

**Alloy: AC603**



**Chemical Composition Limits:**

Governing Specification:	AS 1874-2000
AAC Alloy Designation:	AC603

Hayes Metals Internal	B7603
Product Code(s):	C7603

Element	Standard	
	Min %	Max %
Al	Remainder	
Si	6.5	7.5
Fe		0.20
Cu		0.05
Mn		0.05
Mg	0.45	0.7
Cr		
Ni		
Zn		0.05
Sn		
Pb		
Ti		0.20
Sr	0.02	0.04
Footnote: Strontium (Sr) added as a modifying agent to enhance mechanical properties.		
Others - each		0.05
Total Others		0.15

**Nearest Related Chemical Composition Specifications:** (Guide only)

British Standard Alloy: **LM25**

Aluminium Association (US) Alloy Type: **A357**

German Alloy: **AlSiMg0.5**

Japanese (JIS) Alloy:

ISO Alloy:

**Mechanical Properties of Test Bars:**

Temper	Casting Method	Tensile Strength (MPa)	
		Ult (min)	Ult (typ)
T6	Sand Cast	270	315
T6	Gravity Diecast	290	345

Yield (Mpa) (typ)	Elongation (% on 50 mm min)		Brinell Hardness (typ)
	(min)	(typ)	
250	1	5	90
275	3	7	100

**Recommended Heat Treatment Method:**

**T6:** 540°C for 10 hours for Sand Cast or 8 hours for Gravity Diecast, quench in hot water (not less than 60°C). Age at 160°C for 4 hours.

- Footnotes:**
- Nominal metal temperature should be obtained as rapidly as possible and maintained within ± 5°C during the time at temperature.
  - For maximum effectiveness of solution heat treatment, quench water should be kept as low as possible consistent with a minimum of 60°C.

**Typical Physical Properties:**

Density	Thermal Conductivity	Freezing Range	
		Approx. °C	
kg/m <sup>3</sup> x 10 <sup>3</sup>	at 25°C W/m.K	Solidus	Liquidus
2.68	151	555	610

Electrical Conductivity at 20°C	Average Coefficient of Thermal Expansion
%ACS Equal Volume	per °C
39	21.4

**Relative Ratings:** (Ratings: Excellent - Good - Fair - Unsuitable)

Corrosion Resistance	Weldability (see footnote 1)	Pressure Tightness	Machinability	Castability By Method of Casting		
				Sand Cast	Gravity Die	Pressure
Excellent	Excellent	Excellent	Fair	Excellent	Excellent	

- Footnotes:**
- Unsoundness in castings may adversely affect the weldability rating.
  - Corrosion Resistance ratings refer to atmospheric corrosion.

**Typical Uses / General Comments:**

Easily cast and exhibits good electrical conductivity and high strength.

The alloy data given above has been prepared by Hayes Metals for use by its customers and associates as a guide to this alloy's typical properties. For editorial reasons the given specifications may not include all the minute details of the governing specification and therefore at any dispute or query, the relative original Specification should be consulted.