Product Information Sheet

ISSUE C

ALLOY 865

A. W. Fraser Alloy 865 is a general purpose manganese bronze or high tensile brass conforming to the requirements of UNS C86500.

Alloy 865 has good strength and reasonable machining properties and is suitable for machinery parts requiring strength and toughness. This alloy is susceptible to dezincification and is not suitable for plumbing fittings or for use in a marine environment.

The composition of A. W. Fraser alloy 865 is strictly controlled as are the casting conditions. Alloy 865 products are manufactured using the latest continuous and centrifugal casting technology.

ALLOY 865 - MANGANESE BRONZE SUMMARY OF PROPERTIES

Chemical Composition - percent

Element			Nominal
Copper	Cu	55.0 - 60.0	58
Aluminium	Al	0.50 - 1.5	1.0
Iron	Fe	0.40 - 2.0	1.0
Manganese	Mn	0.10 - 1.5	0.4
Nickel	Ni	1.0 maximum	
Tin	Sn	1.0 maximum	
Lead	Pb	0.40 maximum	
Zinc	Zn	Balance	

Mechanical Properties [Typical]	Continuous Cast	Centrifugal Cast
Yield Strength	210 MPa (30,000 psi)	180 MPa (26,000 psi)
Ultimate Tensile Strength	500 MPa (72,500 psi)	470 MPa (68,000 psi)
Elongation	18%	20%
Typical Hardness	120 BHN	120 BHN
Compressive Strength 0.1% Permanent Set	165 MPa (23,500 psi)	
Specific Gravity	8.3	
Machinability Rating (Free Machining Brass=100)	26	
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 - HTB1*; AS1565 C86500; ASTM B505, B271 - C86500; SAE 43; JIS H5121 – CAC301C (HBsC1)*; DIN 1709 - G-CuZN35Al1*; ISO 1338 CuZnAl2FeMnNi*

* Similar but not identical