

Datasheet: EN CuBe2 / CW101C Less than 5 % alloying elements Rod for general purposes Alumeco ApS 23-05-2025				Internal alloy name: CW101C Metal: Copper Chemical Symbol: CuBe2 EN: EN CuBe2 UNS: C17200 SS: - GB: - DIN: 2.1247 Also known as: Beryllium Copper Alloy type: Engineering Copper									
Main usage: - Bearings - Electrical connectors - Welding electrodes - Corrosion resistant components - Moulds and general cooling inserts				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 Product standards: EN 12163:2024: Copper and copper alloys – Rod for general purposes									
Main properties: - High strength - Excellent cold workability - Good hot formability - Good electrical conductivity													
Chemical composition in %: EN 12163:2024													
Cu		Be		Co		Fe		Ni		Other elements			
Remaining		1,8 – 2,1		Max. 0,3		Max. 0,2		Max. 0,3		Max. 0,5			
Mechanical properties: EN 12163:2024													
Material Condition		Bar thickness mm		Tensile strength R _m Min. MPa		0,2% proof Strength R _m Min. MPa		Elongation			Hardness HBW		
								Min. %					
R1150		3 – 30		1150		1000		-			-		
H340		3 – 30		-		-		-			-		
R1300		3 – 30		1300		1100		-			-		
H350		3 – 30		-		-		-			-		
* Information values only;													
Physical properties:													
Density (20 °C)		Solidification range		Electrical conductivity		Thermal conductivity (20 °C)		Thermal expansion (20 - 300 °C)		Annealing temperature		E – modulus (20 °C)	
g/cm ³		°C		%IACS		W/m K		µm m ⁻¹ K ⁻¹		°C		N / mm ²	
8,3		875 – 985		27		120		17		750 – 800		135.000	
Properties and information's (3 Excellent; 2 Good; 1 Poor/not recommendable)¹													
Machinability (Zerspanbarkeitsindex): 50* *(CuZn39Pb3 = 100)						Joining Methods: Soldering: 2 Brazing: 2 Gas-shielded arc welding: 2 MIG/TIG 1-2							
Forming Methods: Hot Formability: 2 Cold Formability: 2						Surface Treatment: Polishing: Mechanical: 2 Electrolytic/chemical: 2							
Corrosion resistance: Atmosphere: 2 Waters and alkaline: 2 Acids, Ammonia, Seawater: 1						Galvanizing: 2							

Tolerances for Rods of CW101C

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