



METALLURGICA
SAN MARCO

DATA SHEET: **CW602N**

HOT FORGING

aggiornato al 10 / 24

ALLOY: CW602N

Standard anti-dezincification alloy for hot forging

ALLOY DESIGNATION

UNIEN: CW602N - CuZn36Pb2As	ASTM: C35330	BS: CZ132
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CHEMICAL COMPOSITION UNI EN12165 ED.2016

Cu	Pb	Sn	Fe	Ni	Al	Mn	As	Zn	Other elements
min.61.0% max 63.0%	1,7% 2,8%	≤0.1 %	≤0.1 %	≤0.3 %	≤0.05 %	≤0.1 %	0.02 % 0.15 %	difference	≤0.2 %

HEAT TREATMENTS

Two types of heat treatments are recommended to be carried out according to one's needs

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.

SOLUBILIZATION OF RESIDUAL β PHASE

After hot stamping, to improve the corrosion resistance of the material, heat treatment between 500°C and 550°C is prescribed for a dwell time at the temperature of at least 2 hours to furnace cooling.

This treatment following the hot stamping operation allows solubilization of the residual beta phase to bring the material to a dezincification-resistant state. The omission of the treatment does not allow the alloy to provide the performance for which it was designed

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TECHNOLOGICAL PROPERTIES

Structure	Density	Electrical conductivity	Coeff. of thermal expansion	Thermal conductivity*	Specific heat	Elasticity module	Melting point
α	8.5 kg/dm ³	26% IACS	20.5 10 ⁻⁶ K	117 W/(m K)	377 J/(kg K)	103 KN/mm ²	880-910 °C

low ○○○○○○ excellent

Machinability: ●●●○○○

Weldability: ●●●●○○

Hot forming: ●●●●○○

Cold Forming: ●●●●○○

Corrosion resistance:** <100 μm

*at room temperature.

**compatibility with chemical substances should be carefully checked.

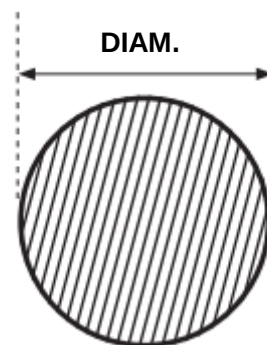
MECHANICAL PROPERTIES UNI EN12165 ED.2016

Condition of material	Diameter in mm		Hardness HB*	
	from	to (included)	min.	max
M	ALL		AS MANUFACTURED	
H070	8	120	70	150

Special hardness values must be defined when ordering.

Rm N/mm ²	Rp _{0.2} N/mm ²	A%
340-380*	220-300*	27-37*

Values purely indicative.



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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.

Diameter (mm)		Deviation from straightness in mm	
		Every 400 mm	Every m of length $L \geq 1$
10	50	0.4	1.0 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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TECHNICAL NOTES

This alloy contains very low dezincification values. Excellent hot deformability characteristics and good machinability by chip removal make this alloy ideal for post-molding processing. The alloy does not meet the requirements of DIN 50930/6 for use in contact with drinking water in 4MS member countries, despite which it can be used in all aggressive environments where the dezincification properties of conventional brasses would not be sufficient.