Product Information Sheet

ISSUE A

ALLOY EMS 210

A. W. Fraser Alloy EMS210 is a leaded tin bronze.

EMS 210 has excellent machining properties, medium strength and good corrosion resistance and will withstand mild acids as found in mine water.

Bearings manufactured from EMS 210 have excellent wear resistance under conditions of high speed, heavy pressure and vibration, have low friction and can be used where lubrication is less than adequate and there may be minor misalignment. EMS 210 bearings require a hardened shaft and maximum shaft surface speeds of 4 m/sec can be tolerated.

The composition of A. W. Fraser alloy EMS 210 is strictly controlled as are the casting conditions. Alloy EMS 210 products are manufactured using the latest continuous and centrifugal casting technology.

ALLOY EMS 210 - LEADED BRONZE (80-10-10) SUMMARY OF PROPERTIES

Chemical Composition - percent

Element			Nominal
Tin	Sn	9.0 - 11.0	10.0
Lead	Pb	8.5 - 11.0	10.0
Zinc	Zn	1.0 maximum	
Nickel	Ni	2.0 maximum	
Iron	Fe	0.15 maximum	
Aluminium	Al	0.01 maximum	
Phosphorus	P	0.10 maximum	
Antimony	Sb	0.5 maximum	
Copper	Cu	Balance	
Total Impurities		0.5 maximum	

Mechanical Properties [Typical]	Continuous Cast	Centrifugal Cast
Yield Strength	140 MPa (20,000 psi)	120 MPa (17,000 psi)
Ultimate Tensile Strength	250 MPa (36,000 psi)	210 MPa (30,000 psi)
Elongation	10% minimum	15% minimum
Typical Hardness	80 BHN	80 BHN
Compressive Strength 0.1% Permanent Set	125 Mpa (18,000 psi)	
Specific Gravity	9.0	
Machinability Rating (Free Machining Brass=100)	95	
Thermal conductivity	27.1 BTU (sqft-ft-hr-f)	
Specific Heat	0.09 BTU/lb/^{o}F at 68^{o}F	
Thermal Expansion	.0000103 Per ^{o}F from 68^{o}F to 392^{o}F	

Comparative Specifications

BS1400 - LB2; AS1565 93700; ASTM B505, B271 - C93700; SAE 64; JIS H5121 – CAC603C (LBC3C); DIN 1716 - G - CuPb10Sn; ISO 1338 - CuPb10Sn