Product Information Sheet

ISSUE B

ALLOY 686

A. W. Fraser Alloy 686 is a leaded manganese bronze combining high strength and excellent hot forging and corrosion resistant properties. Used extensively for marine applications propeller shafts, valve bodies, spindles, nuts, bolts, gears and bearings. This alloy has good machinability due to the addition of lead.

The composition of A. W. Fraser alloy 686 is strictly controlled as are the extrusion and finishing operations to achieve a constant standard of quality, properties and structure. All extrusions are manufactured from continuous cast billet stock ensuring uniform dispersion of lead particles and freedom from porosity.

ALLOY 686 - Leaded Manganese Bronze SUMMARY OF PROPERTIES

Chemical Composition - percent [Typical]

Element		
Copper	Cu	57.5
Lead	Pb	1.0
Tin	Sn	0.75
Manganese	Mn	1.0
Iron	Fe	0.75
Aluminium	Al	1.0
Zinc	Zn	Balance

Mechanical Properties [Typical]

	Drawn
0.2% Proof Strength	320 Mpa (46,000 psi)
Ultimate Tensile Strength	520 Mpa (75,000 psi)
Elongation	20%
Typical Hardness	150 VPN
Specific Gravity	8.5

Fabrication Properties

Machinability Rating	70 (Free maching brass = 100)
Cold Working	Poor
Bending	Fair
Hot Working	Good
Hot Forging	Excellent

Comparative Specifications

BS2874 – CZ114; AS 1567-686; AS 1568-686; DIN:17672 –CuZn40Al1*

* Similar but not identical.