ALMAG

DATA SHEET:
NLB CW510L

HOT FORGING

HUG

NLB CW510L

Certified to NSF/ANSI/CAN 372

Standard alloy for hot forging with low lead content.

Alloy without lead (<0,10%) refined in order to improve the characteristics of hot deformability and machinability. Conforms to the provisions of the 4MS group and to US standards for materials in contact with drinking water. The NSF372 certificate is a guarantee of compliance with American standards.

NAME OF ALLOY

UNI EN: CW510L - CuZn42 | **ASTM:** C28500

CHEMICAL COMPOSITION UNI EN 12165:2024

Cu	Pb	Sn	Fe	Ni*	Al	Zn	Other elements
min. 57.0 max. 59.0 %	≤0.1 %	≤0.3 %	≤0.3 %	≤0.2 %	≤0.05 %	difference	≤0.2 %

*Limitation according 4MS. Elements not listed must be ≤0.02 %.
Group of restriction of the surface in contact with drinking water: B,D.

HEAT TREATMENTS

STRESS RELIEVING

Enables the redistribution of tensions induced by mechanical processing or cold plastic deformation reducing the risk of stress corrosion cracking.
The treatment consists of heating the items to 200°C - 250°C for 2 hours and cooling within the furnace.
The validation of the stress relieving treatment can be performed with the ISO 6957 test.

OTHER TREATMENTS

No other heat treatments are required.

TECHNOLOGICAL PROPERTIES

low ▯▯▯▯▯▯▯ excellent

Structure	α+β	**Machinability**	■■■■■□□
Density	8.4 kg/cm^2	**Weldability**	■■■■□□□
Electrical conductivity	27% IACS	**Hot forming**	■■■■□□□
Coeff. of thermal expansion	21.2 10^{-6}/K	**Cold forming**	■■□□□□□
Thermal conductivity*	112 W/(m K)	**Corrosion resistance****	Not resistant
Specific heat	381 J/(kg K)		
Elasticity module	85 kN/mm^2		
Melting point	870-890 °C		

*at room temperature
**use care to ascertain compatibility with chemical substances

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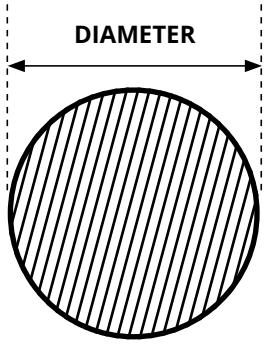

MECHANICAL PROPERTIES UNI EN 12165:2024

Condition of material	Diameter in mm		Hardness HBW	
	from	to (included)	min.	max.
M	All		As a product	

Any special hardness values must be defined when ordering

Rm N/mm²	$Rp_{0.2}$ N/mm²	A%
480-530*	350-390*	20-30*

*The values shown are not regulated and are purely indicative.

DIMENSIONS, TOLERANCES, AND STRAIGHTNESS UNI EN 12165:2024

Nominal diameter (mm)		TOLERANCES		Diameter mm		Length of bar	Tolerance mm
		Class A	Class B				
10	18	+/- 0.25	+/- 0.14	10	30	3.0 - 5.0	+/- 100
18	30	+/- 0.30	+/- 0.17	30	50	3.0 - 5.0	+/- 200
30	50	+/- 0.60	+/- 0.20	50	80	3.0	+/- 300
50	80	+/- 0.70	+/- 0.37				
80	120	+/- 2					

The standard "Extruded calibrated" product is produced in Class B up to and including Ø80 mm
Semi-finished products over Ø45 mm can be supplied in the "pressed" and "rolled" forms with Class A tolerance

Diameter (mm)		Deviation from straightness in mm	
		Every 400 mm	Every m of length L ≥ 1
10	50	0.4	1.0 x L

BAR FINISHING AND PACKAGING

Bar ends	finishing with saw cut and chamfer
Bar surface	not pickled
Packaging	1000 kg bundle – 3/5 metal straps different bundle packagings and quantities are possible upon request
Identification	adhesive label on bundle strap

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