Alloy: CC601

HAYES METALS

Chemical Compostion Limits:

Governing Specification:	**AS 1874-2000**
AAC Alloy Designation:	**CC601**

Element	Standard	
	Min %	Max %
Al	Remainder	
Si	6.5	7.5
Fe		0.20
Cu		0.05
Mn		0.05
Mg	0.25	0.35
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. Ti added as a grain refiner.		
Others - each		0.05
Total Others		0.15

Hayes Metals Internal Product Code(s):	B7604 C7604

Nearest Related Chemical Composition Specifications: (Guide only)

British Standard Alloy:	**LM25**
Aluminium Association (US) Alloy Type:	**A356**
German Alloy:	**AlSi7Mg**
Japanese (JIS) Alloy:	**AC4C**
ISO Alloy:	

Mechanical Properties of Test Bars:

Temper	Casting Method	Tensile Strength (MPa) Ult (min)	Ult (typ)	Yield (Mpa) (typ)	Elongation (% on 50 mm min) (min)	(typ)	Brinell Hardness (typ)
T1	Sand Cast	130	160	90	2	5	55
T6	Sand Cast	205	255	185	3	5	70
T1	Gravity Diecast	140	195	95	3	6	
T6	Gravity Diecast	220	275	185	5	10	100

Recommended Heat Treatment Method:

T5: Age at 225°C for 8 hours. **T6:** 540°C for 8 hours, quench in hot water (not less than 60°C). Hold at room temperature for 8-16 hours. Age at 155°C for 4 hours.

Footnotes:
1. Nominal metal temperature should be obtained as rapidly as possible and maintained within ± 5°C during the time at temperature.
2. 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 kg/m³ x 10³	Thermal Conductivity at 25°C W/m.K	Freezing Range Approx. °C Solidus	Liquidus	Electrical Conductivity at 20°C %IACS Equal Volume	Average Coefficient of Thermal Expansion per °C
2.68	151	560	610	39	21.4

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

Corrosion Resistance	Weldability (see footnote 1)	Pressure Tightness	Machin-ability	Castability By Method of Casting		
				Sand Cast	Gravity Die	Pressure
Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent

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

Typical Uses / General Comments:

Transmission cases, truck axle housings, wheel cylinders blocks, railway tank car fittings, marine hardware, valve bodies and bridge rail parts. Used in applications where corrosion resistance combined with high strength is required. Used in food, chemical,marine applications and in particular automotive wheels. It's potential is increased by heat treatment.