Product Information Sheet

ISSUE A

ALLOY CuSn12

A. W. Fraser Alloy CuSn12 is a phosphor bronze, commonly referred to as "Gear Bronze", which conforms to the requirements of DIN 1705 alloy GC-CuSn12.

CuSn12 has good machining properties, high strength and good corrosion resistance to seawater and brine, making it suitable for pump and valve components.

CuSn12 is suitable for bearings having medium to high loads and speeds, and has good resistance to impact loading or pounding. CuSn12 bearings must have adequate lubrication and good alignment.

CuSn12 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 CuSn12 is strictly controlled as are the casting conditions. Alloy CuSn12 products are manufactured using the latest continuous casting technology.

ALLOY CuSn12 - PHOSPHOR BRONZE (88-12) SUMMARY OF PROPERTIES

Chemical Composition - percent

Element			Nominal
Copper	Cu	84.0 – 88.5	88.0
Tin	Sn	10.5 – 13.0	11.5
Phosphorus	P	0.4 maximum	0.35
Lead	Pb	1.0 maximum	
Antimony	Sb	0.2 maximum	
Nickel	Ni	2.0 maximum	
Iron *	Fe	0.2 maximum	
Sulphur *	S	0.05 maximum	
Zinc *	Zn	1.0 maximum	
* Total Other Impurities		1.2 maximum	

Mechanical Properties [Typical]	Continuous Cast
Yield Strength	190 MPa
Ultimate Tensile Strength	340 MPa
Elongation	10%
Typical Hardness	100 - 150 BHN
Specific Gravity	8.8
Machinability Rating (Free Machining Brass=100)	30
Max. Operating Temperature	250^{O}C
Stress Relieving Temperature	260^{O}C
Time at Temperature	1 hour per 25mm of section thickness

Comparative Specifications

BS1400 - PB2; BS EN 1982 – CuSn12; AS1565 - 90810; ASTM B427 - C90800; SAE 65*;
JIS H5121 – CAC502C (PBC2C)*; GC-SnBz12; ISO 1338 - CuSn11P

* Similar but not identical