

CZ115 is a duplex high tensile brass with a restricted aluminium content to enable it to be soldering and brazing. Similar in composition to the CW721 / CZ114 grade it was developed to allow high strength components to be joined. Sometimes referred to as a manganese bronze the CW722R / CZ115 has additions of iron, tin and manganese that benefit the physical and mechanical attributes of the alloy.

The tin and iron additions impart higher strength levels, while the tin also improves the corrosion resistance. The CW722R / CW115 also offers good fabrication properties with a very good machinability rating, ease of hot forging and the ability to lend itself to finish plating.

### Related Specifications

CZ115	CuZn40Mn1Pb1FeSn
CW722R	

### Chemical Composition

Copper	56.5-58.5%
Tin	0.2-0.8%
Lead	0.5-1.5%
Iron	0.3-1.0%
Aluminium	0.1% max
Manganese	0.5-2.0%
Zinc	Rem
Others	0.5% max

### Mechanical Properties (Specification minima 18-80mm)

Tensile Strength	440N/mm <sup>2</sup>
0.2% Proof Strength	210N/mm <sup>2</sup>
Elongation $\sqrt{5.65}$	15%

### Key Features

- Enhanced Strength Levels
- Good corrosion resistance
- Suitable for brazing and soldering
- Excellent hot forming properties
- Very Good machinability rating
- Non-sparking

### Typical Physical Properties

Melting Point	940°C
Density	8.42 g/cm <sup>3</sup>
Specific Heat	380 J/Kg°C

Thermal conductivity (RT)	88 W/m <sup>°K</sup>
Thermal expansion coefficient (20-200°C)	20 x 10 <sup>-6</sup>
Electrical conductivity	18% IACS
Electrical Resistivity	0.082 ohm mm <sup>2</sup> /m

### **Fabrication Properties**

Hot Working Temperature Range	700-750°C
Hot Formability	Very Good
Cold Formability	Poor
Machinability rating (free cutting brass = 100)	75%
Annealing Temp. Range	425-600°C
Stress Relieving Temp. Range	225-350°C

### **Joining Methods**

Soldering	Very Good
Brazing	Very Good
Oxy-acetylene welding	Not Recommended
Gas-shielded arc welding	Not Recommended
Resistance welding: Spot and Seam	Not Recommended
Butt	Fair

### **Typical Uses:**

Due to the enhanced mechanical properties and joining properties of CW722R / CZ115 it is utilised in gas valves and fittings, fasteners, pump trim, gears, locks, heavy-duty electrical connectors, transmission components, marine hardware, safety tools and decorative metalwork.

This technical information is given by Holme Dodsworth Metals without charge and the user shall employ such information at their own discretion and risk. For more detailed technical advice on temper selection, fabrication, joining, machining, physical and mechanical data please contact us as space does not permit the listing of every feature of the material.