

GUIDE TO COMMON SOUTH AFRICAN ALUMINIUM ALLOYS (for more detail refer to the alloy specification sheets)

ALLOY	CHEMICAL COMPOSITION (mass %)									TYPICAL TEMPER	2% Proof Stress (MPa)	STOCK RANGE	TYPICAL APPLICATION / USAGE
	Al	Fe	Si	Cu	Mn	Mg	Zn	Ti	Cr				
1050A	99,5	0,4	0,25	0,05	0,05	0,5	0,7	0,05		O / Hx4	35 / 105	Sheet, coil, foil, (0.2 - 6.35 mm) Extrusions.	General sheet work where moderate strength is adequate, packaging for food and chemicals, radiator tubes, insulation foils, automotive trim, light reflectors, architecture.
1200	99,0	Fe & Si = 1.0		0,05	0,05	-	0,1	0,05		O / Hx4	40 / 150	Sheet, coil, circles, plate, tread sheet/plate	General sheet work where moderate strength is adequate, packaging for food and chemicals, architectural flashings, hollowware, automotive trim.
1350	99,5	0,40	0,10	0,05	0,01	0,03	0,05		0,01	O / Hx4	75 / 110 (UTS)	Extrusions, sheet and plate	Electrical conductors, busbars, transformer coils.
2024 AlCu4Mg1	Bal.	0,5	0,5	3,8 - 4,9	0,3 - 0,9	1,2 - 1,8	0,25	0,15	0,1	T3, T8	340 / 450	Bar, sheet. <i>Imported</i>	High strength fabricated or machined items. Mechanical joining
3003 Special	Bal.	0,15	0,5	0,10 - 0,5	1,70 - 2,40					Mill temper only.	On request	Treadbright, 1 - 5 bar sheet & coil	Decorative & architectural, non-slip flooring for boats, vehicles, lifts, offices, factories.
3004 AlMnMg	Bal.	0,7	0,3	0,25	1,0 - 1,5	0,8 - 1,3	0,25			O / Hx4 / Hx8	75 / 200 / 250	Sheet, coil (0,2 - 6,35 mm)	General purpose sheet of high strength used for roofing, cladding, gutters, packaging, containers, transport, architectural, cans.
4043 AlSi5	Bal.	0,8	4,5 - 6,0	0,3	0,05	0,05	0,10	0,2	-		n / a	Wire and rods	Welding filler, commonly used for castings and for welding 1xxx to 5xxx and 6xxx, and 6xxx to 6xxx.
5083 AlMg4,5 Mn0,7	Bal.	0,4	0,4	0,1	0,4 - 1,0	4,0 - 4,9	0,25	0,15	0,05 - 0,25	O / Hx2 / Hx4	145 / 240 / 275	Sheet, plate (0,25 - 6,35 - 150 mm)	Commercial transport, marine plate, structural plate for mining, pressure vessels, storage tanks, tooling plate, railway wagons, general sheet metal.
5251 AlMg2Mn	Bal.	0,5	0,4	0,15	0,1 - 0,5	1,7 - 2,4	0,15	0,15	0,15	O / Hx2 / Hx4	80 / 165 / 190	Sheet, plate, coil, tread sheet	As for 5083, but a medium to high strength alloy
5454 AlMg3Mn	Bal.	0,4	0,25	0,1	0,5 - 1,0	2,4 - 3,0	0,25	0,20	0,05 - 0,2	O / Hx2 / Hx4	110 / 205 / 235	Sheet, plate.	As for 5083, but good strength in temperature range 65 - 160° C.

ALUMINIUM

National Distributors of Stainless Steel and Aluminium

GUIDE TO COMMON SOUTH AFRICAN ALUMINIUM ALLOYS cont'd

ALLOY	CHEMICAL COMPOSITION (mass %)									TYPICAL TEMPER	2% Proof Stress (MPa)	STOCK RANGE	TYPICAL APPLICATION / USAGE
	Al	Fe	Si	Cu	Mn	Mg	Zn	Ti	Cr				
5356 <i>AlMg5</i>	Bal.	0,4	0,25	0,1	0,05 – 0,20	4,5 – 5,5	0,1	0,06 – 0,2	0,05 – 0,2		n / a	Wire and rods	Welding filler commonly used for welding 5xxx series to 5xxx and 6xxx series alloys.
6061 <i>AlMgSiCu</i>	Bal.	0,7	0,4 – 0,8	0,15 – 0,4	0,15	0,8 – 1,2	0,25	0,15	0,04 – 0,35	O / T4 / T6 / sheet T651	55 / 140 / 270	Extrusions, bar, plate, sheet.	Heavy duty structural sections, road, rail, marine, bridges, pylons, rivets, hydraulic components.
6063 <i>AlMg0,7Si</i>	Bal.	0,35	0,2 – 0,6	0,1	0,1	0,45 – 0,90	0,1	0,1	0,1	O / T4 / T6	50 / 90 / 210	Extrusions – all shapes	Structural, transport, architectural, agricultural, general engineering, tubing, intricate profiles.
6082 <i>AlSiMnMg</i>	Bal.	0,5	0,7 – 1,3	0,1	0,4 – 1,0	0,6 – 1,2	0,2	0,1	0,25	O / T4 / T6 / sheet T651	60 / 170 / 310	Extrusions, sheet, plate.	Stressed and heavy duty structural applications, machinery, towers, roof trusses, cranes, bridle plates.
6463 <i>AlSiMg</i>	Bal.	0,15	0,2 – 0,6	0,2	0,05	0,45 – 0,90	0,05	-	-	T4 / T6	75 / 160	Extrusions	Especially good for bright anodising of architectural sections and trim.
7075 <i>AlZnMgCu</i>	Bal.	0,5	0,4	1,2 – 2,0	0,3	2,1 – 2,9	5,1 – 6,1	0,2	0,18 – 0,28	T6 sheet & T6 plate	480 & 460	Bar, extrusions, plate. <i>Imported</i>	Very high strength for structural components, machine parts & tools. (Mechanical joining)
44100 <i>AlSi12</i>	Bal.	0,65	10,5 – 13,5	0,15	0,55	0,10	0,15	0,2	-	Sand / chill / die casts	65 / 75 / 120	Castings – sand, chill and die.	Marine 'on deck', manifolds, thin section & intricate castings, large castings & castings to be welded.
46500 <i>AlSi9Cu3</i>	Bal.	1,3	8 – 11	2 – 4	0,55	0,05 – 0,55	3,0	0,25	-	High press. die cast, 'F'	140	High pressure die castings	Automotive and electrical components, household appliances.