Datasheet:

EN CuZn37 / CW508L Classic Brass Tubes

Alumeco ApS
16-01-2025

Internal alloy name:	**CW508L**
Metal:	**Brass**
Chemical Symbol:	**CuZn37**
EN:	**EN CuZn37**
UNS:	**C27200**
SIS:	**SS 5150**
GB:	**-**
JIS:	**C2720**
Also known as:	**MS 63 / Messing 63 / 1063**
Alloy type:	**Classic Brass**

Main usage:

- Electrical components
- Industrial applications
- Faucets and other bathroom appliances
- Fasteners, clamps and switch contacts
- Metals goods – signs, lamps, pipes, and hoses
- Instruments

Main properties:

- Great formability properties
- Good corrosion resistance against atmospheric and certain fluids
- Good welding and soldering properties

Important norms and literature:

General Standards
EN 1652:1998: Copper and copper alloys – Plate, sheet, strip and circles for general purposes

Geometric Tolerance:
EN 12449:1999: Copper and copper alloys – Seamless, round tubes for general purposes

Chemical composition in %: EN 1652:1998

Cu	Al	Fe	Ni	Pb	Sn	Zn	Others
62,0 – 64,0	Max. 0,05	Max. 0,1	Max. 0,3	Max. 0,1	Max. 01	Remaining	Max. 0,1

Mechanical properties: EN 1652:1998

Material Condition	Thickness range mm	Rm MPa (Min. – Max.)	$Rp_{0,2}$ MPa	A_{50mm} for thickness up to 2,5 mm %	A for thickness up to 2,5 mm %	Hardness HBW	Hardness HV
R350	0,2 – 5	350 – 440	Min. 170	19	28	-	-
R410	0,2 – 5	410 – 490	Min. 300	8	12	-	-
R480	0,2 – 2	480 – 560	Min. 430	3	-	-	-
R550	0,2 – 2	Min. 550	Min. 500	-	-	-	-

*** Information values only;**

Physical properties:

Density (20 °C) g/cm³	Solidification range °C	Electrical conductivity %IACS	Thermal conductivity (20 °C) W/m K	Thermal expansion (20 - 300 °C) µm m^{-1} K^{-1}	Annealing temperature °C	E – modulus (20 °C) N / mm²
8,44	916	26	120	20,4	450 - 650	110000

Properties and information's (3 Excellent; 2 Good; 1 Poor/not recommendable)

Machinability (Zerspanbarkeitsindex): 35*
*(CuZn39Pb3 = 100)

Forming Methods:

Hot Formability:	2
Cold Formability:	3

Corrosion resistance:

Atmosphere:	2
Waters and alkaline:	2
Acids, Ammonia, Seawater etc.:	1

Joining Methods:

Soldering:	3
Brazing:	3
Oxy-acetylene welding:	1
Gas-shielded arc welding:	2
TIG welding:	1-2
MIG welding:	1-2
Gluing/adhesion:	2

Surface Treatment:

Polishing:

Mechanical:	3
Electrolytic/chemical:	2
Galvanizing:	3
Hot Dipping:	3

Tolerances for Tubes of CW508L

Dimensions: EN 12449:1999*
Tolerances on diameter

Nominal diameter *d* (mm)	Tolerances on nominal diameter (mm)	
	Applicable to mean diameter	Applicable to any diameter including deviation from circular form for straight lengths
3 ≤ d ≤ 10	± 0,06	± 0,12
10 < d ≤ 20	± 0,08	± 0,16
20 ≤ d ≤ 30	± 0,12	± 0,24
30 ≤ d ≤ 50	± 0,15	± 0,30
50 ≤ d ≤ 100	± 0,20	± 0,50
100 ≤ d ≤ 200	± 0,50	± 1,00
200 ≤ d ≤ 300	± 0,75	± 1,50
300 ≤ d ≤ 450	± 1,00	± 2,00

* Values are referred from Table 16 of EN 12449:1999

Dimensions: EN 12449:1999*
Tolerances on wall thickness

Nominal outside diameter D (mm)	Tolerances on nominal wall thickness *t* (mm) %				
	0,3 ≤ *t* ≤ 1	1 < *t* ≤ 3	3 < *t* ≤ 6	6 < *t* ≤ 10	10 < *t*
3 ≤ D ≤ 40	± 15	± 13	± 11	± 10	-
40 < D ≤ 120	± 15	± 13	± 12	± 11	± 10
120 ≤ D ≤ 250	-	± 13	± 13	± 12	± 11
250 ≤ D ≤ 450	-	-	± 15	± 15	± 15

* Values are referred from Table 17 of EN 12449:1999

Dimensions: EN 12449:1999*
Tolerances on fixed lengths, tubes in straight lengths

Nominal outside diameter D (mm)	Tolerance on fixed length *l* (mm)			
	l ≤ 250	250 < *l* ≤ 1000	1000 < *l* ≤ 4000	4000 < *l*
3 ≤ D ≤ 25	+ 1 0	+ 3 0	+ 5 0	By agreement
25 < D ≤ 100	+ 2 0	+ 5 0	+ 7 0	
100 < D ≤ 450	+ 3 0	+ 5 0	+ 10 0	

* Values are referred from Table 18 of EN 12449:1999

Dimensions: EN 12449:1999*
Tolerances on fixed lengths, tube in coils (not level wound)

Specified length L (m)	Tolerance %
L ≤ 50	+ 2 0
50 < *L* ≤ 100	+ 3 0
100 < *L*	+ 5 0

* Values are referred from Table 19 of EN 12449:1999

Dimensions: EN 12449:1999*
Tolerances on diameter including deviation from circular form, tube in coils

Nominal outside diameter *D* (mm)	Tolerances on nominal diameter including deviation from circular form	Applicable for coil inside diameter min.
3 ≤ D ≤ 6	± 0,30	400
6 < D ≤ 10	± 0,50	600
10 ≤ D ≤ 20	± 0,70	800
20 ≤ D ≤ 30	± 0,90	1000

* Values are referred from Table 20 of EN 12449:1999

Dimensions: EN 12449:1999* **Tolerances on straightness**		
Ratio of	**Depth of arc (see Figure 1)**	
	h_1 in any length l_1 of 1000 mm max.	h_2 in any length l_2 of 400 mm max.
r ≤ 5	2	0,8
5 < r ≤ 10	3	1,2
10 < r ≤ 20	4	1,6
20 < r ≤ 40	5	2,0
40 < r	6	2,5

* Values are referred from Table 21 of EN 12449:1999

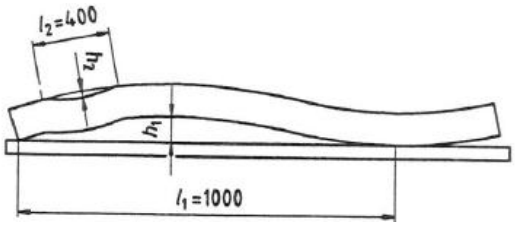

Figure 1 - Measurement of straightness from EN 12449:1999

Dimensions: EN 12449:1999* **Sampling rate**	
Mass per unit length kg/m	**Size of inspection lot for one test sample** kg
$\bar{\lambda}_m$ ≤ 0,25	≤ 500
0,25 < $\bar{\lambda}_m$ ≤ 5	≤ 1000
5 < $\bar{\lambda}_m$	≤ 2500

* Values are referred from Table 22 of EN 12449:1999