CuZn39Pb2	CW608N CW610N CW612N	M	All measurements			Rough manufacture								1/2 hard	
		R450	0,5	-	1,5	450	-	(200)	-	-	-	-	-		
		R430	-	1,5	4,0	430	-	(200)	6	-	-	-	-		
		H130	1,5	-	4,0	-	-	-	-	-	-	130	165		
		R420	-	4,0	8,0	420	-	(200)	-	8	-	-	-		
		H120	-	4,0	8,0	-	-	-	-	-	-	120	155		
		R410	-	8,0	14,0	410	-	(200)	-	-	10	-	-		
		R400	-	14,0	20,0	400	-	(200)	-	-	10	-	-		
		H110	-	8,0	20,0	-	-	-	-	-	-	110	145		
		R520	0,5	-	1,5	520	-	(400)	-	-	-	-	-		
		R510	-	1,5	4,0	510	-	(400)	(4)	-	-	-	-		
		H155	1,5	-	4,0	-	-	-	-	-	-	155	185		
		R500	-	4,0	8,0	500	-	(390)	-	6	-	-	-		
		R490	-	8,0	14,0	490	-	(390)	-	-	8	-	-		
		H145	-	4,0	14,0	-	-	-	-	-	-	145	175		
		R570	1,5	-	4,0	570	-	(520)	-	-	-	-	-		
		H170	1,5	-	4,0	-	-	-	-	-	-	170	-		
															Spring quality

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