



# NON-FERROUS METALS

## Aluminium Alloys, Zinc and Copper Based Alloys

SPECIFICATION	BS	TYPE	AFNOR	WERKSTOFF	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 %	
LM25	BS1490	Al/Si/Mg	A-S7G	3.2371	0.10	0.2/0.6	6.5/7.5	0.5	0.3	0.1	0.1	0.2		M TE TB7 TF	130 150 160 230	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.
L99	BS1490	Al/Si/Mg	A-S7 G0.3	3.2371	0.10	0.2/0.45	6.5/7.5	0.2	0.1	0.1	0.1	0.2		TF	230	2	High strength, good corrosion resistant alloy. Excellent castability for premium grade castings.
356		Al/Si/Mg			0.25	0.2/0.4	6.5/7.5	0.6	0.35	-	0.35	0.25		T61 T6	158 206	- 3	Useful general purpose alloy with good strength and corrosion resistance. Good 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 0.1/0.2	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	Not heat treated	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 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.
AB2	BS1400	Aluminium Bronze			BAL	-	0.50	-	4.0/5.5	4.0/5.5	8.8/10.0	1.5		640	13	Tough, high strength material, resistant to corrosion from sea water and acids. Difficult alloy to cast due to dross and narrow freezing range.
SCB3	BS1400	Brass			63.0/70.0	1.5	BAL	1.0/3.0	1.0	0.75	-	-		-	-	General purpose engineering material with good machining properties. Not suited to sea water or boiler feed water applications.
HTB1	BS1400	High Tensile Brass			55.0 min	1.0	BAL	0.50	1.0	0.7/2.0	0.5/2.5	3.0		470	18	Strong alloy, resistant to sea water corrosion. Used for ships' propellers.

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.