

Alloy: **DA401**



Chemical Composition Limits:

Governing Specification:	AS 1874-2000
AAC Alloy Designation:	DA401

Hayes Metals Internal	B6402 (DA401P)
Product Code(s):	D6402 (DA401P)

Element	Standard	
	Min %	Max %
	Remainder	
Al		
Si	10.0	13.0
Fe		1.0
Cu		0.6
Mn		0.50
Mg		0.25
Cr		0.10
Ni		0.50
Zn		0.40
Sn		0.15
Pb		0.15
Ti		0.20
Footnote: Gravity casting versions usually have < 0.6% Fe & pressure casting versions typically > 0.7% Fe.		
Others - each		0.05
Total Others		0.25

Nearest Related Chemical Composition Specifications: (Guide only)

British Standard Alloy: **LM20**

Aluminium Association (US) Alloy Type: **A413**

German Alloy: **AlSi12Fe**

Japanese (JIS) Alloy: **ADC1**

ISO Alloy: **AlSi12CuFe**

Mechanical Properties of Test Bars:

Temper	Casting Method	Tensile Strength (MPa)	
		Ult (min)	Ult (typ)
F1	Gravity Diecast		260

Yield (Mpa) (typ)	Elongation (% on 50 mm min)		Brinell Hardness (typ)
	(min)	(typ)	
130		2	65

Recommended Heat Treatment Method:

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- Footnotes:**
1. Nominal metal temperature should be obtained as rapidly as possible and maintained within $\pm 5^{\circ}\text{C}$ 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	Thermal Conductivity	Freezing Range Approx. $^{\circ}\text{C}$	
		Solidus	Liquidus
$\text{kg/m}^3 \times 10^3$	at 25°C W/m.K		
2.65	121	565	575

Electrical Conductivity at 20°C	Average Coefficient of Thermal Expansion
%ACS Equal Volume	per $^{\circ}\text{C}$
37	20.0

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
				Good	Unsuitable	Good

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

Typical Uses / General Comments:

General purpose alloy having excellent mould-filling characteristics, used for castings having intricate shape and thin sections. Used for architectural and outdoor furniture parts, meter housings, lawnmower base plates and automotive and domestic appliance components requiring good corrosion resistance.

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.