

Data Sheet

NAVAL BRASS - CZ112/CW712R

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 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.

Key Features:	
Very good corrosion resistance in marines environments	
Excellent hot formability	
Good strength	
Retention of properties at cryogenic temperatures	
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

Typical Uses:

As its name the Naval Brass CW712R/ CZ112 is generally utilised in marine components including, heat exchanger tube plates, bolts, nuts, rivets, marine hardware, and fasteners for corrosion resistant service. Other uses include high strength cold-headed products and fasteners and general machined components.

Typical Physical Properties:	
Melting point	915°C
Density	8.4 g/cm ³
Specific heat	380J/Kg °K
Thermal conductivity	121 W/m°C
Thermal expansion coefficient (20 - 200°C)	20 x 10 - 6 per °C
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 butt	Fair - Good