

ALUMINIUM ALLOYS

	CHEMICAL COMPOSITION, %												COND- ITION	MECHANICAL PROPERTIES			COMPARABLE SPECIFICATIONS	CHARACTERISTICS AND USES	
	SPECIFICATION	Cu	Mg	Si	Fe	Mn	Ni	Zn	Pb	Sn	Ti	OTHERS		UTS N/MM ²	0.2%PS N/MM ²	ELONG %			
AEROSPACE	BS L99	0.10	0.20/0.45	6.5/7.5	0.20	0.10	0.10	0.10	0.05	0.05	0.20		TF	MIN 230	MIN 185	MIN 2	A356 (USA) A-S7G03 (FRANCE) G-A1S17Mg (GERMANY) Al-Si7Mg (I.S.O.)	GOOD MECHANICAL PROPERTIES. EXCELLENT FOUNDRY CHARACTERISTICS ENSURE A HIGH DEGREE OF SOUNDNESS.	
	BS L119	4.5/5.5	0.10	0.30	0.50	0.20/0.30	1.3/1.7	0.10	0.05	0.05	0.15/0.25	sb0.10/0.30 Co0.10/0.30 Zr0.10/0.30	TF	215	190	1	MSRR8009/RR350 (UK)	RETAINS MECHANICAL PROPERTIES UP TO 350°C. DIFFICULT FOUNDRY ALLOY, REQUIRES SPECIAL FOUNDRY TECHNIQUES.	
	BS L51	0.8/2.0	0.05/0.20	1.5/2.8	0.8/1.4	0.1	0.8/1.7	0.1	0.05	0.05	0.25		TE	160	125	2	MSRR8041/RR50 (UK) A-S2U (FRANCE)	RETAINS MECHANICAL PROPERTIES UP TO 200°C.	
	DTD 5008	0.1	0.5/0.75	0.25	0.5	0.1		4.8/5.7	0.05	0.05	0.25	Cr0.4/0.6	M	215	170*	4	40E (USA) Al-Zn5Mg (I.S.O.) A-Z5G (FRANCE)	BRAZEABLE ALLOY, DIFFICULT FOUNDRY ALLOY - SUITABLE FOR SIMPLE SHAPES ONLY. MATERIAL FULLY AGE HARDENS TO OPTIMUM PROPERTIES AFTER 21 DAYS AT ROOM TEMPERATURE.	
	BS L78	1.0/1.5	0.4/0.6	4.5/5.5	0.6	0.5	0.25	0.10	0.05	0.05	0.25		TF	250	220	-	G-A1Si5Cu1 (GERMANY) 3600 (ITALY) 355 (USA)	GOOD TENSILE STRENGTH. GOOD CASTABILITY.	
	BS L169	0.10	0.50/0.75	6.5/7.5	0.20	0.10	0.05	0.10	0.05	0.05	0.10/0.20	Be0.07	TF	300	240	3.5	A357 (USA) EN 3125 A-S7G06 (FRANCE)	HIGH MECHANICAL PROPERTIES USED IN CRITICAL AEROSPACE APPLICATIONS.	
	GENERAL ENGINEERING (U.K.)	BS 1490 LM25	0.20	0.20/0.6	6.5/7.5	0.5	0.3	0.1	0.1	0.1	0.05	0.2		M TE TB7 TF	130 150 160 230	80* 120* 80* 185*	2 1 2.5 -	356 (USA) A-S7G (FRANCE) G-A1S17Mg (GERMANY) Al-Si7Mg (I.S.O.)	OUTSTANDING GENERAL PURPOSE HIGH STRENGTH ALLOY. EXCELLENT CASTING PROPERTIES, GOOD CORROSION RESISTANCE, GOOD PRESSURE-TIGHT PROPERTIES, HEAT TREATMENT VARIATIONS PROVIDE A WIDE RANGE OF MECHANICAL PROPERTIES TO COVER MOST APPLICATIONS.
		BS 1490 LM0	0.03	0.03	0.30	0.40	0.03	0.03	0.07	0.03	0.03	-		M	-	-	-	A5 (FRANCE)	PURE ALUMINIUM. HIGH CONDUCTIVITY. GOOD COLOUR ANODISING. CAN BE BRAZED.
BS 1490 LM5		0.1	3.0/6.0	0.3	0.6	0.3/0.7	0.1	0.1	0.1	0.05	0.2		M	140	90*	3		HIGH CORROSION RESISTANCE, ACCEPTS A HIGH POLISH.	
U.S.A.	356	0.25	0.20/0.45	6.5/7.5	0.6	0.35		0.35			0.25		T51 T6	158 206	- 137	- 3	BS 1490 LM25 (UK)	MOST WIDELY USED. IT HAS HIGH STRENGTH AND GOOD CORROSION RESISTANCE.	
	A356	0.20	0.20/0.45	6.5/7.5	0.20	0.10		0.10			0.20		T6	220	151	3	BS L99 (UK)	HIGH PURITY 356 FOR AEROSPACE USE. SEE BS L99 FOR COMMENTS.	
	A357	0.20	0.40/0.7	6.5/7.5	0.20	0.10		0.10			0.04-0.2	Be0.04/0.07	T6	280	210	3	ABM 5-5049 (UK) S-07-1306 (UK) L169 (UK)	HIGH MECHANICAL PROPERTIES. STRUCTURAL APPLICATIONS.	

HEAT TREATMENT CONDITION

M = AS CAST

TE = PRECIPITATION TREATED ONLY = T51 (USA)

TB7 = SOLUTION TREATED AND STABILISED

TF = SOLUTION TREATED AND PRECIPITATION TREATED = T6 (USA)

ANALYSIS REQUIREMENTS ARE MAXIMUM UNLESS OTHERWISE STATED.

* PROOF STRESS WHERE INDICATED THIS IS FOR INFORMATION ONLY AND IS NOT A SPECIFICATION REQUIREMENT.

TRITECH TOLERANCES

FUNCTIONAL DIMENSIONS				GENERAL
INCHES		MILLIMETRES		WALL THICKNESS TOLERANCE SPECIAL TOLERANCE APPLY TO WALL THICKNESSES. THE NORMAL TOLERANCE TO BE ALLOWED IS ±.008" (±0.20MM). LARGE PLAN WALL SECTIONS, ABOVE 75 SQ. INCHES (500 SQ. CM.), SHOULD INCORPORATE A TOLERANCE OF ±0.012" (±0.3MM). STRAIGHTNESS/FLATNESS TOLERANCE ±0.004" (±0.10MM) PER INCH (PER 25MM), EXCLUDING LOCALISED MAX PATTERN DEPRESSIONS. ANGULAR TOLERANCE ±1/2° SURFACE FINISH TYPICAL SURFACE FINISH - 80/100 MICROINCHES (2.0/2.5 MICROMETRES). A FINER SURFACE FINISH IS GENERALLY ATTAINABLE WHEN SPECIALLY REQUESTED. GEOMETRIC TOLERANCES ARE DEPENDENT ON THE CASTING CONFIGURATION AND/OR ALLOY SPECIFICATION, AND WOULD BE DISCUSSED ON AN INDIVIDUAL BASIS AT THE QUOTATION STAGE.
DIMENSION	TOLERANCE	DIMENSION	TOLERANCE	
UP TO 0.500	±.004"	UP TO 12.0	±0.10MM	
0.500+ TO 1.000	±.006"	12.0+ TO 25.0	±0.15MM	
1.000+ TO 1.500	±.008"	25.0+ TO 37.0	±0.20MM	
1.500+ TO 2.000	±.010"	37.0+ TO 50.0	±0.25MM	
2.000+ TO 2.500	±.012"	50.0+ TO 62.0	±0.30MM	
2.500+ TO 3.500	±.015"	62.0+ TO 87.0	±0.35MM	
3.500+ TO 5.000	±.018"	87.0+ TO 125.0	±0.45MM	
5.000+ TO 7.500	±.021"	125.0+ TO 187.0	±0.53MM	
7.500+ TO 10.000	±.024"	187.0+ TO 250.0	±0.60MM	
10.000+ TO 12.500	±.027"	250.0+ TO 312.0	±0.68MM	
12.500+ TO 15.000	±.030"	312.0+ TO 375.0	±0.75MM	
EACH ADDITIONAL INCH ADD	±.001"	EACH ADDITIONAL 25MM ADD	±.025MM	

CLOSER TOLERANCES ARE GENERALLY ATTAINABLE BY UTILISING ADDITIONAL OPERATIONS. NON-FUNCTIONAL DIMENSIONS WHERE DESIGN PERMITS, THE ABOVE TOLERANCES SHOULD BE INCREASED BY 50%.