



Foundry Technical Spec Sheet 2008

ALUMINIUM

Chemical compositions of group A ingots and castings: general purpose alloys

Designation	LM6	LM20	LM24	LM25	L99
Nominal composition	Al-Si12	Al-Si12	Al-Si8Cu3.5	AlSi7Mg0.5	
Nearest alloy(s) in ISO 3522	Al-Si12 Al-Si12Fe	Al-Si12Cu Al-Si12CuFe	Al-Si8Cu3Fe	Al-Si7Mg	
Elements	Min. Max. %	Min. Max. %	Min. Max. %	Min. Max. %	Min. Max. %
Aluminium	Remainder	Remainder	Remainder	Remainder	Remainder
Copper	- 0.1	- 0.4	3.0 4.0	- 0.20	- -
Magnesium	- 0.10	- 0.2	- 0.30	0.20 0.6	0.33 0.40
Silicon	10.0 13.0	10.0 13.0	7.5 9.5	6.5 7.5	7.15 7.25
Iron	- 0.6	- 1.0	- 1.3	- 0.5	- 0.08
Manganese	- 0.5	- 0.5	- 0.5	- 0.3	- -
Nickel	- 0.1	- 0.1	- 0.5	- 0.1	- 0.003
Zinc	- 0.1	- 0.2	- 3.0	- 0.1	- 0.01
Lead	- 0.1	- 0.1	- 0.3	- 0.1	- 0.001
Tin	- 0.05	- 0.1	- 0.2	- 0.05	- -
Titanium	- 0.2	- 0.2	- 0.2	- 0.2	- 0.15
Each other element	- 0.05	- 0.05	- -	- 0.05	- -
Total other elements	- 0.15	- 0.20	- 0.50	- 0.15	- -

ZINC

Mechanical Properties ZA12

	Gravity Die (RPM)	Sand Casting	Pressure Diecast (As Cast)	Pressure Diecast (Aged)
Tensile Strength (Mpa)	310 -345	275-317	404	310
Yield Strength (0.2% offset (Mpa)	268	207	320	241
Shear Strength (Mpa)		255	296	234
Elongation (% in 51mm)	1-2	1-2	4-7	10
Hardness (Brinell – 500Kg)	85-95	92-96	100-106	91
Impact Strength 6.35 mm x 6.35mm un-notched bar (Joules)		25	42	17
Fatigue Strength 5 x 10 ⁸ Cycles (Mpa)		103	103	

NB – RPM IS A GRAVITY PROCESS