Shropshire Stainless & Aluminium Ltd

T: 01743 466699 F: 01743 466688

CZ112 / CW712R - Naval Brass

CW712R / CZ112 is commonly known as Naval Brass due to its improved corrosion resistance in marine environments. The general composition is 60% copper, 39% zinc with an important 1% tin addition that gives an improved corrosion resistance together with a harder and stronger duplex structure to improve the mechanical properties.

The increase in corrosion resistance enables the material to be used in both seawater and other mildly aggressive media, it also offers better strength levels than many of the basic alpha brasses combined with an excellent hot formability.

Related Specifications

CZ112	CW712R
C46400	CuZn36Sn1

Chemical Composition

Copper	59.5-63.5%
Tin	1.0-1.5%
Lead	0.2-0.6%
Zinc	Rem

Key Features

- Very good corrosion resistance in marine environments
- Excellent hot formability
- Good Strength
- Retention of properties at cryogenic temperatures

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Typical Physical Properties

Melting Point	915°C
Density	8.4 g/cm³
Specific Heat	380 J/Kg°K
Thermal conductivity (RT)	121 W/m°K
Thermal expansion coefficient (20-200°C)	20 x 10^{-6}
Electrical conductivity	26% IACS
Electrical Resistivity	0.066 ohm mm^2/m

Fabrication Properties

Hot Working Temperature Range	650-750°C
Hot Formability	Excellent
Cold Formability	Fair
Machinability rating (free cutting brass = 100)	40%
Annealing Temp. Range	450-600°C
Stress Relieving Temp. Range	225-325°C

Joining Methods

Soldering	Excellent
Brazing	Good
Oxy-acetylene welding	Good
Gas-shielded arc welding	Fair
Resistance welding: Spot and Seam	Fair
Butt	Good

Typical Uses:

- Marine Componentry including heat exchanger tube plates, nuts, bolts, rivets, marine hardware & fasteners
- High strength cold-headed products and fasteners & general machines components