

Datasheet: EN CuZn37 / CW508L Classic Brass Profiles, Bars & Rods for general purposes Alumeco ApS 12-05-2025				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 and Industrial applications Faucets and other bathroom appliances Fasteners, clamps and switch contacts Metals goods – signs, lamps, instruments, pipes, and hoses				Important norms and literature: General Standards EN 12163:2024: Copper and copper alloys – Rod for general purposes Geometric Tolerance EN 12163:2024: Copper and copper alloys – Rod for general purposes EN 12165:2024: Copper and copper alloys – Wrought and unwrought forging stock EN 12167:2016: Copper and copper alloys – Profiles and bars for general purposes					
Main properties: Great formability properties Good corrosion resistance against atmospheric and certain fluids Good welding and soldering properties									
Chemical composition in %: EN 12163:2024									
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. 0,1	Remaining	Max. 0,1	
Mechanical properties: EN 12163/12167									
Material Condition	Diameter / Bar thickness mm	Width across-flats mm	Tensile Strength R _m MPa Min.	0,2% Proof Strength R _{p0,2} MPa	Elongation % Min.			Hardness HBW	Tolerance Class
					A _{100mm}	A _{11,3}	A		
≤ 80 mm Rods: EN 12163:2024									
R290	4 – 80	4 – 80	290	Max. 230	-	40	45	-	B
H070	4 – 80	4 – 80	-	-	-	-	-	70 – 110	
R370	4 – 40	4 – 35	370	Min. 240	-	12	14	-	
H105	4 – 40	4 – 35	-	-	-	-	-	105 – 145	
R460	4 – 8	4 – 6	460	Min. 330	-	6	8	-	
H140	4 – 8	4 – 6	-	-	-	-	-	Min. 140	
> 80 mm Rods: EN 12165:2024									
M	80 < D	-	-	-	-	-	-	-	A
Bars and Profiles: EN 12167:2016									
R290	3 – 20	-	290	Max. 230	30	40	45	-	B
H050	3 – 20	-	-	-	-	-	-	50 – 100	
R370	3 – 10	-	370	Min. 240	10	12	14	-	
H085	3 – 10	-	-	-	-	-	-	85 – 130	
R460	3 – 4	-	460	Min. 330	4	6	-	-	
H105	3 – 4	-	-	-	-	-	-	105 - 145	
* 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 Bars of CW508L (Rods below)

Dimensions: EN 12167:2016*

Tolerances on width and thickness of bar

Nominal thickness t (mm)	Tolerance on width	Tolerance on thickness for range of thickness (mm)					
		3 < t ≤ 6	6 < t ≤ 10	10 < t ≤ 18	18 < t ≤ 30	30 < t ≤ 50	50 < t ≤ 60
Class A tolerance							
3 ≤ t ≤ 18	± 0,27	± 0,18	± 0,22	± 0,27	-	-	-
18 < t ≤ 30	± 0,33	± 0,18	± 0,22	± 0,27	± 0,33	-	-
30 < t ≤ 50	± 0,62	± 0,22	± 0,27	± 0,33	± 0,45	± 0,62	-
50 < t ≤ 80	± 1,20	± 0,27	± 0,33	± 0,45	± 0,52	± 0,74	± 1,00
80 < t ≤ 120	± 2,20	± 0,33	± 0,45	± 0,52	± 0,74	± 1,00	± 1,20
Class B tolerance							
3 ≤ t ≤ 18	± 0,15	± 0,10	± 0,12	± 0,15	-	-	-
18 < t ≤ 30	± 0,22	± 0,10	± 0,12	± 0,15	± 0,22	-	-
30 < t ≤ 50	± 0,30	± 0,13	± 0,15	± 0,18	± 0,22	± 0,30	-
50 < t ≤ 80	± 0,37	± 0,16	± 0,18	± 0,22	± 0,30	± 0,37	-
80 < t ≤ 120	± 0,45	± 0,18	± 0,22	± 0,27	± 0,35	± 0,45	-

* Values are referred from Table 17 of EN 12167:2016

Dimensions: EN 12167:2016*

Tolerances on length of bar

Nominal width w (mm)	Preferred (available) lengths (mm)	Tolerance on length (mm)
$3 \leq w \leq 18$	3000, 4000	± 50
$18 < w \leq 30$	3000, 4000	± 100
$30 < w \leq 50$	2000, 3000, 4000	± 150
$50 < w \leq 80$	2000, 3000	± 200
$80 < w \leq 120$	1000, 2000	± 200

* Values are referred from Table 18 of EN 12167:2016

Dimensions: EN 12167:2016*

Tolerances on straightness of bar, for widths 10 mm and over

Tolerance class	Maximum deviation from straightness (mm)	
	Localized over any 400 mm length	Over whole length L of bar in metres ($L \geq 1m$)
A	2,4	$6,0 * L$
B	1,6	$4,0 * L$
C	0,8	$2,0 * L$

* Values are referred from Table 19 of EN 12167:2016

Dimensions: EN 12167:2016*

Maximum twist of bar

Nominal width w (mm)	Maximum permitted twist V in any 1000 mm length of bar (See Figure 2 in EN 12167:2016)		
	Class A	Class B	Class C
$3 \leq w \leq 18$	2,0	1,5	1,0
$18 < w \leq 30$	3,0	2,3	1,5
$30 < w \leq 50$	4,0	3,0	2,0
$50 < w \leq 80$	6,0	4,5	3,0
$80 < w \leq 120$	9,0	9,0	4,5

For bar of total length greater than 2000 mm, the permitted twist over the total length shall be twice the appropriate maximum given in the table for "in any 1000 mm".

* Values are referred from Table 20 of EN 12167:2016

Dimensions: EN 12167:2016*

Corner radii of bar

Nominal thickness t (mm)	Radii of corners	
	Sharp max.	Rounded range
$3 \leq t \leq 6$	0,3	0,3 – 0,5
$6 < t \leq 10$	0,4	0,4 – 0,8
$10 < t \leq 18$	0,5	0,5 – 1,2
$18 < t \leq 30$	0,6	0,6 – 1,8
$30 < t \leq 40$	0,7	0,7 – 2,8
$40 < t \leq 60$	0,8	0,8 – 4,0

NOTE: A bar having rounded corners of radius greater than those covered by this table is considered to be a profile

* Values are referred from Table 21 of EN 12167:2016

Tolerances for Rods of CW508L

Dimensions: EN 12163:2024*

Dimensional tolerances for rod

Nominal diameter or width across-flats	Tolerances	
	Class A	Class B
$1,6 \leq d/w \leq 3$	$\pm 0,10$	$\pm 0,05$
$3 < d/w \leq 6$	$\pm 0,15$	$\pm 0,08$
$6 < d/w \leq 10$	$\pm 0,20$	$\pm 0,11$
$10 < d/w \leq 18$	$\pm 0,25$	$\pm 0,14$
$18 < d/w \leq 30$	$\pm 0,30$	$\pm 0,17$
$30 < d/w \leq 50$	$\pm 0,60$	$\pm 0,20$
$50 < d/w \leq 80$	$\pm 0,70$	$\pm 0,37$

* Values are referred from Table 17 of EN 12163:2024

Dimensions: EN 12163:2024*

Tolerances on straightness of rod

Nominal diameter or width across-flats	Maximum deviation from straightness (See Figure 1 in EN 12163:2024)	
	h_2 depth of arch in any length l_2 of 400 mm	h_1 depth of arch in any length l_1 of 1000 mm
$10 \leq d/w \leq 50$	2,5	6,0

* Values are referred from Table 18 of EN 12163:2024

Dimensions: EN 12163:2024*

Corner radii for square and polygonal rod

Nominal width across-flats	Radii for sharp and rounded corners	
	Sharp max.	Rounded range
$1,6 \leq w \leq 3$	0,2	0,2 – 0,3
$3 < w \leq 6$	0,3	0,3 – 0,5
$6 < w \leq 10$	0,4	0,4 – 0,8
$10 < w \leq 18$	0,5	0,5 – 1,2
$18 < w \leq 30$	0,6	0,6 – 1,8
$30 < w \leq 50$	0,7	0,7 – 2,8
$50 < w \leq 80$	0,8	0,8 – 4,0

* Values are referred from Table 19 of EN 12163:2024

Dimensions: EN 12163:2024*

Maximum twist of square and polygonal rod

Nominal width across-flats w	Maximum permitted twist V in any 1 m length of rod
$10 \leq w \leq 18$	2,0
$18 < w \leq 30$	3,0
$30 < w \leq 60$	4,0

* Values are referred from Table 20 of EN 12163:2024

Dimensions: EN 12163:2024*

Sampling rate

Nominal width across-flats w (mm)	Mass of inspection lot for one test sample kg
$w \leq 25$	≤ 1000
$25 < w$	≤ 2000

* Values are referred from Table 21 of EN 12163:2024

Dimensions: EN 12165:2024*

Tolerances on diameter of round forging stock

Dimensions in millimetres

Nominal diameter	Tolerances
	Class A
$80 < D \leq 120$	± 2
$120 < D \leq 160$	$\pm 2,5$

* Values are referred from Table 10 of EN 12165:2024



Dimensions: EN 12165:2024*		
Tolerances on straightness of round forging stock		Dimensions in millimetres
Nominal diameter	Maximum deviation from straightness (See Figure 1 in EN 12164:2024)	
	<i>h2</i> <i>depth of arch in any length l2 of 400 mm</i>	<i>h1</i> <i>depth of arch in any length l1 of 1000 mm</i>
Straightness tolerances for rods over 60 mm diameter shall be agreed between the involved parties		