Cold Rolled Sheets

Specifications:

Hindalco's cold rolled sheets are precision-finished to meet the international standards for tight thickness, tolerance, flatness and dimensional accuracy. Sound metallurgical properties for further fabrication, anodising characteristics and a blemish-free surface make it useful in both commercial and general engineering applications.

Common alloys

Dimensions			
Parameter	**Range**	**Standard**	**Tolerance**
Thickness (mm)	0.16 — 5.99	-	for 0.16 to 0.29 +/-0.01 for 0.30 to 0.71 +/-0.05 for 0.72 to 1.40 +/-0.08 for 1.41 to 2.00 +/-0.11 for 2.01 to 4.00 +/-0.12 for 4.01 to 5.99 +/-0.15
Width (mm)	500 — 1600	914, 1219	+/-3 for width <=1000 +/-4 for width >1000 +/-10 for thickness >1.63
Length (mm)	2438 for thickness < 0.7, 3658 max for > 0.7	2438, 3048	+/-3 for length <=1000 +/-4 for length 1000 — 2000

			+/-5 for length 2000 — 3000
			+/-7 for length >3000
Diagonal difference	<=6 when length <=1000	-	-
	<=8 when length 1000 — 2000		
	<=10 when length 2000 — 3000		
	<=14 when length > 3000		
Interleaved sheets can be supplied in > 0.7 mm with polythene or self-adhesive film.			
Stucco embossed sheets are also available in the thickness range of 0.30 — 1.10mm.			
Stretched sheets in the thickness range of 2 — 5.99 mm can also be offered.			

Mechanical properties							
		UTS (mpa)		**%E (min) (50mm gauge length)**			
Alloy (AA)	**Temper**	**Min**	**Max**	**0.5 — 0.8 mm**	**0.81 — 1.3 mm**	**1.31 — 2.6 mm**	**2.61 — 5.99 mm**
1050	O	55	95	22	25	29	30
1050	H14	95	125	4	5	6	6
1050	H18	125	-	3	3	4	4

1070	O	-	95	27	27	29	34
1070	H14	95	120	4	5	6	7
1070	H18	120	-	3	3	4	4
1200,1100	O	70	110	20	25	29	30
1200,1100	H14	105	140	3	4	5	5
1200,1100	H16	125	150	2	3	4	4
1200,1100	H18	140	-	2	2	3	3
3103,3003	O	90	130	20	23	24	24
3103,3003	H14	130	180	3	4	5	5
3103,3003	H16	150	195	2	3	4	4
3103,3003	H18	170	-	2	2	3	3
3105	O	95	145	14	14	15	16
3105	H14	150	200	4	4	5	5
3105	H16	175	215	2	2	3	4
3105	H18	195	-	1	1	1	2
8011	O	85	120	20	23	25	30
8011	H14	125	160	3	4	5	5
8011	H16	150	180	2	3	4	4
8011	H18	175	-	2	2	3	3

Chemical composition								
Alloy (%)	**AA 1050**	**AA 1070**	**AA 1100**	**AA 1200**	**AA 3003**	**AA 3103**	**AA 3105**	**AA 8011**
Fe	0.40	0.25	0.95	1.00	0.70	0.70	0.70	0.60 — 1.00
Si	0.25	0.20	(Fe + Si)	(Fe + Si)	0.60	0.50	0.60	0.50 — 0.90
Mg	0.05	0.03	-	-	-	0.30	0.20 — 0.80	0.05
Mn	0.05	0.03	0.05	0.05	1.00 — 1.50	0.90 — 1.50	0.30 — 0.80	0.20
Cu	0.05	0.04	0.05 — 0.20	0.05	0.05 — 0.20	0.10	0.30	0.10
Zn	0.05	0.04	0.10	0.10	0.10	0.20	0.25	0.20
Ti	0.03	0.03	-	0.05	0.1(Ti + Zn)	0.1(Ti + Zn)	0.10	0.08
Cr	-	-	-	-		0.10	0.10	0.05
Each (Others)	0.03	0.03	0.05	0.05	0.05	0.05	0.05	0.05
Total (Others)	-	-	0.15	0.125	0.15	0.15	0.15	0.15
Al	99.50	99.70	99	99	Remainder	Remainder	Remainder	Remainder

Single number indicates maximum content

Strong alloys

Dimensions		
Parameter	**Range**	**Tolerance**
Thickness (mm)	0.30 — 5.99	for 0.30 to 0.56 +/-0.05
		for 0.57 to 0.71 +/-0.05, -0.08
		for 0.72 to 1.21 +/-0.08
		for 1.22 to 4.00 +/-0.13
		for 4.10 to 5.99 +/-0.15
Width (mm)	650 — 1220	+/-3 for width <=1000
		+/-4 for width >1000
Length (mm)	600 — 3200	+/-3 for width <=1000
		+/-4 for width 1000 - 2000
		+/-5 for width > 2000 - 3000
		+/-7 for width >3000

Mechanical properties				
Alloy (AA)	**Temper**	**UTS (mpa)**		**%E (min) (50mm gauge length)**
		Min	**Max**	
3004	O	150	200	10

3004	H32	193	240	1
3004	H34	220	260	1
3004	H36	240	280	1
3004	H38	260	-	1
5005	O	103	144	12
5005	H32	117	158	3
5005	H34	137	180	2
5005	H36	158	200	1
5005	H38	180	-	1
5052	O	170	210	14
5052	H32	210	260	4
5052	H34	230	280	3
5052	H36	255	300	2
5052	H38	268	-	2
5251	O	160	200	13
5251	H32	190	230	3
5251	H34	210	250	3
5251	H36	230	270	3
5251	H38	255	-	2

Chemical composition				
Alloy (%)	**AA 3004**	**AA 5005**	**AA 5052**	**AA 5251**
Fe	0.70	0.70	0.40	0.50
Si	0.30	0.30	0.25	0.40
Mg	0.80 — 1.30	0.50 — 1.10	2.20 — 2.80	1.80 — 2.40
Mn	1.00 — 1.50	0.20	0.10	0.10 — 0.50
Cu	0.25	0.2	0.10	0.15
Zn	0.25	0.25	0.10	0.15
Ti	-	-	-	0.15
Cr	-	0.10	0.15 — 0.35	0.15
Each (Others)	0.05	0.05	0.05	0.05
Total (Others)	0.15	0.15	0.15	0.15
Al	Remainder	Remainder	Remainder	Remainder
Single number indicates maximum content.				

Applicable standards

ASTM - B -209M, Aluminium association — aluminium standards and data, Hindalco manufacturing limits (as applicable).

Packing

Cold rolled sheets are wrapped in HDPE and placed on wooden pallets which have runners along and across the length of the sheet. An angle board is attached to the edges for edge protection, plyboard is placed on the top and bottom of the stack and the package is strapped with hoop iron straps. Silica gel packets are used for moisture protection.