

Aluminium sheet / plate

AS/NZS 1734 "Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate"

Alloy	5052
Temper	H32
Ultimate tensile stress	215 MPa minimum
Yield tensile stress	160 MPa minimum
Elongation (3mm thick)	7% minimum (on gauge length of 5.65 A)

Aluminium Extrusion

AS/NZS 1734 "Aluminium and alloys – Flat sheet, coiled sheet and plate"

Alloy	6060
Temper	T5
Ultimate tensile stress	150 MPa minimum
0.2% proof stress	150 MPa minimum
Elongation	(on gauge length of 5.65 S ₀)

Aluminium Extrusion

Aluminium Association - various sources

Alloy	6061
Temper	T6
Ultimate tensile stress	310MPa minimum
0.2% proof stress	270MPa
Yield Strength	241MPa minimum
Elongation (6mm thick)	8%

Stainless Steel

Type	Sheet and Plate
Standard	ASTM-A240/A480

Type	Flat bar
Standard	ASTM-A276/A484

Type	Tube
Standard	ASTM-A269/A213

Alloy grades	T304/L, T316L
Tensile stress	545 MPa, 558 MPa
Yield stress	228 MPa, 290 MPa
Hardness	B79, B79

Stainless Steel for Spinnings

Standard AS 1449 "Wrought alloy steels – Stainless and heat-resisting steel plate, sheet and strip"

Material	304SS
Thickness	0.9mm
Finish	Bright annealed

Mild Steel

Type	Flat bars and Sections
Standard	AS 3679.1
Grade	300 MPa
Minimum yield stress	300 MPa (11 to 17mm thickness)
Minimum tensile stress	440 MPa
Minimum elongation	22% (on gauge length of 5.65S ₀)

Type	Plate
Standard	AS 3678.1
Grade	300 MPa
Minimum yield stress	300 MPa (12 to 20mm thickness)
Minimum tensile strength	430 MPa
Minimum elongation	21% (on gauge length of 5.65S ₀)

Type	Round and square bars
Standard AS	3679.1
Grade	300 MPa
Minimum yield stress	290 MPa (50 to 100mm thickness)
Minimum tensile strength	440 MPa
Minimum elongation	22% (on gauge length of 5.65S ₀)

Type	Tube
Standard AS	1751
Minimum yield stress	290 MPa (50 to 100mm thickness)
Minimum tensile strength	440 MPa
Minimum elongation	22% (on gauge length of 5.65S ₀)

Type	Hollow Bar
Standard	ISO 2938
Grade	300 MPa
Minimum yield stress	290 MPa (50 to 100mm thickness)
Minimum tensile strength	440 MPa
Minimum elongation	22%(on gauge length of 5.65S ₀)

Welding

Types	Gas metal-arc welding (GMAW, or MIG)
Gas	Tungsten-arc welding (GTAW or TIG)
Standards	AS/NZS 1554.1 "Structural steel welding - welding of steel structures" AS 1665 "Welding of aluminium structures" AS/NZS 1554.6 "Structural steel welding - welding stainless steel for structural purposes"

Castings

Cast Aluminium (gravity die casting)

AS 1874 "Aluminium and alloys - ingots and castings"

Alloy	CA 401
CHEMICAL COMPOSITION	
Silicon	12.0 - 13.0%
Iron	0.40%
Copper	0.10%
Manganese	0.10%
Magnesium	0.05%
Chromium	-
Nickel	0.05%
Zinc	0.10%
Tin	-
Lead	-
Titanium	0.20%
Other elements (each)	0.05
Other elements (total)	0.15
Aluminium	Remainder

Cast Aluminium (sand casting)

AS 1874 "Aluminium and alloys - ingots and castings"

Alloy	DA 601
CHEMICAL COMPOSITION	
Silicon	6.5 - 7.5%
Iron	0.15%
Copper	0.015%
Manganese	0.03%
Magnesium	0.45 - 0.7%
Chromium	-
Nickel	-
Zinc	0.35%
Tin	-
Lead	-
Titanium	0.25%
Other elements (each)	0.05%
Other elements (total)	0.15%
Aluminium	Remainder

MECHANICAL PROPERTIES OF TEST BARS

Temper	T1
Tensile strength	130 MPa minimum
Elongation on 50 mm	3% minimum

PHYSICAL PROPERTIES

Thermal conductivity at 25°C	151 W/m.K
Density	2.68 kg/m ³ x 10 ³
Average coefficient of thermal expansion	21.4 x 10 ³ per °C

MECHANICAL PROPERTIES OF TEST BARS

Temper	F1
Tensile Strength	190 MPa min.
Elongation on 50mm	7% min.

PHYSICAL PROPERTIES

Thermal conductivity at 25°C	142 W/m.k
Density	2.65/m ³ x 10 ³
Average coefficient of thermal expansion	20.8 x 10 ⁻⁶ per °C

Cast Aluminium (high pressure die casting)

AS 1874 "Aluminium and alloys - ingots and castings"

Alloy	ADC 12
CHEMICAL COMPOSITION	
Silicon (Si)	9.6 - 12.0%
Iron (Fe)	0.9%
Copper (Cu)	1.5 - 3.5%
Manganese (Mn)	0.5%
Magnesium (Mg)	0.3%
Chromium (Cr)	0%
Nickel (Ni)	0.5%
Zinc (Zn)	1.0%
Tin (Sn)	0.3%
Lead (Pb)	0%
Titanium	0%
Other elements (each)	0%
Other elements (total)	-
Aluminium	Remainder

Fixings

Type	Metric socket head cap screws
Threads/ standard	ANSI BI, 13M, ISO 262
Property class / standard	12.9-ISO 898/1
Material	SS304/ A2, ASTM 574M, DIN 512
Hardness	Rc 38 min
Tensile strength	1170 MPa thru M16 size
Yield stress	1035 MPa thru M16 size
Thread class	4g, 6g

Type	Metric hexagon set screws
Property / class standard	4.6-AS 111/AS 4291.1
Material / standard	304SS – ASTM 304L, 304, 304LN 316SS – ASTM 316L, 316
Tensile strength	400 MPa minimum

material specifications

CASTINGS | FIXINGS

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Yield stress	240 MPa minimum
Proof load stress	225 MPa minimum
Finish	Black Zinc plated (for Jarrah battens) Natural finish (otherwise)

Powder coating

Brand	Dulux Powder Coating by Orica
Product type	TGIC-free powder coating
Performance standards	AS 3715 "Metal finishing - Thermoset powder coating for architectural applications of aluminium and aluminium alloys
Colour	As per order
Pre-treatment	Acid etch; water wash; yellow chromate conversion; water wash; dry
Thickness	50-80 um average (to significant surfaces)

Wood-plastic Composite (WPC)

Vista is a sustainable timber composite product:

- ▶ Made from 100% post-consumer recycled battens
- ▶ 100% recyclable
- ▶ No oils or stains needed to maintain finish

Hardwood

Species	Eucalyptus marginata
Green Density (GD)	1170 kg/m
Air Dry Density (ADD)	820 kg/m
Durability	Class 2 (heartwood)
Strength group	SD4
Modulus of rupture (ADD)	112 MPa
Modulus of elasticity (ADD)	13 GPa
Maximum crushing strength (ADD)	61 MPa
Impact (Izod value) J (ADD)	10
Hardness (Janka) (ADD)	8.5 kN

Timber Plywood

Part type	Moulded plywood
Standards	AS 2270 Plywood and blockboard for interior use
Thickness	12mm nominal
Face veneer grade	Veneer quality (Jarrah)
Back veneer grade	C

EARLY FIRE HAZARD INDEX

Ignitability index (0-20)	14
Spread of flame index (0-10)	8
Heat evolved index (0-10)	9
Smoke developed index (0-10)	2