ALMAG

DATA SHEET:
CZ132 CW602N

HOT FORGING

HUG

CZ132 CW602N

Standard anti dezincification alloy for hot forging.

Special alloy compliant with European standards and with extremely low dezincification values. The excellent hot deformability properties, combined with good machinability for chip removal, make it ideal for post-forging processes. It does not conform to the requirements of DIN 50930/6 and therefore to contact with drinking water in countries belonging to 4MS. However, it can be used in all aggressive environments, where the dezincification characteristics of traditional brasses may not be sufficient.

NAME OF ALLOY

UNI EN: CW602N - CuZn36Pb2As	**ASTM:** C35330	**BS:** CZ132

CHEMICAL COMPOSITION UNI EN 12165 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 %	diff.	≤0.2 %

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

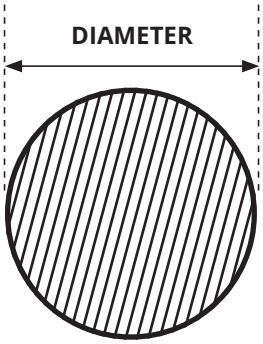
low ▯▯▯▯▯▯▯▯ excellent

Structure	α	**Machinability**	■■■□□□□□
Density	8.5 kg/cm^2	**Weldability**	■■■■■□□□
Electrical conductivity	26% IACS	**Hot forming**	■■■■■□□□
Coeff. of thermal expansion	20.5 10^{-6}/K	**Cold forming**	■■■■■□□□
Thermal conductivity*	117 W/(m K)	**Corrosion resistance****	<100 µm
Specific heat	377 J/(kg K)		
Elasticity module	103 kN/mm^2		
Melting point	880-910 °C		

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

CZ132 CW602N

Standard anti-dezincification alloy for hot forging.



MECHANICAL PROPERTIES UNI EN 12165 ED.2016

Condition of material	Diameter 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%
340-380*	220-300*	27-37*

*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	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

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

ALMAG

www.almag.it

ALMAG S.p.A. AZIENDA LAVORAZIONI METALLURGICHE E AFFINI GNUTTI
Single-member S.p.A. *A subsidiary of HUG S.p.A.*
25030 Roncadelle (BS) - Via Vittorio Emanuele II n. 39 - Fully paid share capital € 2.000.000
Tel. +39 030 2789511 - Fax +39 030 2789680 (admin.) - Fax +39 030 2789690 (sales)
F.C./VAT and Brescia Chamber of Comm. Reg. No. 03368970988 - R.E.A. No. 528368 - Cert. email almagspa@legalmail.it

HUG