

# NON-FERROUS METALS

## Aluminium Alloys, Zinc and Copper Based Alloys



SPECIFICATION	BS	TYPE	AFNOR	EN STANDARD	CHEMICAL COMPOSITION % (Maximum unless stated otherwise)									HEAT TREATMENT CONDITION	MECHANICAL PROPERTIES		CHARACTERISTICS AND TYPICAL APPLICATIONS
					Cu	Mg	Si	Fe	Mn	Ni	Zn	Ti	Others		UTS (MIN) N/MM <sup>2</sup>	ELONGATION %	
LM4	BS1490	AlSi5Cu3	A-S5U3	EN-AB-45200	2.0/4.0	<0.2	4.0/6.0	<0.8	0.2/0.6	<0.3	<0.5	<0.2	Pb <0.1 Sn <0.1	M TF	140-170	2-3	Useful general purpose alloy with a range of mechanical properties achieved by variations in heat treatment. Typical applications include crankcases, gear boxes, clutch cases etc.
LM25	BS1490	Al/Si/Mg	A-S7G	EN-AB-42100	0.10	0.2/0.6	6.5/7.5	0.5	0.3	0.1	0.1	0.2	-	M TE TB7 TF	130 150 160	2 1 2.5	Useful general purpose alloy with a range of mechanical properties achieved by variations in heat treatment. Good corrosion resistance and pressure tight properties. Excellent castability.
A356	-	Al/Si/Mg	-	-	0.20	0.2/0.4	6.5/7.5	0.2	0.1	-	0.10	0.20	-	T6	220	3	Comparable alloy to L99.
A357	BSL169	Al/Si/Mg	-	-	0.20 0.10	0.4/0.7 0.5/0.75	6.5/7.5 6.5/7.5	0.2 0.2	0.1 0.1	-0.05	0.10 0.10	0.1/0. 2 0.1/0.	Be 0.04/0.07 Be 0.07	T6 TF	280 300	3 3.5	Comparable to A356 and BS L99, but exhibiting higher strength. Widely used for structural applications where premium quality is required.

ZA12	-	Zinc	-	-	0.5/1.2	0.02/0.03	-	-	-	-	BAL	-	Al 10.8/11.5	N/A	275	1-2	Good casting alloy with excellent machining and bearing properties.
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					Cu	Mg	Si	Fe	Mn	Ni	Zn	Ti	Others			
LG2	BS1400	Leaded Gunmetal 85/5/5/5	-	-	BAL	4.0/6.0	4.0/6.0	4.0/6.0	2.0	-	-	-	-	200	13	Moderate strength and good corrosion resistance to sea water. Pump bodies, cocks, bearings and gears with low loads and adequate lubrication.
PB1 PB2	BS1400	Phosphor Bronze	-	-	BAL	10.0 min 11.0/13.0	0.05 0.30	0.25 0.50	0.10 0.50	0.10 0.15	0.01 0.01	- -	P 0.50 min P 0.15 min	220 220	3 5	Resistant to sea water, dilute acids and boiler feed water. Good bearing alloy for high loads with good lubrication.
MB1		Silicon Brass	-	-	79		4	-	-	-	14.5	-	Al 0.4 Sn <0.01 Pb <0.01	479	25	Silicon brass; Good strength, toughness, and corrosion resistance. Good casting qualities.
Silicon Bronze		Silicon Bronze	-	-	94-96	<1	2.5 - 6	<2	<1	<1	<1	-	-	-	-	Highly resistant to corrosion making it ideal for the marine and chemical industries. Applications include parts for pumps & valves.
HTB1	BS1400	High Tensile Brass	-	-	57.0 min	1.0	BAL	1.30	1.5	<1	BAL	-	Al 1.5	470	18	Strong alloy, resistant to sea water corrosion. Used for ships' propellers.
HTB3	BS1400	-	-	-	55.0 min		<0.1	2.00	2.5	<1	BAL	-	Al 4.5	740	11	High conductivity.

This list gives details of the main alloys cast but we would be pleased to discuss any other materials required. As this is intended to be a guide only, the full relevant standard specifications should be referred to when determining suitable materials for a particular product and its application.