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DATA SHEET:
CZ132 CW602N

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FREE MACHINING



Standard anti dezincification alloy for chip removal.

Standard alloy resistant to dezincification. The good hot deformability and machinability due to chip removal make it excellent for the production of parts that must withstand contact with sea water and aggressive environments. It is not included in the 4MS "Positive List" for use in contact with drinking water.

NAME OF ALLOY

UNI EN: CW602N - CuZn36Pb2As

ASTM: C35330

BS: CZ132

CHEMICAL COMPOSITION UNI EN 12164 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

STRESS RELIEVING

Enables the redistribution of tensions induced by mechanical processing of 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.

SOLUBILIZATION OF RESIDUAL β PHASE

For the drawn products this treatment is performed by Almag Spa to eliminate the remaining beta phase left over from the extrusion. This treatment optimizes dezincification resistance for the alloy.

MECHANICAL PROPERTIES UNI EN 12164 ED.2016

Condition of material	Diameter in mm		Hardness HB*		Rm	Rp _{0.2} N/mm ²		Elongation %
	from	to (included)	min.	max.	min.	min.	max.	min.
M	All		As a product					
R280	6 (5)	80 (60)	-	-	280	-	200	30
H070	6 (5)	80 (60)	70	110	-	-	-	-
R320	6 (5)	60 (50)	-	-	320	200	-	20
H090	6 (5)	60 (50)	90	135	-	-	-	-
R400	4	15 (13)	-	-	400	250	-	8
H105	4	15 (13)	105	-	-	-	-	-

*the hardness value is determined in the mid-range
The values in brackets refer to the hexagonal section bar.
The standard condition produced by Almag is R400 for Rm or H105 for hardness.
Any other conditions must be requested when ordering - subject to feasibility request.

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TECHNOLOGICAL PROPERTIES		low	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	excellent
Structure	α	Machinability		
Density	8.5 kg/cm ³	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

DIMENSIONS, TOLERANCES, AND STRAIGHTNESS UNI EN 12164 ED.2016

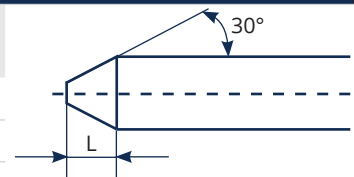
ROUND section bar					HEXAGONAL and SQUARE		
Nominal Diameter (mm)		TOLERANCES			Nominal key (mm)		Tolerance mm
from	to included	Class A	Class B	Class C	from	to included	
6	10	0 - 0.06	0 - 0.036	0 - 0.025	6	10	0 - 0.09
10	18	0 - 0.07	0 - 0.043		10	18	0 - 0.11
18	30	0 - 0.08	0 - 0.052		18	30	0 - 0.13
30	50	0 - 0.16			30	50	0 - 0.16
50	80	0 - 0.19			50	60	0 - 0.19

The standard tolerance for the round bar is Class A. Any different tolerances must be agreed upon when ordering
Semi-finished products can be supplied from Ø63 to Ø80 mm with Class A tolerances

Diameter (mm)	Length of bar (mm)	Tolerance (mm)	Diameter or Key (mm)	Deviation from straightness in mm	
				Every 400 mm	Every m of length L ≥ 1
2	30	3000 o 4000	+/- 50		
30	50	3000 o 4000	+/- 100		
50	80	3000	+/- 100		
Round section bar					
10	50		0.4	1.0 x L	
Hexagonal and square section bar					
10	50		0.6	1.5 x L	

BAR FINISHING AND PACKAGING

Diameter or Key (mm)	Chamfer Length L mm	Tip Length L mm
5	10	0.2 1.5 2 7
10	20	0.2 2 3 10
20	30	0.2 3 4 12



Unless otherwise specified by the buyer, the shape of the ends of products larger than 30 mm is up to the supplier

Ends of round bars	finishing with chamfer and tip up to and including Ø40 mm finishing with chamfer and cut greater than Ø40 mm
Ends of hexagonal bars	finishing with chamfer and cut
Bar surface	pickled
Packaging	1000 kg bundle – 3/5 metal straps different bundle packagings and quantities are possible upon request
Identification	adhesive label on bundle strap
Stress relieving	the polygonal bar was subjected to stress relieving treatment



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