METALLURGICA SAN MARCO

DATA SHEET: CW612N

HOT FORGING

Updated 06 / 23

ALLOY: CW612N

High copper alloy. Included in the 4MS Positive List

ALLOY DESIGNATION

UNIEN: CW614N - CuZn39Pb2	**ASTM:** C37700	**DIN:** 2.0380	**BS:** CZ120

CHEMICAL COMPOSITION UNI EN12165 ED.2016

Cu	Pb*	Sn	Fe	Ni*	Al	Zn	Other elements
Min 59.0% max 60.0%	1.6% 2.5%	≤0.3 %	≤0.3 %	≤0.3 %	≤0.05 %	difference	0,2

Restrictions according to 4MS. Each unnamed element must be less than 0.02%.
Restriction group of the surface in contact with drinking water according to the «common composition list»: C and 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

ALLOY: CW612N

High copper alloy. Included in the 4MS Positive List

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)	380 J/(kg K)	105 KN/mm^2	880-900 °C

low○○○○○○○○ excellent

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

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

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

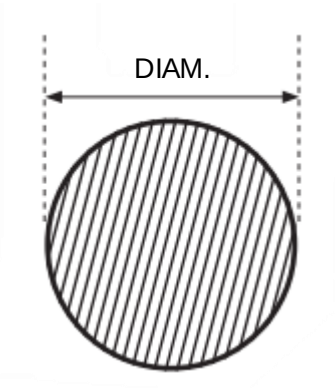
MECHANICAL PROPERTIES UNI EN12165 ED.2016

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%
410-450*	280-350*	25-35*

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.

ALLOY:
CW612N

High copper alloy. Included in the 4MS Positive List

TECHNICAL NOTES

With excellent cold plasticity and good machinability by chip removal and excellent hot deformability properties, this alloy is recommended where high hot flowability qualities are required. It is also included in the Positive List of metallic materials suitable for use in contact with potable water.