



# ALUMINIUM PRODUCT CATALOGUE



**Austral Wright** Metals

## ALUMINIUM COIL

Size mm	Finish	Alloy-Temper	
		5005-H34	5052-H32
0.55 x 1220	Violetone White	50098176	
0.6 x 900	Mill	50001740	
0.6 x 1200	Mill	50011325	
1.2 x 1200	Mill	50024459	50024462
1.6 x 900	Mill	50011159	
1.6 x 1200	Mill	50024460	50024073
2 x 900	Mill	50001833	
2 x 1200	Mill	50011326	50011163
2 x 1500	Mill	50110553	
2.5 x 900	Mill	50037329	
2.5 x 1200		50024466	
3 x 900	Mill	50032955	50104108
3 x 1200	Mill	50107517	50105221

Refer to your local Sales Office for availability of current stock and other sizes which are not listed.

## ALUMINIUM SHEET AND PLATE

Size mm	Finish	Approx kg/ sheet	Alloy – Temper						
			1100- H25	5005- H34	5052- H32	5251- H32	5251- H34	5083- H116	5083- H321
0.5 x 900 x 1800	Mill	2.2		50024494					
0.6 x 900 x 1800	Mill	2.6		50063267					
0.6 x 1200 x 2400	Mill	4.7		50001738					
0.8 x 900 x 1800	Mill	3.5		50024495			50001769		
0.8 x 1200 x 2400	Mill	6.2		50001741					
0.8 x 1219 x 2489	Violetone – ribbed	6.6		50111930					
0.8 x 1219 x 2489	Violetone	6.6		50111931					
1 x 900 x 1800	Mill	4.4		50024646					
1 x 1200 x 2400	Mil	7.8		50001742	50033802				
	P <sub>E</sub> 1-side			50001743	50065547				
	P <sub>E</sub> 2-side			50103788					
1.2 x 900 x 1800	Mill	5.3		50001744					
1.2 x 1200 x 2400	Mill	9.3		50001787	50001761				
	P <sub>E</sub> 1-side			50010971	50025344				
	P <sub>E</sub> 80micron				50065548				
1.2 x 1200 x 3600	Mill	14.0		50110380					
	P <sub>E</sub> 1-side			50109003					
1.6 x 900 x 1800	Mill	7.0		50024829					
1.6 x 900 x 2400	Mill	9.3		50098819					
1.6 x 1200 x 2400	Mill	12.5	50096568	50001789	50001762				
	P <sub>E</sub> 1-side			50001788	50023810				
	P <sub>E</sub> 2-side				50103790				
1.6 x 1200 x 3000	Mill	15.6		50104767					
	P <sub>E</sub> 1-side			50037109					
1.6 x 1200 x 3600	Mill	18.7		50099525					
1.6 x 1500 x 3000	Mill	19.5		50024909					
1.6 x 1500 x 3600	Mill	23.4		50001792					

Refer to your local Sales Office for availability of current stock and other sizes which are not listed.

ALUMINIUM SHEET AND PLATE

Size mm	Finish	Approx kg/ sheet	Alloy – Temper						
			1100- H25	5005- H34	5052- H32	5251- H32	5251- H34	5083- H116	5083- H321
2 x 900 x 1800	Mill	8.8		50001748					
2 x 1200 x 1800	Mill	11.7		50011532					
2 x 1200 x 2400	Mill	15.6		50001790	50001764				
	P <sub>E</sub> 1-side			50001775	50023811				
	P <sub>E</sub> 2-side			50096916	50103791				
2 x 1200 x 3000	Mill	19.5		50011534					
2 x 1200 x 3600	Mill	23.3		50109630					
2 x 1200 x 6000	Mill	38.9		50032980					
2 x 1500 x 2400		19.5		50011558					
2 x 1500 x 3000	Mill	24.3		50011446					
2 x 1500 x 3600	Mill	29.2		50001774					
2.5 x 900 x 1800	Mill	11.0		50103910					
2.5 x 1200 x 1800	Mill	14.6		50011529					
	P <sub>E</sub> 1-side			50108853					
2.5 x 1200 x 2400	Mill	19.5		50001776	50001773		50011327		
	P <sub>E</sub> 1-side			50001777					
	P <sub>E</sub> 2-side				50103792				
	P <sub>E</sub> 80micron								
	Paper Interleaved						50104647		
2.5 x 1200 x 3000	Mill	24.3		50032836					
2.5 x 1500 x 2400	Mill	24.3			5011634				
2.5 x 1500 x 3000	Mill	30.4		50024469	50066012				
2.5 x 1500 x 3600	P <sub>E</sub> 1-side	36.5		50037442					

Refer to your local Sales Office for availability of current stock and other sizes which are not listed.

ALUMINIUM SHEET AND PLATE

Size mm	Finish	Approx kg/ sheet	Alloy – Temper						
			1100-H25	5005-H34	5052-H32	5251-H32	5251-H34	5083-H16	5083-H321
3 x 900 x 1800	Mill	13.1		50001751					
3 x 900 x 2400	Mill	17.5		50011530	50104119				
3 x 1200 x 1800	P <sub>E</sub> 1-side	17.5		50011533					
				50024804					
3 x 1200 x 2400	Mill	23.4	50001791	50001778	50001766				
	P <sub>E</sub> 1-side			50001779					
	P <sub>E</sub> 2-side			50037303					
	P <sub>E</sub> 80micron				50024487				
3 x 1200 x 3000	Mill	29.2		50095930					
	P <sub>E</sub> 1-side			50037180					
3 x 1200 x 3600	Mill	35.0		50104499					
3 x 1500 x 2400	Mill	29.2		50011535	50109148				
	P <sub>E</sub> 1-side								
3 x 1500 x 3000	Mill	36.5		50011635					
	P <sub>E</sub> 1-side			50110418					
4 x 1200 x 2400	Mill	31		50001753					
5 x 1200 x 2400	Mill	39		50001754					
6 x 1200 x 2400	Mill	46		50001758					50097836
10 x 1200 x 2400	Mill	77							50001772
12 x 1200 x 2400	Mill	92						50001797	

Refer to your local Sales Office for availability of current stock and other sizes which are not listed.

ALUMINIUM TREADPLATE

Size mm	Approximate kg/ sheet	Finish	Alloy-Temper		
			5052-O	5251-O	3003 H22
1.6 x 1200 x 2400	13	Five Bar	50001782	50001780	
2 x 1200 x 2400	17	Five Bar	50001784		
2.5 x 1200 x 2400	21	Five Bar	50001785	50001781	
3 x 1200 x 2400	27	Five Bar	50001783	50001756	
5 x 1200 x 2400	41	Five Bar	50001786	50096351	
6 x 1200 x 2400	52	Five Bar		50001757	
1.6 x 1200 x 2400	13	Propellor			50010967
3.0 x 1200 x 2400	24	Propellor			50010968



NOMINAL COMPOSITION

Alloy UNS	Alloy AA	Description	Element, weight%				
			Mg	Mn	Cr	Cu	Al
A91100	1100	99.00% Aluminium – Low Strength					Rem
A91200	1200	99.00% Aluminium – Low Strength					Rem
A93003	3003	Manganese Aluminium – Medium Strength		1.2		0.12	Rem
A95005	5005	Magnesium Aluminium – Medium Strength	0.8				Rem
A95052	5052	Magnesium Aluminium – Medium Strength	2.5				Rem
A95251	5251	Magnesium Aluminium – Medium Strength	2.0	0.35			Rem
A95083	5083	Magnesium Aluminium – High Strength	4.5	0.7	0.15		Rem



ALLOY CHARACTERISTICS

Alloy	Standard Product				Corrosiion Resistance	Machining	Anodising	Brazing
	Coil	Sheet	Plate	Treadplate				
1100	X	X			A	D	B	A
1200	X	X			A	C	B	A
3003	X	X	X		A	C	B	A
5005	X	X			A	C	B	B
5052	X	X	X	X	A	B	C	C
5251	X	X		X	A	B	C	C
5083			X		A	B	C	D



APPLICATIONS

Alloy	Applications
1100	Spinning, holloware, food handling & storage, general sheet metal work.
1200	Spinning, holloware, and general sheet metal work.
3003	Chemical equipment and sheet metal work.
5005	Architectural, sheet metal work, high strength foil.
5052	Boats, dinghies and other applications requiring resistance to marine corrosion.
5251	Boats, dinghies and other applications requiring resistance to marine corrosion.
5083	Marine, pressure vessels, cryogenics, and structure. Not to be used above 65°C.

Relative ratings in decreasing order of merit : A, B, C, D.  
Data from Aluminium Development Council of Australia.



## ALUMINIUM 1100

UNS A91100

## PRODUCT DATA SHEET

Aluminium Alloys

Aluminium alloy 1100 contains a minimum of 99.00% aluminium, and is sometimes known as ‘commercially pure aluminium’. It has excellent electrical conductivity, good formability and high resistance to corrosion, and is used where high strength is not needed. It has the low density and excellent thermal conductivity common to all aluminium alloys.

**Typical Applications** General sheet metal work where moderate strength is adequate: lightly stressed panels, architectural flashings, name plates, heat exchangers, food and chemical handling and storage equipment, drawn or spun holloware, light reflectors, welded assemblies.

CHEMICAL COMPOSITION AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Element	%	Element	%
	Aluminium	99.00% min	Manganese	0.05 max
	Copper	0.05 – 0.20	Zinc	0.10 max
	Silicon + Iron	0.95 max	Others, each	0.05 max
			Others, total	0.15 max

SPECIFIED MECHANICAL PROPERTIES AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Temper	0.2% Proof Stress, MPa min†	Tensile Strength, MPa	Elongation % min‡
	O (annealed)	25	75 – 105	15 – 26
	H12	75	95 – 130	3 – 10
	H14	95	110 – 145	1 – 8
	H24	95	110 max	1 – 8

† For information only, proof stress is not specified or measured except by prior agreement

‡ Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

### Equivalent specifications:

USA: AA1100; Japan: JIS A110P; France: NF 1100; ISO AI 99.0 Cu.

The properties in this data sheet meet Australian/New Zealand Standard AS/NZS 1734:1997 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate (equivalent to BS EN 573-1). The material also meets other national standards.

Temper	Condition		
O	Annealed (soft)		
H1x	Strain hardened only		
H2x	Strain hardened then partially annealed		
H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)		
Second digit: (x)			
8	Full hard	4	Half hard
6	Three quarter hard	2	Quarter hard

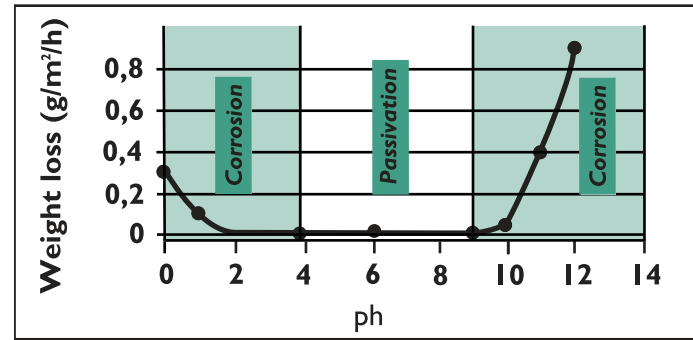
**Description** Aluminium 1100 is commercial purity aluminium with a controlled content of copper. It can be hardened by cold work: it is not heat treatable to higher strength. It has excellent ductility, up to 30% in annealed material of 1.3 to 6.0 mm thickness. The ductility is more limited in the H14 and H24 tempers.

**Austral Wright Metals** can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

**Pressure Vessels** AS1210 Pressure Vessels prequalifies alloy 1100 for pressure service for temperatures up to 200°C in the O, H12, H14 & H112 tempers.

The technical advice and recommendations made in this Product Data Sheet should not be relied or acted upon without conducting your own further investigations, including corrosion exposure tests where needed. Please consult current editions of standards for design properties. Austral Wright Metals assumes no liability in connection with the information in this Product Data Sheet.

**Corrosion Resistance** The ‘1xxx’ series alloys have the best resistance to general corrosion of all the aluminium alloys. Resistance is excellent in aqueous solutions in the pH range 4 – 9.



The corrosion resistance of aluminium alloys relies on a protective surface oxide film, which when damaged is readily repaired by the rapid reaction between aluminium and oxygen. However, the high reactivity of the base metal can give rapid corrosion if the film cannot be repaired, so aluminium alloys are not suitable for use with reducing media. Alloy 1100 can be anodised to improve the corrosion resistance by thickening the protective surface film.

Since aluminium is a reactive metal, it may corrode more quickly when in electrical contact with most other metals. The prediction of galvanic corrosion is complex; please consult Austral Wright Metals for specific advice.

### Physical Properties

Property	at	value	unit	Property	at	value	unit
Density	20°C	2,710	kg/m³	Mean Coefficient of Expansion	20°C	23.6	X 10 <sup>-6</sup> / °C
Weight	20°C	2.71 x thickness in mm		Thermal Conductivity	25°C	222	W / m . °C
Melting Range		643-657	°C	Electrical Resistivity	20°C	0.292	micro-ohm . m
Modulus of Elasticity				Electrical Conductivity			
Tension	20°C	69	GPa	O Temper (annealed)	20°C	59	%IACS
Torsion	20°C	26	GPa	H18 Temper	20°C	57	%IACS

**Fabrication** Aluminium 1100 is very readily cold formable in the annealed condition, as it is ductile. Forming loads and tool & press wear are generally less than with carbon steel. For piercing and blanking the punch to die clearance should be about 5% of the thickness per side for temper O, 6% for H12 & H14.

Recommended minimum bend radii for cold forming at 90° to the rolling direction.

Temper	0.4 mm	0.8 mm	1.6 mm	3.0 mm
O	0 t	0 t	0 t	0 t
H12	0 t	0 t	0 t	t
H14	0 t	0 t	0 t	1 t

t = material thickness

Characteristics			
Corrosion Resistance	Very good	Anodising	Very good
Formability	Excellent	Machinability	Poor
Weldability	Excellent	Brazeability	Excellent

**Welding** Alloy 1100 is readily welded by the TIG and MIG processes. Commonly used filler alloys are 4043 and 1050. 4043 gives a greater weld strength, but if the assembly is to be anodised, 1050 filler metal will give a closer colour match.

1100 may also be gas welded or resistance welded, but the resulting joints are not as strong or as corrosion resistant as the inert gas welded joints. Gas welding could result in excessive heat distortion and thinner gauges may burn through. Aluminium must be very dry & clean to avoid contamination & porosity of the weld. It is essential that all traces of flux used in welding or brazing are removed by scrubbing with hot water.

**Heat Treatment** Alloy 1100 is annealed at 350°C, time at temperature and cooling rate are unimportant. Stress relief is rarely required, but can be carried out at about 220°C. If loss of strength is of concern, stress relief tests should be conducted.

**ALUMINIUM 3003**  
**UNS A93003****PRODUCT DATA SHEET**  
**Aluminium Alloys**

Aluminium alloy 3003 contains about 1.25% manganese and 0.1% copper, which increase the strength above the 1000 series aluminium grades. It is a medium strength alloy, hardenable only by cold work – it is not heat treatable. It has good weldability, formability and corrosion resistance.

**Typical Applications** General sheet metal work requiring greater strength than is provided by 1000 series alloys; profiled building sheet (roofing and siding); insulation panels; holloware; food and chemical handling and storage equipment.

CHEMICAL COMPOSITION AS/NZS 1734: 1997 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate..	Element	%	Element	%
	Aluminium	Remainder	Silicon	0.6 max
	Manganese	1.0 – 1.5	Iron	0.7 max
	Copper	0.05 – 0.20	Zinc	0.10 max
	Silicon	0.6 max	Others, each	0.05 max
	Iron	0.7 max	Others, total	0.15 max

SPECIFIED MECHANICAL PROPERTIES AS/NZS 1734:1997 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Temper	0.2% Proof Stress, MPa min†	Tensile Strength, MPa	Elongation % min‡
	O (annealed)	35	95-130	14-21%
	H12	80	115-160	3-8%
	H14	115	135-180	1-8%
	H16	145	165-205	1-4%
	H18	165	185 min	1-4%

† For information only, proof stress is not specified or measured except by prior agreement

‡ Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

KEY TO TEMPER	Temper	Condition		
	O	Annealed (soft)		
	H1x	Strain hardened only		
	H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)		
	Second digit: (x)			
	8	Full hard	4	Half hard
	6	Three quarter hard	2	Quarter hard

**Description** Aluminium 3003 is a general purpose alloy with medium strength and corrosion resistance. It is not recommended for decorative applications: anodising should be for surface protection only. Special qualities are available for porcelain enamelling, deep drawing & spinning; general purpose qualities should not be used for these operations.

**Austral Wright Metals** can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

**Equivalent Designations:** Germany: DIN AIMnCu; Europe: EN AW-3003; Japan: JIS A3003P; France: NF A 3003 (formerly A-M1).

**Corrosion Resistance** 3003 has very high resistance to general corrosion, similar to the 1000 series aluminium alloys. 3003 can be used in marine atmospheres and in seawater.

Since aluminium is a reactive metal, it may corrode more quickly when in electrical contact with most other metals. The prediction of galvanic corrosion is complex; please consult Austral Wright Metals for specific advice.

**Pressure Vessels** AS1210 Pressure Vessels and AS4041 Pressure Piping prequalify the alloy for pressure service for temperatures up to 200°C.

**Physical Properties**

Property	at	value	unit	Property	at	value	unit
Density	20°C	2,730	kg/m³	Melting Range		643-654	°C
Modulus of Elasticity				Mean Coefficient of Expansion	20°C	21.5	x 10 <sup>-6</sup> / °C
Tension	20°C	68.9	GPa	Thermal Conductivity	25°C	193	W / m . °C
Shear	20°C	25	GPa	Electrical Resistivity	20°C	0.034	micro-ohm . m
Poisson's ratio	20°C	0.33		Electrical Conductivity	20°C	50	% IACS

**Fabrication** Aluminium 3003 is not generally hot worked. It is very readily cold formable in the annealed condition, as it is ductile. Forming loads and tool & press wear are generally less than with carbon steel. For piercing and blanking the punch to die clearance should be about 7% of the thickness per side for the H32 & H34 tempers. Sharp tools are required.

**Bend Radii** Minimum recommended internal bend radii for 90° cold bends at right angles to the rolling direction (good way).

t = Thickness		Thickness, mm			
	Temper	0.4	0.8	1.6	3.2
	O	0	0	0	0
	H12, H22	0	0	0	0.5 t
	H14, H24	0	0	0	1 t
	H16, H26	0.5 t	1 t	1 t	1.5 t
	H18	1 t	1.5 t	2 t	2.5 t

**Welding** 3003 is readily welded by the TIG and MIG processes. Commonly used filler alloys are 4043 and 1100. 4043 gives greater weld strength, but if the assembly is to be anodised, 1100 filler metal will give a closer colour match. 3003 may also be gas welded or resistance welded, but the resulting joints are not as strong or as corrosion resistant as the inert gas welded joints. Gas welding could give excessive heat distortion and thinner gauges may burn through. All traces of welding or brazing flux must be removed by scrubbing with hot water upon completion.

**Heat Treatment** Anneal at 415°C ± 5°C, until all parts have reached the annealing temperature. Stress relief is rarely required, but can be carried out at about 220°C. If loss of strength is of concern, stress relief tests should be conducted.

ASTM PRODUCT SPECIFICATIONS	Specification	Title
	B209	Aluminium and Aluminium Alloy Sheet and Plate
	B210	Aluminium and Aluminium Alloy Drawn Seamless Tubes
	B483	Aluminium and Aluminium Alloy Drawn Tubes for General Purpose Applications

CHARACTERISTICS	Corrosion Resistance	Very Good	Machinability	Poor (10%)
	Anodising	Very Good*	Weldability	Very Good
	Formability	Very Good	Brazeability	Excellent

\* (for surface protection only)

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**ALUMINIUM 5005**  
**UNS A95005**

**PRODUCT DATA SHEET**  
**Aluminium Alloys**

Aluminium alloy 5005 contains nominally 0.8% magnesium. It has medium strength, good weldability, and good corrosion resistance in marine atmospheres. It also has the low density and excellent thermal conductivity common to all aluminium alloys. It is the most commonly used grade of aluminium in sheet and plate form.

**Typical Applications** Architectural applications, general sheet metal work, high strength foil.

CHEMICAL COMPOSITION AS/NZS 1734 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate.	Element	%	Element	%
	Aluminium	Balance	Manganese	0.20 max
	Magnesium	0.50 – 1.10	Chromium	0.10 max
	Silicon	0.30 max	Zinc	0.25 max
	Iron	0.07 max	Others, each	0.05 max
	Copper	0.20 max	Others, total	0.15 max

SPECIFIED MECHANICAL PROPERTIES AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Temper	0.2% Proof Stress, MPa min†	Tensile Strength, MPa	Elongation % min‡
	O (annealed)	35	105 – 145	12 – 22
	H12	95	125 – 165	2 – 8
	H14	115	145 – 185	1 – 6
	H16	135	165 – 205	1 – 3
	H18	-	> 185	1 – 3
	H32	85	115 – 160	3 – 9
	H34	105	135 – 180	2 – 7
	H36	125	160 – 200	1 – 4
	H38	-	> 180	1 – 4

† For information only, proof stress is not specified or measured except by prior agreement

‡ Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

KEY TO TEMPER	Temper	Condition		
	O	Annealed (soft)		
	H1x	Strain hardened only		
	H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)		
	Second digit: (x)			
	8	Full hard	4	Half hard
	6	Three quarter hard	2	Quarter hard

**Description** Aluminium 5005 is a lean aluminium magnesium alloy which can be hardened by cold work: it is not heat treatable to higher strength.

**Austral Wright Metals** can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

**Corrosion Resistance** 5005 has the same high resistance to general corrosion as other non heat treatable aluminium alloys. It also has the higher resistance to slightly alkaline conditions common to the 5000 series alloys. The atmospheric corrosion resistance of 5005 is similar to that of 3003. When anodised to improve corrosion resistance, the film on 5005 is clearer than on 3003, and gives better colour match with 6063 architectural extrusions. The corrosion resistance of aluminium alloys relies on a protective surface oxide film, which when damaged is readily repaired by the rapid reaction between aluminium and oxygen. However, the high reactivity of the base metal can give

rapid corrosion if the film cannot be repaired, so aluminium alloys are not suitable for use with reducing media.

Since aluminium is a reactive metal, it may corrode more quickly when in electrical contact with most other metals. The prediction of galvanic corrosion is complex, please consult Austral Wright Metals for specific advice.

**Pressure Vessels** AS1210 Pressure Vessels and AS4041 Pressure Piping do not prequalify the alloy for pressure service.

**Physical Properties**

Property	at	value	unit	Property	at	value	Unit
Density	20°C	2,700	kg/m³	Specific Heat	20°C	900	J/kg . °C
Melting Range		632 - 655	°C	Mean Coefficient of Expansion	20°C	23.75	x 10 <sup>-6</sup> / °C
Modulus of Elasticity				Thermal Conductivity	25°C	201	W / m . °C
Tension	20°C	68.2	GPa	Electrical Resistivity	20°C	0.033	micro-ohm . m
Torsion	20°C	25.9	GPa	Electrical Conductivity			
Compression	20°C	69.5	GPa	Equal volume	20°C	52	% IACS
				Equal weight	20°C	172	% IACS

**Fabrication** Aluminium 5005 is not generally hot worked. It is readily cold formable in the annealed condition, as it is a relatively soft and ductile alloy. Forming loads and tool & press wear are generally less than with carbon steel. For piercing and blanking the punch to die clearance should be about 6% of the thickness per side for the H32 & H34 tempers. Sharp tools are required.

Indicative minimum bend radii for 90° cold forming for various thickness, t mm	Temper	Up to 1.6 mm	3.2 mm	5 mm	10 mm	12.5 mm
	H32	0 t	t	1 t	1 t	2 t
	H34	0 t	1 t	1 t	2 t	2 t

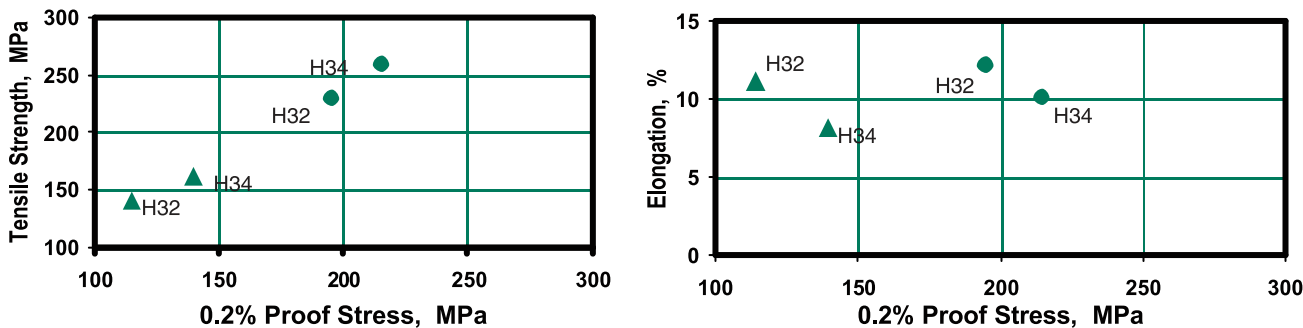
**Machinability** 5005 is readily machinable by conventional methods. It should be machined at high speed with copious lubrication to avoid thermal distortion of the workpiece. Sharp tools are essential. High speed steel or tungsten carbide may be used. Cuts should be deep and continuous, with high cutting speeds. Woodworking machinery may be suitable for short runs.

**Welding** 5005 is readily weldable by standard techniques. It is frequently welded with GTAW (TIG) or GMAW (MIG). Aluminium must be very dry & clean to avoid contamination & porosity of the weld. Filler metals 1100, 4043 or 4047 are used. 4043 is the most crack tolerant. Best colour match is obtained with 1188 filler metal. Shielding gas must be dry & free of hydrogen.

**Heat Treatment** Aluminium 5005 is annealed at 345°C, time at temperature and cooling rate are unimportant. Stress relief is rarely required, but can be carried out at about 220°C. If loss of strength is of concern, stress relief tests should be conducted.

ASTM PRODUCT SPECIFICATIONS	Specification	Title
	B209	Aluminium and Aluminium Alloy Sheet and Plate
	B316	Aluminium and Aluminium Alloy Rivet & Cold Heading Wire & Rods
	B210	Aluminium and Aluminium Alloy Drawn Seamless Tubes
	B483	Aluminium and Aluminium Alloy Drawn Tubes for General Purpose Applications

Typical strength and ductility of alloys 5005 & 5052 in the H32 & H34 tempers



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**ALUMINIUM 5052**  
**UNS A95052**

**PRODUCT DATA SHEET**  
**Aluminium Alloys**

Aluminium alloy 5052 contains nominally 2.5% magnesium and 0.25% chromium. It has good workability, medium static strength, high fatigue strength, good weldability, and very good corrosion resistance, especially in marine atmospheres. It also has the low density and excellent thermal conductivity common to all aluminium alloys. It is commonly used in sheet, plate and tube form.

**Typical Applications** Architecture, general sheet metal work, heat exchangers.

CHEMICAL COMPOSITION AS/NZS 1734 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate.	Element	%	Element	%
	Aluminium	Balance	Copper	0.10 max
	Magnesium	2.2 – 2.8	Manganese	0.10 max
	Chromium	0.15 – 0.35	Zinc	0.10 max
	Silicon	0.25 max	Others, each	0.05 max
	Iron	0.40 max	Others, total	0.15 max

SPECIFIED MECHANICAL PROPERTIES AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Temper	0.2% Proof Stress, MPa min†	Tensile Strength, MPa	Elongation % min‡
	O (annealed)	65	170 – 215	14 – 20
	H32	160	215 – 265	4 – 10
	H34	180	235 – 285	3 – 8
	H36	200	255 – 305	2 – 4
	H38	220	270 min	2 – 4

† For information only, proof stress is not specified or measured except by prior agreement

‡ Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

KEY TO TEMPERS	Temper	Condition		
	O	Annealed (soft)		
	H1x	Strain hardened only		
	H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)		
	Second digit: (x)			
	8	Full hard	4	Half hard
	6	Three quarter hard	2	Quarter hard

**Description** Aluminium 5052 is an aluminium magnesium alloy which can be hardened by cold work: it is not heat treatable to higher strength. It is about mid way through the series of aluminium magnesium alloys for alloying content and strength. It has excellent fatigue properties, with an endurance limit of 115 MPa in the H32 temper and 125 MPa in the H34 temper.

**Austral Wright Metals** can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

**Corrosion Resistance** 5052 has the same high resistance to general corrosion as other non heat treatable aluminium alloys. It also has the higher resistance to slightly alkaline conditions common to the 5000 series alloys. The resistance of 5052 to corrosion in marine atmospheres is excellent, exceeding that of 5005, hence the frequent use of 5052 in marine applications.

The corrosion resistance of aluminium alloys relies on a protective surface oxide film, which when damaged is readily repaired by the rapid reaction between aluminium and oxygen. However, the high reactivity of the base metal can give rapid corrosion if the film cannot be repaired, so aluminium alloys are not suitable for use with reducing media. 5052 can be anodised to improve the corrosion resistance by thickening the protective surface film.

The technical advice and recommendations made in this Product Data Sheet should not be relied or acted upon without conducting your own further investigations, including corrosion exposure tests where needed. Please consult current editions of standards for design properties.

Austral Wright Metals assumes no liability in connection with the information in this Product Data Sheet.

Since aluminium is a reactive metal, it may corrode more quickly when in electrical contact with most other metals. The prediction of galvanic corrosion is complex; please consult Austral Wright Metals for specific advice.

**Pressure Vessels** AS1210 Pressure Vessels and AS4041 Pressure Piping prequalify the alloy for pressure service for temperatures up to 200°C.

**Physical Properties**

Property	at	value	unit	Property	at	value	Unit
Density	20°C	2,680	kg/m³	Mean Coefficient of Expansion	20°C	23.75	x 10 <sup>-6</sup> / °C
Melting Range		607 – 650	°C	Thermal Conductivity	25°C	138	W / m . °C
Modulus of Elasticity				Electrical Resistivity	20°C	0.050	micro-ohm . m
Tension	20°C	69.3	GPa	Electrical Conductivity			
Torsion	20°C	25.9	GPa	Equal volume	20°C	35	% IACS
Compression	20°C	70.7	GPa	Equal weight	20°C	116	% IACS
				Equal weight	20°C	172	% IACS

**Fabrication** Aluminium 5052 is not generally hot worked. It is very readily cold formable in the annealed condition, as it is ductile. Forming loads and tool & press wear are generally less than with carbon steel. For piercing and blanking the punch to die clearance should be about 7% of the thickness per side for the H32 & H34 tempers. Sharp tools are required.

Indicative minimum bend radii for 90° cold forming for various thickness, t mm	Temper	0.4	0.8	1.6	3.2	4.8	6.4	9.5	13
	H32	0 t	0 t	1 t	1 t	1 t	1 t	1 t	2 t
	H34	0 t	1 t	1 t	2 t	2 t	2 t	2 t	3 t

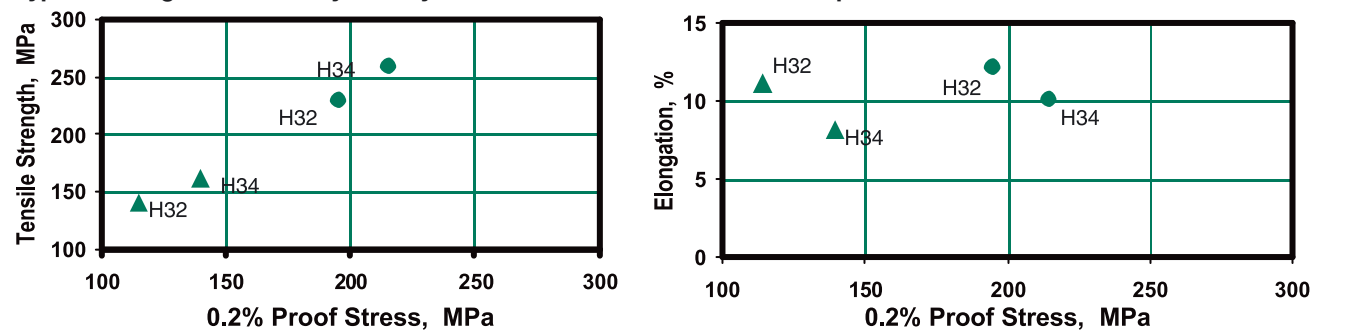
**Machinability** 5052 is readily machinable by conventional methods. It should be machined at high speed with copious lubrication to avoid thermal distortion of the workpiece. Sharp tools are essential. High speed steel or tungsten carbide may be used. Cuts should be deep and continuous, with high cutting speeds. Woodworking machinery may be suitable for short runs.

**Welding** 5052 is readily weldable by standard techniques. It is frequently welded with GTAW (TIG) or GMAW (MIG). Aluminium must be very dry & clean to avoid contamination & porosity of the weld. Filler metals 1100, 4043 or 4047 are used. 4043 is the most crack tolerant. Best colour match is obtained with 1188 filler metal. Shielding gas must be dry & free of hydrogen.

**Heat Treatment** Aluminium 5052 is annealed at 345°C, time at temperature and cooling rate are unimportant. Stress relief is rarely required, but can be carried out at about 220°C. If loss of strength is of concern, stress relief tests should be conducted.

ASTM PRODUCT SPECIFICATIONS	Specification	Title
	B209	Aluminium and Aluminium Alloy Sheet and Plate
	B316	Aluminium and Aluminium Alloy Rivet & Cold Heading Wire & Rods
	B210	Aluminium and Aluminium Alloy Drawn Seamless Tubes
	B483	Aluminium and Aluminium Alloy Drawn Tubes for General Purpose Applications

**Typical strength and ductility of alloys 5005 & 5052 in the H32 & H34 tempers**





**ALUMINIUM 5251**

Aluminium alloy 5251 contains nominally 2.0% magnesium and 0.30% manganese. It has good workability, medium static strength, high fatigue strength, good weldability, and very good corrosion resistance, especially in marine atmospheres. It also has the low density and excellent thermal conductivity common to all aluminium alloys. It is commonly used in sheet, plate and tube form.

**Typical Applications**    Architecture, general sheet metal work, small boats.

CHEMICAL COMPOSITION AS/NZS 1734 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate.	Element	%	Element	%
	Aluminium	Balance	Silicon	0.40 max
	Magnesium	1.7 – 2.4	Titanium	0.15 max
	Manganese	0.10 – 0.50	Zinc	0.15 max
	Chromium	0.15 max		
	Copper	0.15 max	Others, each	0.05 max
	Iron	0.50 max	Others, total	0.15 max

SPECIFIED MECHANICAL PROPERTIES AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Temper	0.2% Proof Stress, MPa min†	Tensile Strength, MPa	Elongation % min‡
	O (annealed)	65	170 – 215	15 – 20
	H32	130	200 – 255	4 – 11
	H34	180	230 – 275	3 – 8
	H36	210	250 – 295	3 – 4
	H38	225	260 min	3 – 4

† For information only, proof stress is not specified or measured except by prior agreement

‡ Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

KEY TO TEMPER	Temper	Condition		
	O	Annealed (soft)		
	H1x	Strain hardened only		
	H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)		
	Second digit: (x)			
	8	Full hard	4	Half hard
	6	Three quarter hard	2	Quarter hard

**Description**    Aluminium 5251 is an aluminium magnesium manganese alloy which can be hardened by cold work: it is not heat treatable to higher strength. It is about mid way through the series of aluminium magnesium alloys for alloying content and strength, which is very similar to alloy 5052.

**Austral Wright Metals** can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

**Corrosion Resistance**    5251 has the same high resistance to general corrosion as other non heat treatable aluminium alloys. It also has the higher resistance to slightly alkaline conditions common to the 5000 series alloys. The resistance of 5251 to corrosion in marine atmospheres is excellent, exceeding that of 5005, hence the frequent use of 5251 in marine applications such as small boats and dinghies. The corrosion resistance of aluminium alloys relies on a protective surface oxide film, which when damaged is readily repaired by the rapid reaction between aluminium and oxygen. However, the high reactivity of the base metal can give rapid corrosion if the film cannot be repaired, so aluminium alloys are not suitable for use with reducing media. 5251 can be anodised to improve the corrosion resistance by thickening the protective surface film.

The technical advice and recommendations made in this Product Data Sheet should not be relied or acted upon without conducting your own further investigations, including corrosion exposure tests where needed. Please consult current editions of standards for design properties. Austral Wright Metals assumes no liability in connection with the information in this Product Data Sheet.

Since aluminium is a reactive metal, it may corrode more quickly when in electrical contact with most other metals. The prediction of galvanic corrosion is complex; please consult Austral Wright Metals for specific advice.

**Pressure Vessels**    AS1210 Pressure Vessels and AS4041 Pressure Piping prequalify the alloy for pressure service for temperatures up to 200°C.

**Physical Properties**

Property	at	value	unit	Property	at	value	Unit
Density	20°C	2,680	Kg/m³	Mean Coefficient of Expansion	20°C	23.75	X 10 <sup>-6</sup> / °C
Melting Range		607 – 650	°C	Thermal Conductivity	25°C	138	W / m . °C
Modulus of Elasticity				Electrical Resistivity	20°C	0.050	micro-ohm . m
Tension	20°C	69.3	GPa	Electrical Conductivity			
Torsion	20°C	25.9	GPa	Equal volume	20°C	35	% IACS
Compression	20°C	70.7	GPa	Equal weight	20°C	116	% IACS
				Equal weight	20°C	172	% IACS

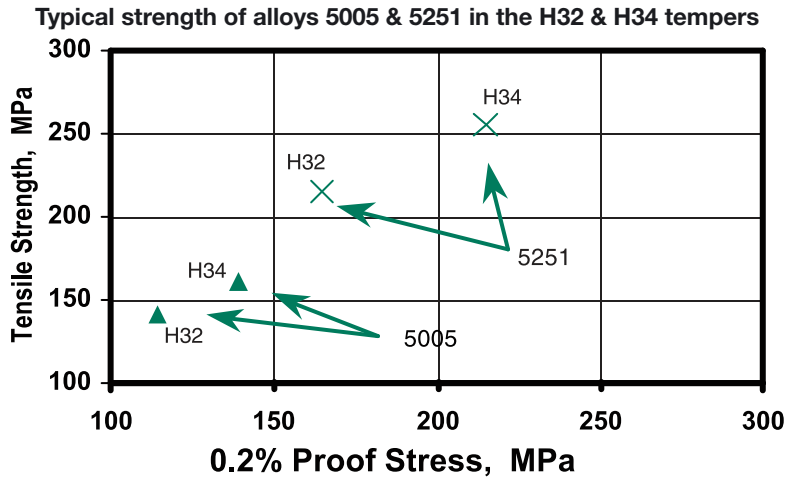
**Fabrication**    Aluminium 5251 is not generally hot worked. It is very readily cold formable in the annealed condition, as it is ductile. Forming loads and tool & press wear are generally less than with carbon steel. For piercing and blanking the punch to die clearance should be about 7% of the thickness per side for the H32 & H34 tempers. Sharp tools are required.

Indicative minimum bend radii for 90° cold forming for various thickness, t mm	Temper	0.4	0.8	1.6	3.2	4.8	6.4	9.5	13
	H32	0 t	0 t	1 t	1 t	1 t	1 t	1 t	2 t
	H34	0 t	1 t	1 t	2 t	2 t	2 t	2 t	3 t

**Machinability**    5251 is readily machinable by conventional methods. It should be machined at high speed with copious lubrication to avoid thermal distortion of the workpiece. Sharp tools are essential. High speed steel or tungsten carbide may be used. Cuts should be deep and continuous, with high cutting speeds. Woodworking machinery may be suitable for short runs.

**Welding**    5251 is readily weldable by standard techniques. It is frequently welded with GTAW (TIG) or GMAW (MIG). Aluminium must be very dry & clean to avoid contamination & porosity of the weld. Filler metals 1100, 4043 or 4047 are used. 4043 is the most crack tolerant. Shielding gas must be dry & free of hydrogen.

**Heat Treatment**    Aluminium 5251 is annealed at 345°C, time at temperature and cooling rate are unimportant. Stress relief is rarely required, but can be carried out at about 220°C. If loss of strength is of concern, stress relief tests should be conducted.



Grade 5251 has equivalent ductility to 5052.

**ALUMINIUM 5083**  
**UNS A95083**

Aluminium alloy 5083 contains nominally 4.5% magnesium, 0.6% manganese and 0.1% chromium. In the tempered condition, it is strong, and retains good formability due to excellent ductility. 5083 has high resistance to corrosion, and is used in marine applications. It has the low density and excellent thermal conductivity common to all aluminium alloys.

**Typical Applications** require a weldable alloy of high to moderate strength, with good corrosion resistance. Marine applications, unfired welded pressure vessels, TV towers, drilling rigs, transportation equipment, armour plate.

CHEMICAL COMPOSITION AS/NZS 1734 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate.	Element	%	Element	%
	Aluminium	Remainder	Silicon	0.40 max
	Magnesium	4.0 – 4.9	Iron	0.40 max
	Manganese	0.40 – 1.0	Copper	0.10 max
	Chromium	0.05 – 0.25	Others, each	0.05 max
			Others, total	0.15 max

SPECIFIED MECHANICAL PROPERTIES AS/NZS 1734 Aluminium and aluminium alloys - Flat sheet, coiled sheet and plate.	Temper	0.2% Proof Stress, MPa min†	Tensile Strength, MPa	Elongation % min‡
	O (annealed)	125 – 200	275 – 350	14
	H112	125	275	10
	H116	215	305	10
	H321	215 – 295	305 – 385	10

† For information only, proof stress is not specified or measured except by prior agreement

‡ Minimum elongation, actual value depends on thickness – thicker gauges have higher elongation

Equivalent specifications:

USA: AA 5083; UK: BS 5083; Germany: DINAlMg4.5Mn; Europe: EN AW-A 5083; Japan: JIS A5083P;

France: NF A5083; ISO: Al Mg4.5Mn0.7.

The properties in this data sheet meet Australian/New Zealand Standard AS/NZS 1734:1997 Aluminium and aluminium alloys – Flat sheet, coiled sheet and plate (equivalent to BS EN 573-1). Alloy 5083 can be supplied to meet other national standards.

KEY TO TEMPER	Temper	Condition		
	O	Annealed (soft)		
	H1x	Strain hardened only		
	H2x	Strain hardened then partially annealed		
	H3x	Strain hardened and then stabilised (i.e. low temperature heat treated to pre-empt natural ageing, by reducing strength and increasing ductility)		
	Second digit: (x)			
	8	Full hard	4	Half hard
	6	Three quarter hard	2	Quarter hard

**Description** Aluminium 5083 is a strong magnesium-manganese-chromium-aluminium alloy. It can be hardened by cold work, but is not heat treatable to higher strength. It has good ductility for the strength level, better than most other 5000 series alloys (see figure).

**Austral Wright Metals** can supply this alloy as plate, sheet and strip. See Austral Wright Metals Catalogue for normal stock sizes and tempers.

**Pressure Vessels** AS1210 Pressure Vessels prequalifies alloy 5083 for pressure service for temperatures up to 65°C in the O, H112 & H321 tempers.

**Corrosion Resistance** Alloy 5083 has excellent resistance to general corrosion, and is used in marine applications. Resistance is excellent in aqueous solutions in the pH range 4 – 9.

The corrosion resistance of aluminium alloys relies on a protective surface oxide film, which when damaged is readily repaired by the rapid reaction between aluminium and oxygen. However, the high reactivity of the base metal can give rapid corrosion if the film cannot be repaired, so aluminium alloys are not suitable for use with reducing media. Alloy 5083 can be anodised to improve the corrosion resistance by thickening the protective surface film.

Alloy 5083 can be susceptible to exfoliation corrosion in severe applications. Material in the H116 temper is least susceptible, and passes the ASTM G66 Exfoliation Susceptibility Test (ASSET Test). AS 1734 suggests alloy 5083 should not be used above 65°C.

Since aluminium is a reactive metal, it may corrode more quickly when in electrical contact with most other metals. The prediction of galvanic corrosion is complex; please consult Austral Wright Metals for specific advice.

**Physical Properties**

Property	at	value	unit	Property	at	value	Unit
Density	20°C	2,660	kg/m³	Melting Range		574 – 638	°C
Weight		2.66 x thickness in mm		Mean Coefficient of Expansion	20°C	24.2	x 10 <sup>-6</sup> / °C
Modulus of Elasticity				Thermal Conductivity	25°C	120	W / m . °C
Tension	20°C	70.3	GPa	Electrical Resistivity	20°C	0.060	micro-ohm . m
Torsion	20°C	26.4	GPa	Electrical conductivity (all tempers)	20°C	29	% IACS
Compression	20°C	71.7	GPa				

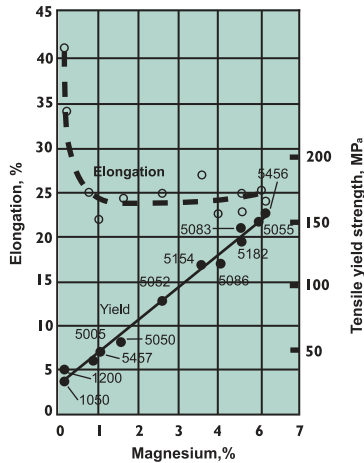
**Fabrication** Aluminium 5083 is readily cold formable, as it is ductile. Forming loads and tool & press wear are generally less than with carbon steel. For piercing and blanking the punch to die clearance should be about 7% of the thickness per side for temper O, 7.5% for other tempers.

Recommended minimum bend radii for 180° and 90° T = material thickness		180° bend		90° bend	
	Temper	Up to 15 mm	Over 1.5 mm	Up to 15 mm	Over 1.5 mm
	O	1.0 t	-	1.0 t	1.5 t
	H116	3.0 t	3.0 t	2.0 t	2.0 t
	H321	2.0 t	3.0 t	1.5 t	2.0 t

**Welding** Alloy 5083 is readily welded by the TIG and MIG processes using 5183, 5356 or 5556 filler alloys. Welding the H116 temper will reduce the tensile and yield strengths in the heat affected zone to those of the annealed condition. Aluminium must be very dry & clean to avoid contamination & porosity of the weld. It is essential that all traces of flux used in welding or brazing are removed by scrubbing with hot water.

**Heat Treatment** Alloy 5083 is annealed at 350°C, time at temperature and cooling rate are unimportant. Stress relief is rarely required, but can be carried out at about 220°C. If loss of strength is of concern, stress relief tests should be conducted.

Summary of Characteristics	
Corrosion resistance	Very Good
Formability	Good (H116)
Weldability	Very Good
Anodising	Fair
Machinability	Fair
Brazability	Poor
5083 is anodised for corrosion protection only	



Comparison of yield strength & elongation with magnesium content for commercial alloys – annealed temper.

The technical advice and recommendations made in this Product Data Sheet should not be relied or acted upon without conducting your own further investigations, including corrosion exposure tests where needed. Please consult current editions of standards for design properties. Austral Wright Metals assumes no liability in connection with the information in this Product Data Sheet.



## HANDLING AND STORING ALUMINIUM

Aluminium is one of the easiest materials to keep in good condition. It has a high natural resistance to corrosive conditions normally encountered during shipment and storage and a little care will maintain its original appearance for a long time. Aluminium is often used for its appearance, so it is worth the effort to maintain the surface, which is much more cost effective than restoring it. The principal things to guard against are surface abrasion and water stains.

Austral Wright Metals always pack aluminium to prevent traffic or rub marks during shipment and to keep it dry. All incoming shipments should be inspected promptly. Traffic marks may appear as scratches, surface abrasions, or a condition resembling cinders embedded in the metal. They result from mechanical abrasion and subsequent oxidation of the abraded areas. Their principal disadvantage is their unsightliness and their effect on finishing operations.

To avoid traffic marks AWM pack the metal to prevent undue flexing or twisting and items rubbing against each other. Products are usually packed on skids or in timber boxes. Paper or cardboard is used where necessary for cushioning thin or soft metal. Strapping is used to reinforce skids and boxes and to bind wrapped bundles, but never contacts the product directly.

Water stains look non-metallic and are usually whitish, but may be iridescent, depending on the alloy and degree of oxidation. They are caused by moisture trapped between the surfaces of closely packed sheets. The purer aluminium alloys are more resistant to water stain, and the most susceptible are the high magnesium 5xxx and 6xxx series alloys. Water stain is superficial and the mechanical properties are not affected. If aluminium does get wet, it should be thoroughly dried before storing – by evaporation in air or by dry air currents. When the moisture is removed soon after the metal gets wet, no stain will result. Even if staining has started, when the aluminium is dried the stain will not develop further. The metal should not be stored near water sources such as steam and water pipes, and it should be kept at reasonable distance from open doors and windows.

Condensation is the most common cause of water stains. Under severe conditions, condensation may also cause fairly uniform surface deterioration, which may only become apparent if the material is subsequently etched and anodised. Condensation will be prevented by keeping the temperature of the metal above the dew point of the air. So it is important to avoid a sudden fall in temperature or increase in humidity in the storage area.

Aluminium in original boxes should never be left in the open – greater variations in temperature and humidity outdoors increase the possibility of condensation. Even if the package is “waterproof”, the seal will not

be perfect and outdoor storage is highly undesirable. Waterproof packages are designed to protect the metal during shipment and are not meant for extended exposure to the weather.

Where water stains have occurred, the degree of staining may be judged by the relative roughness of the stained area. If the surface is reasonably smooth, the stain is superficial and the appearance can be improved by mechanical or chemical treatments. Scratch-brushing or rubbing with stainless steel wool and oil is effective in removing water stain. Alternatively, a chemical dip in 10% sulphuric + 3% chromic acid at 80°C will brighten the surface without undue etching.

When storing aluminium avoid contact with other metals, which will cause scratches or other marks. Racks and bins faced with plastic or wood are recommended. It is also good practice to keep chemicals such as acids, alkalis, caustics, nitrates and phosphates away from aluminium.

Oldest stock should always be used first. Occasional checking of the stock on hand will help to prevent any serious corrosion and assist with the problem of age hardening.

## WORKING AND SHAPING ALUMINIUM

The cleanest possible working conditions and good housekeeping are a must to prevent contamination of surfaces by metal swarf and/or dust. Physical damage to the surface should be avoided for best corrosion resistance.

Use a hard pencil lead for scribing – steel scribing tools should not be used. Rinsing fabricated and welded parts with nitric acid (at least 15%) gives a clean surface and proper restoration of the protective natural oxide film.

Welding to recognised good practice includes scrupulous cleaning and drying of the surfaces before welding to avoid cracking.

Grease can be used to protect or seal spaces and openings forming part of removable items (bolted or screwed assemblies). On no account should the grease contain graphite or molybdenum disulphide, as these will promote corrosion.

For bonded assemblies, the adhesive should be chosen both for strength and also to avoid deleterious side effects (eg. decomposition of the adhesive caused by moisture).

The need for care and maintenance of natural, anodised or prepainted surfaces depends on the environment and the type of exposure. These factors determine the frequency of washing. Detergents etc should be checked for harmful action on the surface concerned. For applications involving food, cleaning products complying with current regulations must be used.

*Welcome to*

**Austral Wright Metals**



Austral Wright Metals has been a leading metals distributor in Australia for more than 20 years. With non ferrous manufacturing origins for over 70 years prior to this, it means we know metals and the industry better than most.

### Service

A comprehensive range of stock; helpful, dedicated and knowledgeable staff; a determination to supply what you need when you need it, at the quality level you require – it adds up to unbeatable service. Our aim is next day delivery for orders for standard stock, and our warehouses around the country are staffed and equipped to achieve this.

With over 5,000 items of copper, brass and bronze, stainless steel, aluminium and even some titanium and nickel alloy products in stock, we are well equipped to meet your requirements. Where customers need non-standard products, special sizes and qualities, or have variable demand, Austral Wright Metals will provide special stocking arrangements. We also source and indent larger quantities of specialized products from mills around the world.

### People

Exceptional customer service starts with people. Austral Wright Metals develop and retain high quality personnel with a variety of training courses covering product knowledge and skills training. This is supported by metallurgists and engineers with an unrivalled knowledge of the metals we sell, gained from mill careers in making the metals. In the design phase we're here to help you with product specifications and optimum material selection – economic & technical – and we can help out if you have problems in fabrication or in service.

### Quality

Austral Wright Metals sources from selected high quality mills overseas. We choose the best for reliable product quality, price and delivery. Sourcing is our key contribution to the industry – we aim to supply the best combination of quality, delivery and price to make your business more competitive.

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