

Alloy: **BA701**



Chemical Composition Limits:

Governing Specification:	AS 1874-2000
AAC Alloy Designation:	BA701

Hayes Metals Internal	D6701
Product Code(s):	

Element	Standard	
	Min %	Max %
Al	Remainder	
Si		0.25
Fe		0.50
Cu		0.15
Mn		0.15
Mg	0.50	0.7
Cr	0.40	0.6
Ni		0.10
Zn	4.8	5.7
Sn		0.05
Pb		0.05
Ti	0.15	0.25
Others - each		0.05
Total Others		0.15

Nearest Related Chemical Composition Specifications: (Guide only)

British Standard Alloy: **DTD5008**

Aluminium Association (US) **712**
Alloy Type:

German Alloy: **AlZn5Mg**

Japanese (JIS) Alloy:

ISO Alloy: **AlZn5Mg**

Mechanical Properties of Test Bars:

Temper	Casting Method	Tensile Strength (MPa)	
		Ult (min)	Ult (typ)
T1	Sand Cast	215	235
T5	Sand Cast	215	255

Yield (Mpa) (typ)	Elongation (% on 50 mm min)		Brinell Hardness (typ)
	(min)	(typ)	
150	4	5	75
180	4	5	80

Recommended Heat Treatment Method:

T1: Naturally age over 30 days. **T5:** Naturally age over 30 days or naturally age 24 hours and 180°C for 10 hours.

- Footnotes:**
- Nominal metal temperature should be obtained as rapidly as possible and maintained within $\pm 5^\circ\text{C}$ 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	
		Solidus	Liquidus
kg/m ³ x 10 ³	at 25°C W/m.K	Approx. °C	
2.77		600	650

Electrical Conductivity at 20°C	Average Coefficient of Thermal Expansion
%IACS Equal Volume	per °C
25	23.0

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
Excellent	Fair	Fair	Excellent	Fair		

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

Typical Uses / General Comments:

Castings where high mechanical properties can be obtained without heat treatment. High Resistance to atmospheric corrosion but highly susceptible to stress corrosion cracking and should not be used without a full stress relieving heat treatment. Use for stressed parts is not recommended.

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.