ALLOYS

Comparision Table of Casting Characteristics and Properties

	Aluminium Alloys								Zinc Alloys				Copper Alloys	
	LM5	**LM6**	**LM9**	**LM16**	**LM24**	**LM25**	**LM27**	**LM31**	**ZL3**	**ZL8**	**ZL12**	**ZL27**	**LG2**	**PB2**
Tensile Strength (N/mm²)	140-170	160-190	95-120	70	180	130-150	140	215	241-283	374	276-380	310-440	200-270	220-310
Elongation (%)	3	5	03-May	2	1.5	2	1	4	10 - 16	6 - 10	3 - 7	3 - 11	13 - 25	5 - 15
Brinell Hardness	50-70	50-55	75-85	85	85	55-65	70-85	70	82-87	103	105-125	90-120	65-75	75-110
Density (g/cm³)	2.65	2.65	2.68	2.70	2.79	2.68	2.75	2.81	6.7	6.3	6.03	5.01	8.5	8.8
Freezing Range (°C approximate)	642-580	575-565	575-550	620-550	580-520	615-550	605-525	615-570	387-382	404-375	430-380	490-380	1010-854	1000-831
Thermal Con (cal/cm²/cm/°C @ 25°C)	0.33	0.34	0.35	0.34	0.23	0.36	0.37	0.35	0.27		0.21			
Electrical Con (% copper std. @ 20°C)	31	37	38	39	24	39	27	35	26.9	27.7	25	28	15	9
Machinability	E	P	F	G	G	G	G	G	E	E	E	E	E	G
Corrosion Resistance	E	E	G	G	F	E	G	E	E	E	E	E	E	E
Electro Plating Suitability	F (2)	F (1)	F (1)	F(1)	F	F	G	F	E	G	G	F	F	F
Non Spark	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	Yes
Casting Characteristics - Sand	F	E	G	G	F*	E	G	G	G	E	E	E	E	E
Casting Characteristics - Gravity	F	E	G	G	F	E	E	F	G	E	E	G	F	F
Casting Characteristics - High Pressure	F	G	*	*	E	G	G	F	E	G	F	F	U	U

E - Excellent
G - Good
F - Fair
P - Poor
U - Unsuitable
* = Not normally used in this form
1 = These alloys, containing Silicon, require a modification treatment for good abhesion
2 = Can be plated, but not recommended

HEAT TREATMENT

Aluminium Alloys - Heat Treatment Mechanical Properties

Metal	**UTS**		**0.2% Proof**		**Elong**	**BH**	**Density**
	N/mm²	**TPSI**	**N/mm²**	**>TPSI**	**%**		
LM25M	130	8.0	80	5.0	2.0	55	2.68
	150	10.0	100	6.5	3.0	65	
LM25TF	230	15.0	200	13.0	0.0	90	2.68
	280	18.0	250	16.0	2.0	100	
LM25TB7	160	10.0	80	5.0	2.5	65	2.68
			110	7.0		75	