Product Information Sheet

ISSUE C

ALLOY PB1

A. W. Fraser Alloy PB1 is a phosphor bronze conforming to the requirements of B.S. 1400 - 1985 alloy PB1.

PB1 has good machining properties, high strength and good corrosion resistance to seawater and brine, making it suitable for pump and valve components.

PB1 is suitable for bearings having medium to high loads and speeds and good resistance to impact loading or pounding. PB1 bearings must have adequate lubrication and good alignment.

PB1 is suitable for heavy duty gears and wormwheels with high working loads and high speeds and adequate lubrication and alignment.

The composition of A. W. Fraser alloy PB1 is strictly controlled as are the casting conditions. PB1 products are manufactured using the latest continuous and centrifugal casting technology.

ALLOY PB1 - PHOSPHOR BRONZE (90-10) SUMMARY OF PROPERTIES

Chemical Composition - percent

Element			Nominal
Tin	Sn	10.0 - 11.0	10.5
Lead	Pb	0.25 maximum	
Zinc	Zn	0.05 maximum	
Nickel	Ni	0.10 maximum	
Iron	Fe	0.10 maximum	
Aluminium	Al	0.01 maximum	
Phosphorus	P	0.50 - 1.0	0.7
Copper	Cu	Balance	
Total Impurities		0.60 maximum	

Mechanical Properties [Typical]	(Continuous Cast)	Centrifugal Cast
Yield Strength	170 MPa (24,500 psi)	170 MPa (24,500 psi)
Ultimate Tensile Strength	360 MPa (52,000 psi)	340 MPa (49,000 psi)
Elongation	10%	10%
Typical Hardness	100 - 150 BHN	100 - 150 BHN
Specific Gravity	8.8	
Machinability Rating (Free Machining Brass=100)	30	
Max. Operating Temperature	250^{O}C (482^{O}F)	
Stress Relieving Temperature	260^{O}C (500^{O}F)	
Time at Temperature	1 hour per 25mm of section thickness	

Comparative Specifications

BS1400-PB1; AS1565 90710; ASTM B505, B271 - C90700; SAE 65; JIS H5113 - PBC2C; DIN 1705 - G-CuSn10; ISO 1338 - CuSn10P; BS EN 1982:1999 - CuSn11P