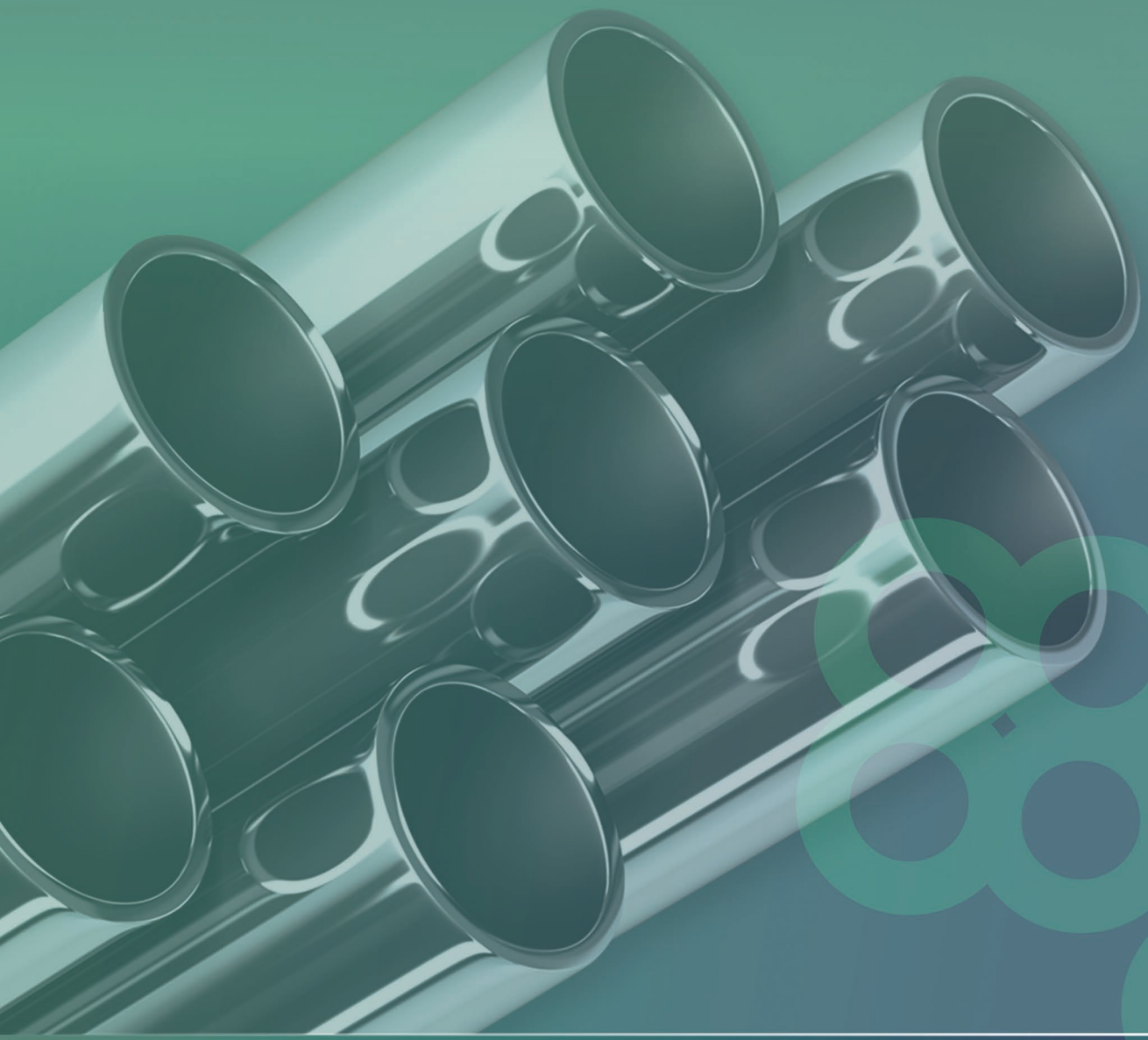
CORROSION RESISTANT MATERIALS AND SOLUTIONS



QUALITY • INTEGRITY • FAIR PRICING • SERVICE • ACCESSIBILITY • EXPERTISE

COMPARATIVE STAINLESS STEEL **GRADES**
BILLING MASS: STAINLESS STEEL **PLATE/SHEET**
ALUMINIUM

www.nde.co.za

BILLING MASS: STAINLESS STEEL PLATE/SHEET

Mass of plate/sheet (kg) for size (mm x mm) - use tables as a guideline only

Metric Size - 304/316/3CR12 Hot Rolled Plate

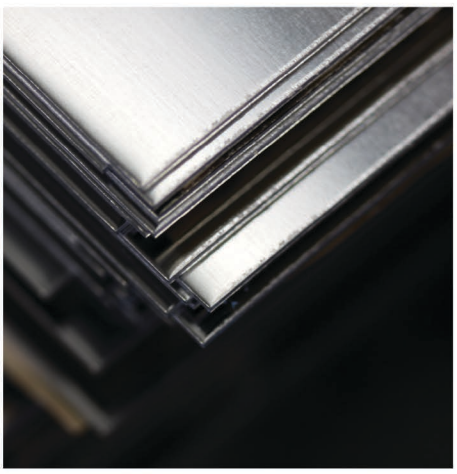
Gauge	Plate Size				
mm	2 500 x 1 250	3 000 x 1 500	6 000 x 1 500	6 000 x 2 000	Mass/m²
3.00	76.87	110.70	221.40	295.20	24.60
4.50	115.31	166.05	332.10	442.80	36.90
6.00	153.75	221.40	442.80	590.40	49.20
8.00	205.00	295.20	590.40	787.20	65.60
10.00	256.25	369.00	738.00	984.00	82.00
12.00	307.50	442.80	885.60	1180.80	98.40
16.00	410.00	590.40	1180.80	1574.40	131.20
20.00	512.50	738.00	1476.00	1968.00	164.00
25.00		922.50	1845.00	2460.00	205.00
30.00		1107.00	2214.00	2952.00	246.00
40.00			2952.00		328.00
50.00			3690.00		410.00

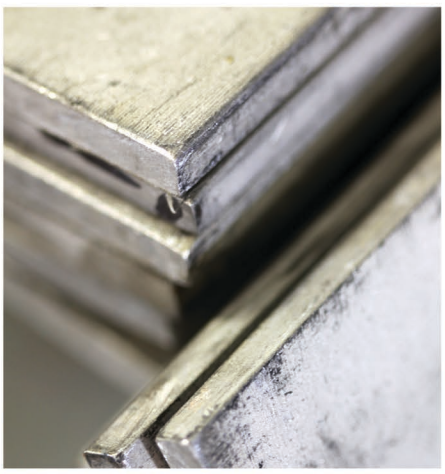
Metric Size - 304/316 Cold Rolled Sheet

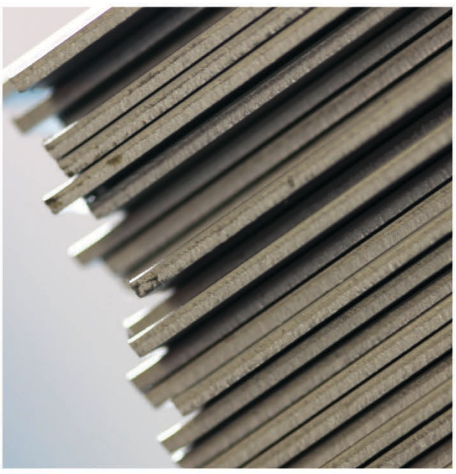
Gauge	Sheet Size			
mm	2 500 x 1 250	3 000 x 1 500	6 000 x 2 000	Mass/m²
0.50	12.61			4.03
0.70	17.65			5.65
0.90	22.70			7.26
1.20	30.26	43.58		9.68
1.50	37.83	54.47		12.11
1.60	40.35	58.10		12.91
2.00	50.44	72.63		16.14
2.50	63.05	90.79		20.18
3.00	75.66	108.95	290.70	24.21

Metric Size - 430/3CR12 Cold Rolled Sheet

Gauge	Sheet Size		
mm	2 500 x 1 250	3 000 x 1 500	Mass/m²
0.5	12.50		4.00
0.7	17.50		5.60
0.9	22.50		7.20
1.0	25.00		8.00
1.2	30.00		9.60
1.5	37.50	54.00	12.00
1.6	40.00	57.60	12.80
2.0	50.00	72.00	16.00
2.5	62.50	90.00	20.00







2021

GAUTENG
JOHANNESBURG 011 472 1659
GERMISTON 010 005 0001
PRETORIA 010 005 0012
HEAD OFFICE 011 791 0630
WESTERN CAPE
CAPE TOWN 021 550 6800
KWAZULU-NATAL
DURBAN 031 700 5444
EASTERN CAPE
GQEBERHA (PE) 041 453 4548
MPUMALANGA
NELSPRUIT (AGENCY) 087 654 1528

COMPARATIVE STAINLESS STEEL **GRADES**

FERRITIC STAINLESS STEELS

EN Number	EN Name	Trade Name	BS	US	UNS	En	SS	Composition Guide				
1.4000	X6Cr13		403S17	410S	S41008		2301	0,08x	12			
1.4003	X2CrNi12	3CR12			S40977			0,03x	11	0,5		
1.4016	X6Cr17		430S17	430	S43000	60	2320	0,08x	17			
1.4509	X2CrTiNb18			*441	S43932			0,015x	18			Nb & Ti
1.4510	X3CrTi17			430Ti	S43035			0,05x	17			0,6 Ti
1.4511	X3CrNb17			430Nb				0,05x	17			0,6 Nb
1.4512	X2CrTi12		409S19	409	S40900			0,03x	11			0,5 Ti
1.4520	X2CrTi17			430Ti	S43035			0,025x	17			0,40 Ti
1.4521	X2CrMoTi18-2			444	S44400		2326	0,025x	17		2	0,6 Ti

**Designation 441 is not officially included in ASTM A240 standard but it is widely used as a colloquial synonym for Grade 1.4509.*

MARTENSITIC & PRECIPITATION HARDENING STAINLESS STEELS

EN Number	EN Name	Trade Name	BS	US	UNS	En	SS	Composition Guide				
1.4005	X12CrS13		416S21	416	S41600	56AM		0,08/0,15	12			S
1.4006	X12Cr13		410S21	410	S41000	56A		0,08/0,15	12			
1.4021	X20Cr13		420S29	420	S42000	56B	2303	0,16/0,25	12			
1.4028	X30Cr13		420S45	420	S42000	56D	2304	0,26/0,35	12			
1.4057	X17CrNi16-2		431S29	431	S43100	57		0,12/0,22	15	2		
1.4313	X3CrNiMo13-4			F6NM	S41500			0,05x	13	4	0,5	N
1.4109	X70CrMo15		440 A	440 A	S44002			0,6 - 0,75	15		0,5	
1.4112	X90CrMoV18		440 B	440 B	S44003			0,8	17		0,9	V
1.4125	X105CrMo17		440 C	440 C	S44004			1,0	17		0,7	
1.4532	O7Cr15Ni7Mo2Al				S15700			0,09	15	7	2	MnAl
1.4542	X5CrNiCuNb16-4	17.4PH		630	S17400			0,07x	17	4		4,0Cu
1.4568	X7CrNiAl17-7	17.7PH		631	S17700			0,09x	17	7		1,0Al

AUSTENITIC STAINLESS STEELS & AUSTENITIC STAINLESS ALLOYS

EN Number	EN Name	Trade Name	BS	US	UNS	En	SS	Composition Guide				
1.4301	X5CrNi18-10		304S31	304	S30400	58E	2333	0,07x	18	8		
1.4303	X4CrNi18-12		305S19	305	S30500			0,06x	18	11		
1.4305	X8CrNiS18-9		303S31	303	S30300	58M	2346	0,10x	18	8		S
1.4306	X2CrNi19-11			304L			2352	0,030x	18	10		
1.4310	X10CrNi18-8		301S21	301	S30100		2331	0,05/0,15	17	7		
1.4311	X2CrNiN18-10		304S61	304LN	S30453		2371	0,030x	18	9		N
1.4318	X2CrNiN18-7			301LN	S30153			0,030x	17	7		N
1.4371	X2CrMnNiN17-7-5			201L	S20103			0,030x	17	4		Mn&N
1.4372	X12CrMnNiN17-7-5			201	S20100			0,15x	17	4,5		Mn&N
1.4373	X12CrMnNiN18-9-5			202	S20200			0,15x	18	5		Mn&N
1.4401	X5CrNiMo17-12-2		316S31	316	S31600	58J	2347	0,07x	17	11	2	
1.4404	X2CrNiMo17-12-2		316S11	316L	S31603		2348	0,030x	17	11	2	
1.4406	X2CrNiMoN17-11-2		316S61	316LN	S31653			0,030x	17	11	2	N
1.4429	X2CrNiMoN17-3-3		316S51	316LN	S31653			0,030x	17	11	2,5	N
1.4432	X2CrNiMo17-12-3		316S13	316L			2353	0,030x	17	11	2,5	
1.4434	X2CrNiMoN18-12-4			317LN	S31753			0,030x	18	11	3	N
1.4435	X2CrNiMo18-14-3		316S13	316L			2353	0,030x	17	13	2,5	
1.4436	X3CrNiMo17-13-3		316S33	316		58J	2343	0,05x	17	11	2,5	
1.4438	X2CrNiMo18-15-4		317S12	317L	S31703		2367	0,030x	18	13	3	
1.4439	X2CrNiMoN17-13-5			317LMN	S31726			0,030x	17	13	4	N
1.4466	X1CrNiMoN25-22-2			310 MoLN	S31050			0,020x	25	22	2	N
1.4529	X1NiCrMoCuN25-20-7				N08925			0,020x	19	24	6	Cu
1.4539	X1NiCrMoCu25-20-5	904L	904S13		N08904		2562	0,020x	19	24	4	Cu
1.4541	X6CrNiTi18-10		321S31	321	S32100	58B	2337	0,08x	18	9		Ti
1.4547	X1CrNiMoCuN20-18-7	254SMO			S31254		2378	0,020x	20	18	6	Cu
1.4550	X6CrNiNb18-10		347S31	347	S34700	58F	2338	0,08x	18	9		Nb
1.4563	X1NiCrMo31-27-4	SANICRO 28			N08028		2584	0,020x	27	31	4	Cu&N
1.4571	X6CrNiMoTi17-12-2		320S31	(316Ti)	S31635		2350	0,08x	17	11	2	Ti
1.4864	X12NiCrSi35-16							0,15	16	34		MnSiN
1.4876	X10NiCrAlTi32-21							0,10	20	31		TiAlMn
2.4660	NiCr20CuMo							0,06	20	37	2	NbCu
2.4858	NiCr21Mo							0,025	20	40	2,5	TiCuAl

DUPLEX STAINLESS STEELS

EN Number	EN Name	Trade Name	BS	US	UNS	En	SS	Composition Guide				
1.4062	X2CrNiN22-2	DX2202/URANUS 2202			S32202			0,025x	23	2,5	0,3	Mn&N
1.4162	X2CrNiMoN22-5-3	LDX 2101			S32101			0,04x	21	1,5	0,3	Mn&N
1.4362	X2CrNiN23-4	ALLOY 2304			S32304		2327	0,030x	22	4	0,4	N&Cu
1.4410	X2CrNiMoN25-7-4	ALLOY 2507			S32750		2328	0,030x	24	6	3	N
1.4462	X2CrNiMoN12-5-3	ALLOY 2205	318S13		S31803/S32205		2377	0,030x	22	5	3	N
1.4507	X2CrNiMoCuN25-6-3	FERRALIUM 225			S32550			0,030x	24	6	3	N&Cu
1.4662		LDX 2404			S82441			0,02	24	3,6	1,6	N Mn

COMMON SOUTH AFRICAN ALUMINIUM ALLOYS

ALLOY	CHEMICAL COMPOSITION (mass %)									TYPICAL TEMPER	2% Proof Stress (MPa)	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	General sheet work where moderate strength is adequate, packaging for food and chemicals, radiator tubes, insulation foils, automotive trim, light reflectors, architecture
1350	99,5	0,40	0,10	0,05	0,01	0,03	0,05		0,01	O / Hx4	75 / 110 (UTS)	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	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	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	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	Welding filler
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	Commercial transport, marine plate, structural plate for mining, pressure vessels, chemical plant, storage tanks, tooling plate, railway wagons, general sheet metal, military vehicles, building construction
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	As for 5083, but a medium to high strength alloy. Also for signs and architectural panels and irrigation equipment
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	As for 5083 but good strength in temperature range 65 - 160˚C. Chemical and process industries, transportation and building
5356 AlMg5	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	Welding filler
6061 AlMgSiCu	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	Heavy duty structural sections, road, rail, marine, bridges, pylons, rivets, hydraulic components
6063 AlMg0,7Si	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	Structural, transport, architectural, agricultural, general engineering, tubing, intricate profiles
6082 AlSiMnMg	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	Stressed and heavy duty structural applications, machinery, towers, roof trusses, cranes, bridle passes
6463 AlSiMg	Bal.	0,15	0,2 – 0,6	0,2	0,05	0,45 – 0,90	0,05			T4 / T6	75 / 160	Especially good for bright anodising of architectural sections and trim
7075 AlZnMgCu	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	Very high strength for structural components, machine parts & tools (mechanical joining)
44100 AlSi12	Bal.	0,65	10,5 – 13,5	0,15	0,55	0,10	0,15	0,2		Sand / chill / die casts	65 / 75 / 120	Marine 'on deck', manifolds, thin section & intricate castings, large castings & castings to be welded
46500 AlSi9Cu3	Bal.	1,3	8 - 11	2 - 4	0,55	0,05 – 0,55	3,0	0,25		High press. die cast	140	Automotive and electrical components, household appliances

Compiled by the Aluminium Federation of Southern Africa (AFSA)

ALUMINIUM SHEET

Grade 1050 H14

Thickness	2 500 x 1 250 (kg/sheet)	3 000 x 1 500 (kg/sheet)	6 000 x 1 500 (kg/sheet)
0.9	7.62	10.98	21.95
1.2	10.16	14.63	29.27
1.5	12.70	18.29	36.59
1.6	13.55	19.51	39.02
2.0	16.94	24.39	48.78
2.5	21.17	30.49	60.98
3.0	25.41	36.59	73.17
4.5	38.11	54.88	109.76
6.0	50.81	73.17	146.34

ALUMINIUM TREADBRIGHT

Thickness	2 438 x 1 219 (kg/sheet)
1.47	12.58
2.03	17.12
3.17	26.45

ALUMINIUM TREAD PLATE

Thickness	2 500 x 1 250 (kg/sheet)	3 000 x 1 500 (kg/sheet)
1.5	15.20	21.89
2.0	19.44	27.99
3.0	27.91	40.19
4.5	40.61	58.48
6.0	53.31	76.77