

Brass

CW508L Sheet

Description

Brasses are alloys comprised of Copper and Zinc, often containing small amounts of other alloying elements to bestow specific advantageous properties. They are renowned for their exceptional corrosion resistance and high tensile strength, making them well-suited for hot forging. Free machining brass, in particular, sets a benchmark for machining against which other metals are measured.

Brasses are categorized into two classes: the alpha alloys, containing less than 37% zinc, and the alpha/beta alloys, with zinc content ranging from 37-45%. Alpha alloys are ductile and amenable to cold working, while alpha/beta or duplex alloys exhibit limited cold ductility, rendering them harder and stronger. CZ108/CW508L belongs to the alpha alloy category.

CZ108/CW508L is a high-purity cold forming brass primarily employed when demanding bending properties are necessary. While it can be machined, it requires slow speeds and very light feeds during machining.

Applications for CZ108/CW508L typically include scientific applications, radiators, heat exchangers, and decorative purposes.

Designations

CZ108/CW508L can be associated with the following designations, although it may not be an exact equivalent:

- UNS C27200
- ISO CuZn37

Chemical Composition

EN 1652:1997. CW508L Brass

Element	% Present
Copper (Cu)	62.00 - 64.00
Nickel (Ni)	0.0 - 0.30
Others (Total)	0.0 - 0.20
Lead (Pb)	0.0 - 0.10
Iron (Fe)	0.0 - 0.10
Tin (Sn)	0.0 - 0.10
Aluminium (Al)	0.0 - 0.05
Zinc (Zn)	Balance

Corrosion Resistance

CZ108/CW508L exhibits good to excellent corrosion resistance in the majority of environments. However, it is not suitable for use with acetic acid, moist ammonia or ammonia compounds, hydrochloric acid, and nitric acid, as it may not perform well in these specific corrosive conditions.

Cold Working

CZ108/CW508L demonstrates excellent cold working properties and can be readily drawn, making it suitable for various forming processes that involve cold working.

Hot Working

Fabrication is considered as Fair.

Weldability

Soldering and brazing of CZ108/CW508L are both rated as "excellent" in terms of their suitability. Oxyacetylene welding is considered "good," and gas shielded welding methods are rated as "fair." Additionally, resistance flash butt-welding is another viable option for joining CZ108/CW508L.

Supplied Forms

CZ108/CW508L is commonly supplied in the form of half-hard tubes and half-hard sheets. It is available in both sheet and tube forms

Physical Properties

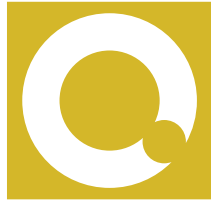
Property	Value
Density	8.44 g/cm ³
Melting Point	916 °C
Thermal Expansion	20.5 x10 ⁻⁶ /K
Modulus of Elasticity	103.4 GPa
Thermal Conductivity	116 W/m.K

Mechanical Properties

EN 1652:1997. Sheet. 0.2mm to 5.00mm

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

Property	Value
Proof Stress	110-500 MPa
Tensile Strength	300-550 MPa
Elongation A50 mm	38-3 %
Hardness Vickers	55 to 180 HV



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