

Copper and Copper Alloys

CW624N Bar and Profiles

Description

Brasses are metal alloys primarily composed of Copper and Zinc, with the possibility of small additions of other alloying elements to confer specific advantageous properties. Brasses are characterized by their notable corrosion resistance and high tensile strength, making them well-suited for fabrication through hot forging. Free machining grades of brass serve as a standard for machining quality, setting a benchmark against which the machinability of other metals is compared.

Brasses are typically categorized into two classes: the alpha alloys, which contain less than 37% Zinc, and the alpha/beta alloys with Zinc content ranging from 37-45%. Alpha alloys are ductile and can be effectively cold worked, while alpha/beta or duplex alloys have limited cold ductility and are characterized by their greater hardness and strength. CZ130/CW624N falls within the alpha/beta alloy category.

CZ130/CW624N is a machinable brass alloy that exhibits an attractive yellow lustre. It is commonly used in sections like angles.

Typical applications for CZ130 include decorative purposes in various settings such as shopfittings, machine parts, instruments, electrical appliances, and hinges.

Designations

CZ130/CW624N can be associated with the following designations:

- ISO CuZn43Pb2Al / CuZn43Pb2
- CW623N

Machinability

The machinability of alloy CZ121/CW614N is excellent. It has a machinability rating of 100 and is the standard against which the machinability of other alloys is measured.

Supplied Forms

CZ130/CW624N is typically supplied in the form of angles and bars.

Chemical Composition

EN 12167:2011. CW624N Brass

Element	% Present
Copper (Cu)	55.00 - 57.00
Aluminium (Al)	0.05 - 5.00
Lead (Pb)	1.60 - 3.00
Zinc (Zn)	Balance

Corrosion Resistance

CZ130/CW624N is rated as poor to fair for cold working, which means it is not well-suited for cold working processes and may not achieve satisfactory results in such applications.

Cold Working

CZ130/CW624N is rated as poor to fair for cold working, which means it is not well-suited for cold working processes and may not achieve satisfactory results in such applications.

Hot Working

CZ130/CW624N is excellent for hot working and is typically formed into complex profiles using hot extrusion methods. It has a good to excellent hot forgeability rating, making it well-suited for hot forging processes.

Machinability

CZ130/CW624N has a very good machinability rating of 90, whereas CZ121/CW614N Brass is rated as 100, indicating that CZ121 is slightly superior in terms of machinability compared to CZ130.

Weldability

Soldering of CZ130/CW624N is rated as excellent, making it a suitable method for joining this material. However, oxyacetylene welding and gas shielded arc welding are not recommended for CZ130/CW624N. Resistance welding is rated as fair, while friction welding is rated as good for joining this material.

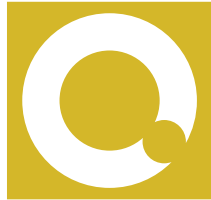
Physical Properties

Property	Value
Density	8.44 g/cm ³
Melting Point	890 °C
Thermal Conductivity	109 W/m.K

Mechanical Properties

Mechanical properties vary widely according to condition (soft/half hard/etc)

Property	Value
Proof Stress	150-220 MPa
Tensile Strength	350-420 MPa
Elongation A50 mm	20-30 %
Hardness Vickers	90 to 120 HV



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