METALLURGICA SAN MARCO

DATA SHEET: CW617N

HOT FORGING

Updated 06 / 23

ALLOY: CW617N

Standard alloy with high machinability and low lead content. Included in the 4MS Positive List.

ALLOY DESIGNATION

UNIEN: CW617N - CuZn40Pb2	**ASTM:** C37700	**DIN:** 20402	**BS:** CZ122	**GOST:** LS59-2

CHEMICAL COMPOSITION UNI EN12165 ED.2016

Cu	Pb	Sn	Fe	Ni*	Al	Zn	Other elements
Min 57.0% max 59.0%	1.6% 2.5%	≤0.3 %	≤0.3 %	≤0.3 %	≤0.05 %	difference	≤0.2 %

*Restrizioni d'uso secondo 4MS. Ciascun elemento non nominato deve essere ≤0.02%.
Gruppo di restrizione della superficie a contatto con acqua potabile secondo la "Common composition list": B e D.

HEAT TREATMENTS

STRESS RELIEVING

It specifically allows redistribution of tension induced by machining or cold plastic deformation, reducing the risk of stress corrosion cracking.

TREATMENT: heating of parts at 200°C to 250°C for 2 hours and cooling within the furnace. Validation of stress relief treatment can be performed with the ISO 6957 test.

OTHER TREATMENTS

Other heat treatments are not required

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TECHNOLOGICAL PROPERTIES

Structure	Density	Electrical conductivity	Coeff. of thermal expansion	Thermal conductivity*	Specific heat	Elasticity module	Melting point
α+β	8.4 kg/cm^2	27% IACS	20.7 10^{-6}K	120 W/(m K)	375 J/(kg K)	105 kN/mm^2	880-895 °C

low ○ ○ ○ ○ ○ ○ ○ excellent

Machinability: ● ● ● ● ○ ○ ○
Weldability: ● ● ● ● ● ● ●
Hot forming: ● ● ● ● ● ● ○

Cold Forming: ● ● ● ○ ○ ○ ○
Corrosion resistance**: ○ ○ ○ ○ ○ ○ ○

*at room temperature.
**compatibility with chemical substances should be carefully checked.

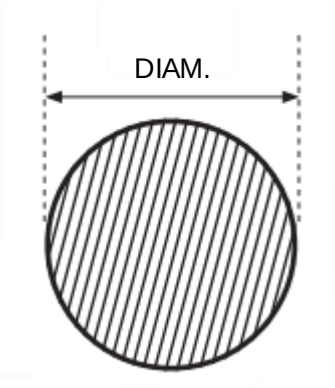
MECHANICAL PROPERTIES UNI EN12165 ED.2016

Condition of material	Diameter in mm		Hardness HB*	
	from	to (included)	min.	max
M	ALL		AS MANUFACTURED	
H070	8	120	70	170

Special hardness values must be defined when ordering.

Rm N/mm^2	Rp0.2 N/mm^2	A%
430-480 *	310-380*	20-30*

Values purely indicative.



ALLOY: CW612N

High copper alloy. Included in the 4MS Positive List

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 made in Class B up to and including Ø80 mm.
Semi-finished products larger than 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	1.5	3.0 x L

FINISHING AND PACKAGING

Bar ends	Finishing with saw cut.
Bar surface	Not pickled.
Packaging	1000 kg bundle – 3/5 metal straps. Different bundle packaging and quantities are possible on specific request.
Identification	Adhesive label on strap or bar ends.

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CW617N

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TECHNICAL NOTES

Hot deformability and good machinability are characteristics of this alloy. It also complies with 4MS requirements for materials in contact with potable water. It finds application in the manufacture of handles, faucets, valves, bolts and clamps, plumbing fixtures and general components.