

# PHOSPHOR BRONZE

## PB102 - CW451K



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PB102 bronze is a widely used alloy known for its high copper content and excellent machinability. Its composition of copper and tin gives it good mechanical properties, corrosion resistance and a pleasing golden colour, making it suitable for various applications and decorative items. Its excellent machinability allows for precision machining, while its resistance to corrosion makes it ideal for environments exposed to moisture and saltwater.

#### KEY FEATURES

- Good mechanical properties
- High corrosion resistance
- Good wear resistance
- Superb spring properties
- Excellent cold forming properties

#### CHEMICAL PROPERTIES

Copper (Cu)	Tin (Sn)	Nickel (Ni)	Zinc (Zn)	Phosphorus (P)	Lead (Pb)	Aluminium (Al)
<b>89-91%</b>	<b>8-10%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>0.02%</b>	<b>0.02%</b>

#### MECHANICAL PROPERTIES

Tensile strength (N/mm <sup>2</sup> )	<b>250-310</b>
Yield strength (N/mm <sup>2</sup> )	<b>80-110</b>
Elongation (% in 2 inches)	<b>15-25</b>
Hardness - Brinell (HB)	<b>70-90</b>
Hardness - Vickers (HV)	<b>60-80</b>

#### PHYSICAL PROPERTIES

Density (kg/m <sup>3</sup> )	<b>8800</b>	
Modulus of elasticity (Gpa)	<b>105</b>	
Mean coefficient of thermal expansion	0-100°C (µm/m/°C)	<b>18.5</b>
	0-350°C (µm/m/°C)	<b>19.7</b>
	0-538°C (µm/m/°C)	<b>20.6</b>
Thermal conductivity	at 100°C (W/m.K)	<b>42</b>
	at 500°C (W/m.K)	<b>29</b>
Specific Heat 0-100°C (J/kg.K)	<b>377</b>	
Electrical conductivity (IACS %)	<b>15-25</b>	
Melting point (°C)	<b>950</b>	

#### MARKET SECTORS



##### Marine Equipment

Propeller shaft bearings, valve components, ship fittings



##### Automotive Industry

Bushings, bearings, gears, valve seats, piston rings



##### Engineering Components

Gears, bushings, bearings, valve seats, pump components



##### Electrical Industry

Connectors, springs, switches, contacts



##### Aerospace Industry

Bearings, gears, valve seats, aircraft engine components



##### Construction & Architecture

Decorative hardware, sculptures, architectural accents