LAMINERIES MATTHEY
NOTZ group advanced metal solutions

Brass

CuZn30

		DIN	EN Nr.	UNS (ASTM)	AISI	LMSA
Designation	**CuZn30**	2.0265	CW505L	C26000	-	**B206**

Chemical composition

Zn	Cu	Ni	Pb	Fe	Sn	Al	Others
Balance	69.0 - 71.0	0.3 max.	0.05 max.	0.05 max.	0.1 max.	0.02 max.	0.1 max.

Values (Weight %). In order to achieve maximum homogeneity and consistent quality, the actual manufacturing tolerances are tighter and more precise than the composition indicated.

Main technical properties and features

CuZn30 is a brass with a homogeneous single-phase α structure, a solid solution of Zn in copper with a face-centered cubic structure. The α phase is highly cold-workable. CuZn30 brass combines exceptional cold workability with relatively high mechanical strength and hardness. Among Cu and Zn alloys, there are α brass grades that contain more Zn and can therefore achieve higher mechanical strengths and hardnesses, but with lower cold deformability. Because of its excellent deep-drawing properties, CuZn30 is commonly referred to as “deep-draw” or “cartridge” brass.

CuZn30 brass has good corrosion resistance to water, water steam and various saline solutions. CuZn30 brass is susceptible to stress cracking when in contact with ammonia salts, amine, among others. The risk of stress corrosion can be reduced by soft annealing or thermal relaxation of finished parts. CuZn30 alloy is sensitive to acids and hydrated sulfur compounds. This alloy can be easily brazed. Welding must be carried out with attention, the alloy low melting temperature of 910 ºC can cause evaporation, and consequently affect the quality of the weld bead.

Typical uses

The CuZn30 is used in many different applications: needles, dials, etc. for the watch industry, chemical etching, eyelets, rivets, caps, deep drawing parts, etc.

Typical manufacturing range

		Thickness (mm)	Width (mm)	Length (mm)
Rolled products	Strip in coils [1]	0.010 - 1.000	1.5 - 200.0	-
	Strip as sheets [1]	0.010 - 1.000	10.0 - 200.0	300 - 3000

[1] Not all our production possibilities are presented here. Other dimensions or product forms available upon request. Some combinations of thicknesses and widths are not possible.

Mechanical properties of strips

Temper		R_m (N/mm²)	$Rp_{0.2}$ (N/mm²)	A_{50mm} (%)	Hardness HV
R280	soft annealed	280 - 380	-	40 min.	55 - 95
R350	¼ hard	350 - 430	-	23 min.	95 - 125
R420	½ hard	420 - 500	-	6 min.	125 - 155
R500	hard	500 - 570	-	4 min.	150 - 190
R550	extra hard	540 - 640	-	2 min.	170 - 210
R630	spring	630 min.	-	-	190 min.

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Physical properties

Modulus of elasticity	kN/mm²	110 (soft annealed); 99 to 115 (work hardened)
Density	g/cm³	8.55
Melting point / Melting range	°C	910 - 965
Linear dilatation coefficient from 20 to 70ºC	10^{-6}·/ ºC	21
Thermal conductivity at 20°C	W/m °K	120
Specific heat at 20°C	J/(kg. K)	377
Electrical resistivity at 20 ºC	μΩcm	6.2 (soft annealed); 7.7(work hardened)
Electrical conductivity at 20 ºC	MS/m	16
Electrical conductivity at 20 ºC	% IACS	28
Magnetic properties		Nonmagnetic

Tolerances (strip and foil)

Thickness

The table shown is an outline of our typical thickness tolerances available. They are tighter than industry standards.

Our "LMSA Precision" and "LMSA Extreme" tolerances are available upon request.

Thickness (mm)		EN Standard		Lamineries MATTHEY		
≥	<	10140 Precision	10258 Precision	LMSA Standard	LMSA Precision	LMSA Extreme
-	0.025	-	-	-	-	± 0.001
0.025	0.050	-	-	± 0.003	± 0.002	± 0.0015
0.050	0.065	-	± 0.003	± 0.003	± 0.0025	± 0.002
0.065	0.100	-	± 0.004	± 0.004	± 0.0035	± 0.003
0.100	0.125	± 0.005	± 0.006	± 0.005	± 0.004	± 0.003
0.125	0.150	± 0.005	± 0.006	± 0.005	± 0.005	± 0.004
0.150	0.250	± 0.010	± 0.008	± 0.008	± 0.006	± 0.004
0.250	0.300	± 0.010	± 0.009	± 0.009	± 0.007	± 0.005
0.300	0.400	± 0.010	± 0.010	± 0.010	± 0.007	± 0.005
0.400	0.500	± 0.015	± 0.012	± 0.012	± 0.008	± 0.006
0.500	0.600	± 0.015	± 0.014	± 0.014	± 0.010	± 0.007
0.600	0.800	± 0.015	± 0.015	± 0.015	± 0.010	± 0.007
0.800	1.000	± 0.015	± 0.018	± 0.018	± 0.012	± 0.009
1.000	1.200	± 0.020	± 0.020	± 0.020	± 0.015	± 0.012
1.200	1.250	± 0.020	± 0.020	± 0.020	± 0.015	± 0.012
1.250	1.500	± 0.020	± 0.020	± 0.020	± 0.015	± 0.014

Width

Our width tolerances "Standard" is +0.2, -0.0 (or ± 0.1 mm upon request). They are available for slit widths < 125 mm and thicknesses < 1.00 mm. Special tolerances upon request.

Camber

Our tolerance "LMSA Standard" respects the EN Standard 1654 (Length of measurement 1000 mm).
Other tolerances upon request.

Width (mm)		Camber max. (mm/m)			
		LMSA Standard		LMSA Extreme	
>	≤	≤ 0.5 mm	> 0.5 mm	≤ 0.5 mm	> 0.5 mm
3	6	12	-	6	-
6	10	8	10	4	5
10	20	4	6	2	3
20	250	2	3	1	1.5

Surface

Special surface qualities upon request

Flatness

Special requirement on the longitudinal or transversal flatness upon request

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