DATA SHEET:
CZ-LL CW511L

HOT FORGING

CZ-LL CW511L

Certified to NSF/ANSI 372

Anti dezification alloy with low lead content.

This alloy complies with the requirements of US standards with limitations imposed on lead for materials in contact with drinking water. The NSF372 certificate obtained is a guarantee of compliance with American regulations. The good hot deformability and high copper content make the CZ-LL alloy an excellent material for molding, with high resistance to dezincification. The reduced release of lead in contact with water makes the alloy compliant with the 4MS guidelines.

NAME OF ALLOY

UNI EN: CW511L - CuZn38As | **ASTM:** C27453

CHEMICAL COMPOSITION UNI EN 12165 ED.2016

Cu	Pb	Sn	Fe	Ni	Al	Mn*	As	Zn	Other elements
min. 61.5 max. 63.5 %	≤0.2 %	≤0.1 %	≤0.1 %	≤0.3 %	≤0.05 %	≤0.1 %	0.02 0.15 %	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

SOLUBILIZATION OF RESIDUAL β PHASE

To improve the corrosion resistance of the alloy a thermal treatment between 500°C and 550°C for 2 hours with cooling outside the furnace is required. This treatment after hot stamping enhances the solubilization of the residual beta phase to grant material resistant to dezincification.
The omission of this treatment impairs the anti-dezincification performance that the material is designed for.

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.

TECHNOLOGICAL PROPERTIES

			low … excellent
Structure	α	**Machinability**	
Density	8.4 kg/cm^2	**Weldability**	
Electrical conductivity	28% IACS	**Hot forming**	
Coeff. of thermal expansion	20.4 10^{-6}/K	**Cold forming**	
Thermal conductivity*	125 W/(m K)	**Corrosion resistance****	<100 µm
Specific heat	376 J/(kg K)		
Elasticity module	100 kN/mm^2		
Melting point	880-910 °C		

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

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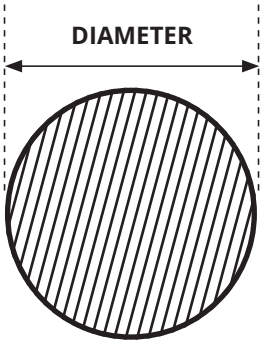

MECHANICAL PROPERTIES UNI EN 12165 ED.2016

Condition of material	Diameter in mm		Hardness HB	
	from	to (included)	min.	max.
M	All		As a product	
H070	8	120	70	150

Any special hardness values must be defined when ordering

Rm N/mm²	$Rp_{0.2}$ N/mm²	A%
320-360*	200-250*	20-25*

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

DIMENSIONS, TOLERANCES, AND STRAIGHTNESS UNI EN 12165 ED.2016

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	60	3.0	6.0 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

COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
= ISO 14001 =
= OHSAS 18001 =

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