Metals Solution Provider

LEE CHUAN GUAN HARDWARE SDN BHD

Contents

CompanyBackground

Lee Chuan Guan Hardware (hereinafter called 'LCG') origin goes back to 1966, from a small retail hardware shop situated in Johor Bahru downtown and later expanded to be one of the key premier steel stockist in Southern Malaysia region with extensive inventory level at 30,000mt which occupies a 4 acres fully sheltered area.

LCG registered as private limited company since 1982 and achieved its significant product diversification by entering the structural and industrial steel inline with the rapid domestic economy growth since late 80's. The past decade, LCG also aggressively engaged in oil field, marine, water treatment, automotive, civil construction and general manufacturing supplies.

Apart from being the supplier of a comprehensive range of quality steel products from both reputable domestic and foreign mills, LCG aims to extend its commitment to customers by enhancing its service and facilitate its operation with latest equipments. A dedicated team is tasked to provide product support and assist customers in gaining greater effectiveness as well as efficiency.

LCG also wholly-owns the largest pipe mill cum coil service centre in the region, Japmas Steel Sdn Bhd, as its manufacturing arm of producing ERW steel pipes up to 12" and large scale structural hollow sections with its foothold in domestic and foreign markets.

With its investment in both trading and manufacturing sectors, LCG is to further strengthen the position of being the leading ONE-STOP-STEEL provider not only in Southern Malaysia but moving beyond this territory as well.

Mild**Steel**Plate

Lee Chuan Guan Hardware supplies both imported and domestic made steel plates produced by reputable mills with fully compliance to internationally recognized standards.

All plates are supplied with excellent dimensional accuracy and uniformity mainly for structural purposes, boiler & pressure vessel, ship building and various industrial applications.

The comparison of carbon steel for general structural purposes

Standard	BS 4360	ASTM/ASME	JIS G3101	EN 10025	DIN 17100
General Purpose Structural Steels		A283B-A569 CQ	SS 330	S185	St 33
	43 (A,B)	A283D - A36	SS 400	S235JR, JO	St 37-2, St 37-3
		A572 Gr.50 - A678 Gr.A	SS490	S275JR, JO	
	50 (A,B,C)		SM490A	S355JR, JO, S355J2G3, S355J2G4	St 52-3 (U,N)
	50D, DD		SM490B		
	50F		SM490C		
		A633M Gr.D	SM520B	S355K2G3, K2G4	
	55C		SM520C	E295	St 50-2
	55EE	A633M Gr.E	SM570	E335	St 60-2
				E360	St 70-2

The comparison of boiler/vessel plates

Standard	ASTM/ASME	EN 10028-2	BS 1501
Boiler/Pressue Vessel Plates	A515 Gr 60-70	P296 GH	164 Gr360, 400
	A516 Gr 60-70		223 Gr400-490
	A537 Class. 1, 2	P355 GH	224 Gr400-490
	A612		225 Gr 490
	A622 Gr A,B,C		

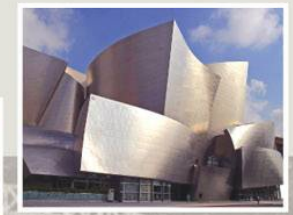
The comparison of steel plates for ship building

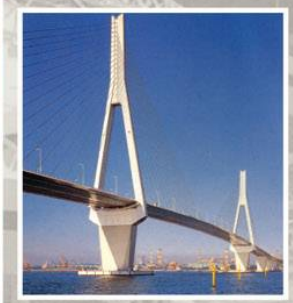
Standard	ABS	LLOYDS	Bureau Veritas
Steel For Ship Building	A	A	A
	B	B	B
	SS	D	D
	E	E	E
	CD/DS	-	-
	AH 36	AH 36	AH 36
	DH 36	DH 36	DH 36
	EH 36	EH 36	EH 36

Steel plate under other standard/specification not stated in the above tables may be ,made available upon inquiry.

Chequered Plates (Floor Plates)

Thickness	Width x Length			
	4' x 8' 1219mm x 2438mm		5' x 10' 1524mm x 3048mm	
	Calculated Weight			
mm	kg/pc	lb/pc	kg/pc	lb/pc
3.0	7.5069	165.497	117.336	258.679
4.5	110.63	242.645	172.033	379.264
6.0	145.058	319.795	226.730	499.849
7.5	180.052	396.943	281.426	620.432
8.0	191.717	422.659	299.659	660.628
9.0	215.046	474.090	336.123	741.017
10.0	238.376	525.524	372.587	821.405
11.0	261.705	576.955	409.052	901.796
12.0	285.035	628.388	445.516	982.185





Stainless**Steel**

LCG supplies wide variety of stainless steel products, such as plates, sheets, coils, bars, channels, seamless/welded pipes which produced accordance to the following major specifications/designations:-

JIS Designation	Characteristics and Main Applications
SUS 410	The most common grade of economical 13 Cr steels. In the annealed condition, this grade may be drawn or formed. Used for machine structures, home appliances, etc.
SUS 430	The most common and widely used of the ferritic grades. Low thermal expansibility, good malleability and antioxidizing. Good for heat-resistant utensils, combustion devices, domestic appliance and kitchen sink.
SUS 439	A ferritic stainless steel that outperforms in both oxidation resistance and corrosion combined with special processing give this alloy excellent formability.
SUS 302	Suited for oil, chemical, paper and food-processing machinery, dairy installations, buildings and utensils.
SUS 304	Most widely used; corrosion and heat resistant, good mechanical properties in low temperature, drawability, bending treatment properties without thermal hardening. Austenitic grade material.
SUS 304L	A special SUS 304 grade for usage where carbide precipitation after welding is undesirable. Used for chemical and petrochemical equipment, nuclear reactor facilities and oil-refinery.
SUS 310S	Higher alloyed stainless steels generally exhibit excellent elevated temperature strength along with resistance to creep deformation and environmental attack.
SUS 316	Highly corrosion and heat resistance. Commonly used in very severe conditions with less work hardening.
SUS 316L	Better corrosion and heat resistance than SUS316, suitable for sea-water treatment equipments, chemical plant, dye making, paper-mill, fertilizer production, photography, food processing and a lot more.

Dimensions and weight of stainless steel pipe conforming to ASTM A312 / ASME A312

Nominal diameter	Outside diameter (mm)	Nominal wall thickness								
		Schedule 5S			Schedule 10S			Schedule 40S		
NPS		Wall thickness (mm)	Weight (kg/m) Type 304 304L	Weight (kg/m) Type 316 316L	Wall thickness (mm)	Weight (kg/m) Type 304 304L	Weight (kg/m) Type 316 316L	Wall thickness (mm)	Weight (kg/m) Type 304 304L	Weight (kg/m) Type 316 316L
1/8	10.29	-	-	-	1.24	0.28	0.28	1.73	0.37	0.37
1/4	13.72	-	-	-	1.65	0.50	0.50	2.24	0.64	0.64
3/8	17.15	-	-	-	1.65	0.64	0.64	2.31	0.85	0.86
1/2	21.34	1.65	0..81	0.81	2.11	1.01	1.02	2.77	1.28	1.29
3/4	26.67	1.65	1.03	1.03	2.11	1.29	1.30	2.87	1.70	1.71
1	33.40	1.65	1.31	1.31	2.77	2.11	2.13	3.38	2.53	2.54
1 1/4	42.16	1.65	1.67	1.68	2.77	2.72	2.74	3.56	3.42	3.45
1 1/2	48.26	1.65	1.92	1.93	2.77	3.14	3.16	3.68	4.09	4.11
2	60.33	1.65	2.41	2.43	2.77	3.97	4.00	3.91	5.50	5.53
2 1/2	73.03	2.11	3.73	3.75	3.05	5.32	5.35	5.16	8.72	8.78
3	88.90	2.11	4.56	4.59	3.05	6.52	6.56	5.49	11.4	11.5
3 1/2	101.60	2.11	5.23	5.26	3.05	7.49	7.54	5.74	13.7	13.8
4	114.30	2.11	5.90	5.93	3.05	8.45	8.51	6.02	16.2	16.3
5	141.30	2.77	9.56	9.62	3.40	11.7	11.8	6.55	22.0	22.1
6	168.28	2.77	11.4	11.5	3.40	14.0	14.1	7.11	28.5	28.7
8	219.08	2.77	14.9	15.0	3.76	20.2	20.3	8.18	43.0	43.2
10	273.05	3.40	22.8	23.0	4.19	28.1	28.2	9.27	60.9	61.3
12	323.85	3.96	31.6	31.8	4.57	36.3	36.6	9.52	74.5	75.0
14	355.60	3.96	34.7	34.9	4.78	41.8	42.0	-	-	-
16	406.40	4.19	42.0	42.2	4.78	47.8	48.1	-	-	-
18	457.20	4.19	47.3	47.6	4.78	53.9	54.2	-	-	-
20	508.00	4.78	59.9	60.3	5.54	69.3	69.8	-	-	-

LCG also the stockist for NSSC 180 Stainless Steels produces by Nippon Steel & Sumikin Stainless Steel Corporation

NSSC180 High stain-resistant ferritic stainless steel

Features and Applications

Stepped up stain resistance with no Mo addition

1. Almost equal level of stain resistance as SUS 304
2. Superior to SUS 430 in extensibility and formability as a feature of low-carbon stainless steel
3. Exquisite performance in high-temperature characteristics such as oxidation resistance & high-temperature strength
4. Generally used as automotive trim material, automotive exhaust system, kitchen furnishings, home appliance, solar-heat collector, gate, handrail and etc.

Chemical composition (mass %)

	C	Si	Mn	P	S	Ni	Cr	Cu	Nb	N
Specification	≦0.02	≦1.00	≦1.00	≦0.040	≦0.006	≦0.60	19.00-21.00	0.30-0.60	≧10(C+N)and 0.30-0.80	≦0.025
Typical type	0.013	0.51	0.12	0.024	0.002	0.30	19.15	0.41	0.40	0.017

Stain resistance

(Test conditions)
0.5%NaCl+0.2%H_2O_2, 35°C,24hr Based on JIS Z 2371

Grade	Surface finishes	(superior) A	B	C	D	E	(inferior) F
NSSC 180	2B	■					
	BA	■					
	HL	■	■				
SUS 430	2B	■	■	■	■	■	
	BA		■	■	■	■	■
	HL			■	■	■	■
SUS 304	2B	■	■				
	BA	■					
	HL	■					

Characteristics

[Mechanical properties]

	Yield strength 0.2% offset N/mm²	Tensile strength N/mm²	Elongstion %	Hardness Hv
Specification	≧205	≧450	≧22	≦200
Typical type	314	500	32	153

Universal**Beams** and**Columns**

LCG trades in both METRIC and IMPERIAL sizes that rolled after different standard specifications, including I-, IPE-, H- and HE-Beams.
The difference between these beams is I- / IPE-Beams have shorter flange than the H- / HE-Beams.

Steel**Bars**

Steel Bars For General Structural Purposes

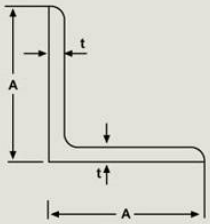
Steel bars are the most commonly required material for concrete reinforcement in machining, building and civil engineering works. As structures becoming larger, and must lighter per unit area occupied, higher tensile strength and yield point than those provided by ordinary carbon steel are required. They are classfied according to shape of corss-section such as flat, hexagrams, squares and rounds.

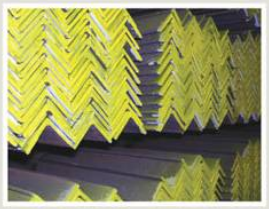
Flat Bars

Metric Unit

Section Size		Unit Weight
Thickness mm	Width mm	M kg / m
3.0	12.0	0.283
3.0	16.0	0.377
3.0	19.0	0.447
3.0	25.0	0.589
3.0	32.0	0.754
3.0	38.0	0.895
3.0	50.0	1.178
4.5	12.0	0.424
4.5	16.0	0.565
4.5	19.0	0.671
4.5	25.0	0.883
4.5	32.0	1.134
4.5	38.0	1.342
4.5	44.0	1.554
4.5	50.0	1.766
4.5	65.0	2.296
4.5	75.0	2.649
4.5	100.0	3.553
5.0	25.0	0.981
5.0	50.0	1.963
6.0	12.0	0.565
6.0	16.0	0.754
6.0	19.0	0.895
6.0	25.0	1.178
6.0	32.0	1.507
6.0	38.0	1.790
6.0	44.0	2.072
6.0	50.0	2.355
6.0	65.0	3.062
6.0	75.0	3.533
6.0	90.0	4.239
6.0	100.0	4.710
6.0	125.0	5.888
6.0	150.0	7.065
6.0	200.0	9.420
6.0	250.0	11.775
6.0	300.0	14.130
9.0	19.0	1.342
9.0	25.0	1.766
9.0	32.0	2.261
9.0	35.0	2.473
9.0	38.0	2.685
9.0	44.0	3.109
9.0	50.0	3.533
9.0	65.0	4.592
9.0	75.0	5.299
9.0	90.0	6.359
9.0	100.0	7.065
9.0	125.0	8.831
9.0	150.0	10.590
9.0	180.0	12.717
9.0	200.0	14.130
9.0	230.0	16.250
9.0	250.0	17.663
9.0	300.0	21.195
12.0	25.0	2.355
12.0	32.0	3.014
12.0	35.0	3.297
12.0	38.0	3.580
12.0	44.0	4.145
12.0	50.0	4.710
12.0	65.0	6.123
12.0	75.0	7.065
12.0	90.0	8.478
12.0	100.0	9.420
12.0	125.0	11.775
12.0	150.0	14.130
12.0	180.0	16.956
12.0	200.0	18.840
12.0	230.0	21.666
12.0	250.0	23.550
12.0	280.0	26.576
12.0	300.0	28.260

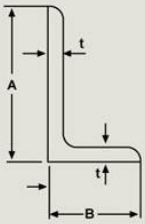
Section Size		Unit Weight
Thickness mm	Width mm	M kg / m
16.0	200.0	29.830
16.0	230.0	34.305
16.0	250.0	37.288
16.0	280.0	41.762
16.0	300.0	44.745
16.0	50.0	8.635
16.0	65.0	11.226
16.0	75.0	12.953
16.0	90.0	15.543
16.0	100.0	17.270
16.0	125.0	21.588
16.0	150.0	25.905
16.0	180.0	31.086
16.0	200.0	34.540
16.0	230.0	39.721
16.0	250.0	43.175
16.0	280.0	48.356
18.0	300.0	51.810
18.0	50.0	9.813
18.0	65.0	12.756
18.0	75.0	14.719
18.0	90.0	17.663
18.0	100.0	19.625
18.0	125.0	24.531
18.0	150.0	29.438
18.0	180.0	35.325
18.0	200.0	39.250
19.0	230.0	45.138
19.0	250.0	49.063
19.0	280.0	54.950
19.0	300.0	58.875
19.0	25.0	3.140
19.0	32.0	4.192
19.0	38.0	4.773
19.0	44.0	5.526
19.0	50.0	6.280
19.0	65.0	8.164
19.0	75.0	9.420
19.0	90.0	11.304
19.0	100.0	12.560
19.0	125.0	15.700
19.0	150.0	18.840
22.0	180.0	22.608
22.0	200.0	25.120
22.0	230.0	28.888
22.0	250.0	31.400
22.0	280.0	35.168
22.0	300.0	37.680
22.0	50.0	7.065
22.0	75.0	10.590
22.0	100.0	14.130
22.0	125.0	18.663
22.0	150.0	21.195
22.0	200.0	28.260
22.0	225.0	31.793
25.0	250.0	35.325
25.0	275.0	38.850
25.0	300.0	42.390
25.0	38.0	5.668
25.0	44.0	6.563
25.0	50.0	7.458
25.0	65.0	9.695
25.0	75.0	11.186
25.0	90.0	13.424
25.0	100.0	14.915
25.0	125.0	18.644
25.0	150.0	22.373
25.0	180.0	26.847





Equal Angles

Section size	Thickness t	Unit weight M
A x B(mm)	mm	kg/m
20 x 20	3.0	0.885
25 x 25	3.0	1.12
30 x 30	3.0	1.36
40 x 40	3.0	1.83
	4.0	2.42
	5.0	2.95
	6.0	3.52
45 x 45	4.0	2.74
	5.0	3.38
50 x 50	3.0	2.33
	4.0	3.06
	5.0	3.77
	6.0	4.43
	8.0	5.78
60 x 60	5.0	4.55
	6.0	5.42
65 x 65	5.0	5.00
	6.0	5.91
	8.0	7.66
70 x 70	6.0	6.38
	7.0	7.38
75 x 75	6.0	6.85
	8.0	9.03
	9.0	9.96
	12.0	13.0
80 x 80	6.0	7.32
	7.0	8.49
	8.00	9.66
90 x 90	6.0	8.28
	7.0	9.59
	8.0	10.9
	9.0	12.2
	10.0	13.3
	12.0	15.9
	13.0	17.0
100 x 100	6.0	9.2
	7.0	10.7
	8.0	12.2
	10.0	15.0
	12.0	17.8
	13.0	19.1
	15.0	21.9
120 x 120	8.0	14.7
	10.0	18.2
	12.0	21.6
	15.0	26.6
130 x 130	8.0	15.9
	9.0	17.9
	10.0	19.7
	12.0	23.5
	15.0	28.8
	16.0	30.7
150 x 150	10.0	23.0
	12.0	27.3
	15.0	33.6
	18.0	40.1
175 x 175	12.0	31.8
	15.0	39.4
200 x 200	15.0	45.3
	16.0	48.5
	18.0	54.2
	20.0	59.9
	24.0	71.1
	25.0	73.6
250 x 250	25.0	93.7
	28.0	104.0
	32.0	118.0
	35.0	128.0



Unequal Angles

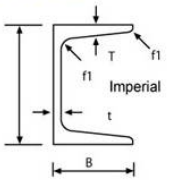
Section size	Thickness t		Unit weight M	
A x B x t	mm	in	kg/m	lb/ft
40 x 20 x 3	3	.118	1.37	.921
40 x 20 x 5	5	.197	2.16	1.451
50 x 35 x 4	4	.157	2.58	1.734
50 x 35 x 6	6	.236	3.72	2.500
60 x 50 x 5	5	.197	4.16	2.795
60 x 50 x 7	7	.276	5.66	3.803
65 x 50 x 5	5	.197	4.36	2.930
65 x 50 x 7	7	.276	5.94	3.992
65 x 50 x 9	9	.354	7.49	5.033
70 x 60 x 6	6	.236	5.91	3.971
70 x 60 x 8	8	.315	7.66	5.147
70 x 60 x 10	10	.394	9.42	6.330
75 x 50 x 6	6	.236	5.67	3.810
75 x 50 x 8	8	.315	7.35	4.939
75 x 50 x10	10	.394	9.03	6.068
75 x 65 x 6	6	.236	6.38	4.287
75 x 65 x 8	8	.315	8.29	5.571
75 x 65 x 10	10	.394	10.2	6.854
80 x 60 x 6	6	.236	6.38	4.287
80 x 60 x 8	8	.315	8.29	5.571
80 x 60 x 10	10	.394	10.2	6.854
80 x 70 x 6	6	.236	6.85	4.603
80 x 70 x 9	9	.354	9.96	6.693
80 x 70 x 12	12	.472	13.0	8.736
90 x 60 x 6	6	.236	6.85	4.603
90 x 60 x 9	9	.354	9.96	6.693
90 x 60 x 12	12	.472	13.0	8.736
90 x 75 x 6	6	.236	7.56	5.080
90 x 75 x 9	9	.354	11.0	7.392
90 x 75 x 12	12	.472	14.4	9.676
90 x 80 x 7	7	.276	9.04	6.075
90 x x80 x 10	10	.394	12.6	8.467
90 x 80 x 13	13	.512	16.0	10.751
100 x 65 x 7	7	.276	8.77	5.893
100 x 65 x 8	8	.315	9.94	6.679
100 x 65 x 9	9	.354	11.0	7.392
100 x 65 x 10	10	.394	12.3	8.265
100 x 65 x 12	12	.472	14.4	9.676

Section size	Thickness t		Unit weight M	
A x B x t	mm	in	kg/m	lb/ft
100 x 75 x 7	7	.276	9.32	6.263
100 x 75 x 8	8	3.15	10.60	7.123
100 x 75 x 10	10	.394	13.0	8.736
100 x 75 x 12	12	.472	15.4	10.348
100 x 75 x 13	13	.512	16.5	11.087
100 x 80 x 7	7	.276	9.59	6.444
100 x 80 x 10	10	.394	13.3	8.937
100 x 80 x 13	13	.512	17.0	11.423
100 x 90 x 7	7	.276	10.1	6.787
100 x 90 x 10	10	.394	14.1	9.475
100 x 90 x 13	13	.512	18.1	12.162
125 x 75 x 6.5	6.5	.256	9.98	6.706
125 x 75 x 7	7	.276	10.7	7.190
125 x 75 x 8	8	.315	12.2	8.198
125 x 75 x 10	10	.394	15.0	10.012
125 x 75 x 12	12	.472	17.8	11.961
125 x 75 x 13	13	.512	19.1	12.835
125 x 90 x 7	7	.276	11.5	7.728
125 x 90 x 10	10	.394	16.1	10.819
125 x 90 x 13	13	.512	20.6	13.843
137 x 102 x 6.4	6.4	.252	11.7	7.862
137 x 102 x 7.9	7.9	.311	14.5	9.744
137 x 102 x 9.5	9.5	.374	17.3	11.625
150 x 75 x 7	7	.276	12.1	8.131
150 x 75 x 9	9	.354	15.3	10.281
150 x 75 x 10	10	.394	17.0	11.423
150 x 75 x 12	12	.472	20.1	13.574
150 x 75 x 15	15	.591	24.8	16.665
150 x 90 x 9	9	.354	16.4	11.020
150 x 90 x 10	10	.394	18.2	12.230
150 x 90 x 12	12	.472	21.6	14.515
150 x 90 x15	15	.591	26.6	17.874
150 x 100 x 9	9	.354	17.1	11.490
150 x 100 x 12	12	.472	22.4	15.052
150 x 100 x 15	115	.591	27.7	18.614
175 x 90 x 9	9	.354	18.2	12.230
175 x 90 x 12	12	.472	23.8	15.993
175 x 90 x 15	15	.591	29.4	19.756
200 x 100 x 10	10	.394	23.0	15.455
200 x 100 x 12	12	.472	27.3	18.345
200 x 100 x 15	15	.591	33.7	22.645
200 x 150 x 12	12	.472	32.0	21.503
200 x 150 x 15	15	.591	39.6	26.610

Round Bars

Size	Diameter		Weight	
	mm	in	kg / m	kg / ft
6	6	0.236	0.222	0.0677
7	7	0.276	0.302	0.0921
8	8	0.315	0.395	0.120
9	9	0.354	0.499	0.152
10	10	0.394	0.617	0.188
11	11	0.433	0.746	0.227
12	12	0.472	0.888	0.271
13	13	0.512	1.042	0.318
14	14	0.551	1.208	0.368
15	15	0.591	1.387	0.423
16	16	0.630	1.578	0.481
17	17	0.669	1.782	0.543
18	18	0.709	1.998	0.609
19	19	0.748	2.226	0.678
20	20	0.787	2.466	0.752
21	21	0.827	2.719	0.829
22	22	0.866	2.984	0.910
23	23	0.906	3.261	0.994
24	24	0.945	3.551	1.082
25	25	0.984	3.853	1.174
26	26	1.024	4.168	1.270
27	27	1.063	4.494	1.370
28	28	1.102	4.833	1.473
29	29	1.142	5.185	1.580
30	30	1.181	5.549	1.691
31	31	1.220	5.925	1.806
32	32	1.260	6.313	1.924
34	34	1.339	7.127	2.172
35	35	1.378	7.552	2.302
36	36	1.417	7.990	2.435
38	38	1.496	8.902	2.713
40	40	1.575	9.864	3.006
42	42	1.654	10.875	3.315
44	44	1.732	11.936	3.638
46	46	1.811	13.045	3.976
48	48	1.890	14.204	4.329
50	50	1.969	15.413	4.698
55	55	2.165	18.650	5.684
60	60	2.362	22.195	6.759
65	65	2.559	26.048	7.939
70	70	2.756	30.209	9.207
75	75	2.953	34.679	10.570
80	80	3.150	39.457	12.026
85	85	3.346	44.543	13.576
90	90	3.543	49.938	15.220
95	95	3.740	55.640	16.958
100	100	3.937	61.651	18.790
105	105	4.134	67.971	20.717
110	110	4.331	74.598	22.736
115	115	4.528	81.534	24.850
120	120	4.724	88.778	27.058
125	125	4.921	96.330	29.360
130	130	5.118	104.191	31.756
135	135	5.315	112.360	34.246
140	140	5.512	120.837	36.829
145	145	5.709	129.622	39.507
150	150	5.906	138.716	42.279
160	160	6.299	157.828	48.104
170	170	6.693	178.173	54.304
180	180	7.087	199.751	60.881
190	190	7.480	222.562	67.834
200	200	7.874	246.606	75.162

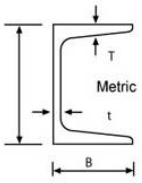
Channels



Imperial

Designation Size	Mass Per Metre	Thickness Web	Thickness Flange
DxB		t	T
mm	kg/m	mm	mm
102x51 (4 x 2)	10.42	6.1	7.6
127x64 (5 x 2 1/2)	14.90	6.4	9.2
152x76 (6 x 3)	17.88	6.4	9.0
152x89 (6 x 3 1/2)	23.84	7.1	11.6
178x76 (7 x 3)	20.84	6.6	10.3
178x89 (7 x 3 1/2)	26.81	7.6	12.3
203x76 (8 x 3)	23.82	7.1	11.2
203x89 (9 x3 1/2)	29.78	8.1	12.9
229x76 (9 x 3)	26.06	7.6	11.2
229x89 (9 x 3 1/2)	32.76	8.6	13.3
254x76 (10 x 3)	28.29	8.1	10.9
254x89 (10 x 3 1/2)	35.74	9.1	13.6
305x89 (12 x 3 1/2)	41.69	10.2	13.7
305x102 (12 x 4)	46.18	10.2	14.8
381x102 (15 x 4)	55.10	10.4.	16.3
432x102 (17 x 4)	65.54	12.2	16.8

Note: Other recognized standard and non-standard sections, particularly other thicknesses of the standard range, may also be available. Please discuss supply with LCG.



Metric

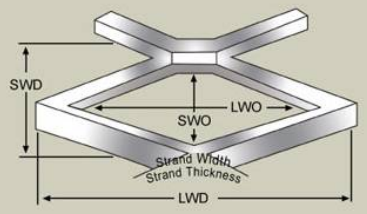
Designation Size	Mass Per Metre	Thickness Web	Thickness Flange
DxBxt		t	T
mm	kg/m	mm	mm
50x25x5	3.86	5.0	6.0
75x40x5	6.92	5.0	7.0
100x50x5	9.36	5.0	7.5
125x65x6	13.40	6.0	8.0
150x75x6.5	18.60	6.5	10.0
150x75x9	24.00	9.0	12.5.
180x75x7	21.40	7.0	10.5
180x90x7.5	27.10	7.5	12.5
200x80x7.5	24.60	7.5	11.0
200x90x8	30.30	8.0	13.5
230x80x8	28.40	8.0	12.0
230x90x8.5	33.10	8.5	13.5
250x80x8	30.20	8.0	12.5
250x90x9	34.60	9.0	13.0
250x90x11	40.20	11.0	14.5
280x100x9	38.80	9.0	13.0
280x100x11.5	48.20	11.5	16.0
300x90x9	38.10	9.0	12.0
300x90x10	43.80	10.0	15.5
300x90x12	48.60	12.0	16.0
380x100x10.5	54.50	10.5	16.0
380x100x13	62.00	13.0	16.5

Expanded**Metals**

Expanded Metal - Industrial Meshes

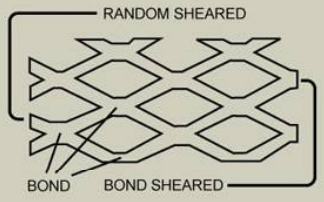
Expanded Metal products are produced from solid sheets or plates of carbon, galvanized and stainless steel, as well as aluminum and a variety of alloys of copper, nickel, silver, titanium and other metals. Because expanded metal is made from a solid sheet of metal, it can never unravel. The metal strands forming the open diamonds permit light, heat, air, liquids and sound to pass through – yet present a virtually un-penetrable barrier to intruders. Expanded Metal is an extraordinary versatile material – one with thousands of uses.

Expanded Metal - Industrial Meshes



Terminology

Style Dimension - Normal Dimension Short Way of Design (SWD)
Design Size - Actual Dimension SWD and LWD. Measured from a point to a corresponding point on the following design.
SWO - Short Way of Opening
LWO - Long Way of Opening
Standa - The Sides of the Design
Strand - The Sides of the Design
Strand Thickness - Gauge Thickness of Metal Expanded
Strand Width - Amount of metal fed under dics to produce metal strand.



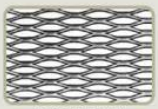
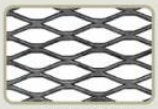
Shearing Terminology

Bond - Where two strands interact.
Tolerance - Minus 0 plus 1/2 the design size wether SWD or LWD.
Random - This type of shearing leaves prongs or jagged edges.

The Low Cost of Expanded Metals

In the expanding process, the sheet or plate is simultaneously slit and stretched – expanding the slits into diamond-shaped holes of uniform size and shape. No metal is lost in the expanding process. Expanded Metal is a great low cost alternative for perforated metal.

Basic Patterns

Standard	Flattened
 Standard 1/4"	 Flattened 1/4"
 Standard 1/2"	 Flattened 1/2"
 Standard 3/4"	 Flattened 3/4"
 Standard 1 1/2"	 Flattened 1 1/2"

Uses for Expanded Metal Industrial Meshes

- Filtration
- Fencing
- Shelving
- Racks
- Window Guards
- Air Intake Screens
- Interior Partitions & Barriers
- Cab/Truck Dividers
- Concrete Reinforcement
- Security Mesh
- Drive & Sidewalk Gates
- Light Diffusers
- Machine Guards
- Greenhouse Benches
- Heat Treating Baskets
- Food Processing Equipment
- Landscape & Utility Carts
- Walkways, Mezzanines & Stairways
- Doors & Cabinet Doors
- Ceiling Lighting
- Fuel Cells
- Gaskets
- Decorative Signs
- Topiary Wall

API/ASA**Pipes**

ASA / API Gr B / SA106 / X42

API / ASA Line Pipe Schedules

Wall; Will Thickness in Milimeter
Wt: Weight in Kilogram Per Meter

Norminal Pipe Size Inches	O..D mm	Schedule 10		Schedule 20		Schedule 30		Standard		Schedule 40		Schedule 60		Extra Strong		Schedule 80		Schedule 100		Schedule 120		Schedule 140		Schedule 160		Double Extra Strong	
		Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.	Wall	Wt.
1/8	10.3							1.7	0.357	1.7	0.357			2.4	0.470	2.4	0.470										
1/4	13.7							2.2	0.625	2.2	0.625			3.0	0.804	3.0	0.804										
3/8	17.1							2.3	0.848	2.3	0.848			3.2	1.10	3.2	1.10										
1/2	21.3							2.8	1.26	2.8	1.26			3.7	1.62	3.7	1.62							4.8	1.95	7.5	2.54
3/4	26.7							2.9	1.68	2.9	1.68			3.9	2.19	3.9	2.19							5.6	2.89	7.8	3.63
1	33.4							3.4	2.50	3.4	2.50			4.5	3.23	4.5	3.23							6.4	4.23	9.1	5.45
1 1/4	42.2							3.6	3.38	3.6	3.38			4.9	4.46	4.9	4.46							6.4	5.60	9.7	7.75
1 1/2	48.3							3.7	4.05	3.7	4.05			5.1	5.40	5.1	5.40							7.1	7.23	10.2	9.54
2	60.3							3.9	5.43	3.9	5.43			5.5	7.47	5.5	7.47							8.7	11.1	11.1	13.4
2 1/2	73.0							5.2	8.62	5.2	8.62			7.0	11.4	7.0	11.4							9.5	14.9	14.0	20.4
3	88.9							5.5	11.3	5.5	11.3			7.6	15.3	7.6	15.3							11.1	21.3	15.2	27.7
3 1/2	101.6							5.7	13.6	5.7	13.6			8.1	18.6	8.1	18.6									16.2	34.0
4	114.3							6.0	16.1	6.0	16.1			8.6	22.3	8.6	22.3			11.1	28.3			13.5	33.5	17.1	41.1
5	141.3							6.6	21.8	6.6	21.8			9.5	30.9	9.5	30.9			12.7	40.2			15.9	49.0	19.0	57.4
6	168.3							7.1	28.2	7.1	28.2			11.0	42.5	11.0	42.5			14.3	54.2			18.3	67.5	21.9	79.1
8	219.1			6.4	33.3	7.0	36.7	8.2	42.5	8.2	42.5	10.3	53.1	12.7	64.6	12.7	64.6	15.1	75.8	18.3	90.7	20.6	101	23.0	112	22.2	108
10	273.0			6.4	41.7	7.8	50.9	9.3	60.2	9.3	60.2	12.7	81.5	12.7	81.5	15.1	95.8	18.3	115	21.4	133	25.4	156	28.6	172	25.4	155
12	323.9			6.4	49.7	8.4	65.1	9.5	73.8	10.3	79.7	14.3	109	12.7	97.4	17.4	132	21.4	160	25.4	187	28.6	208	33.3	239	25.4	187
14	355.6	6.4	54.6	7.9	68.1	9.5	81.2	9.5	81.2	11.1	94.3	15.1	126	12.7	107	19.0	158	23.8	195	27.8	224	31.8	253	35.7	281		
16	406.4	6.4	62.6	7.9	77.9	9.5	93.1	9.5	93.1	12.7	123	16.7	160	12.7	123	21.4	203	26.2	245	30.9	286	36.5	333	40.5	365		
18	457.2	6.4	70.5	7.9	87.8	11.1	122	9.5	105	14.3	156	19.0	206	12.7	139	23.8	254	29.4	310	34.9	363	39.7	408	45.2	459		
20	508.0	6.4	78.5	9.5	117	12.7	155	9.5	117	15.1	183	20.6	248	12.7	155	26.2	311	32.5	381	38.1	441	44.4	508	50.0	564		
22	558.8	6.4	86.4	9.5	129	12.7	171	9.5	129			22.2	294	12.7	171	28.6	373	34.9	451	41.3	526	47.6	600	54.0	671		
24	609.6	6.4	94.7	9.5	141	14.3	210	9.5	141	17.4	255	24.6	355	12.7	187	30.9	441	38.9	547	46.0	639	52.4	719	59.5	807		
26	660.4	7.9	128	12.7	203			9.5	153					12.7	203												
28	711.2	7.9	138	12.7	219	15.9	272	9.5	165					12.7	219												
30	762.0	7.9	147	12.7	234	15.9	292	9.5	176					12.7	234												
32	812.8	7.9	157	12.7	250	15.9	312	9.5	188					12.7	250												
24	883.6	7.9	167	12.7	286	15.9	332	9.5	200					12.7	266												
36	914.4	7.9	177	12.7	282	15.9	351	9.5	212					12.7	282												

• Socket Welding Fitting

• Threaded Fitting

• Outlets

Applicable Standard

• ANSI B16.11, MSS SP-79, BS3799

Available Materials

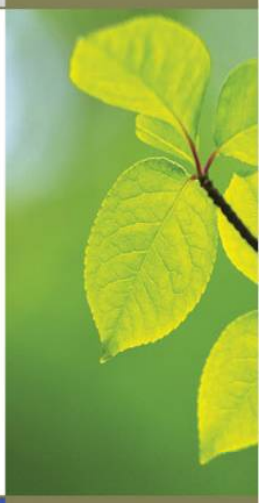
• Carbon steel (A105)
• High yield caron steel (A694F52/60/65/70)
• Low temp carbon steel
(A350LF2, LF3/WPL 420)
• Stainless steel
(A182F304/L, 316/L, 317, 321, 310, 347)
• Duplex (A182F51F53)

Production Ranges

• Size: 1/8" ~ 4" (3000#, 6000#) - Fittings
1/2" ~ 36" (150# - 2500#)

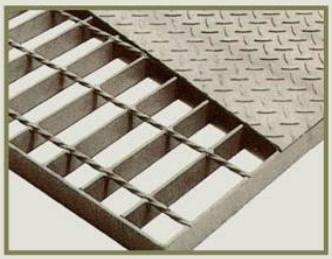
Gratings

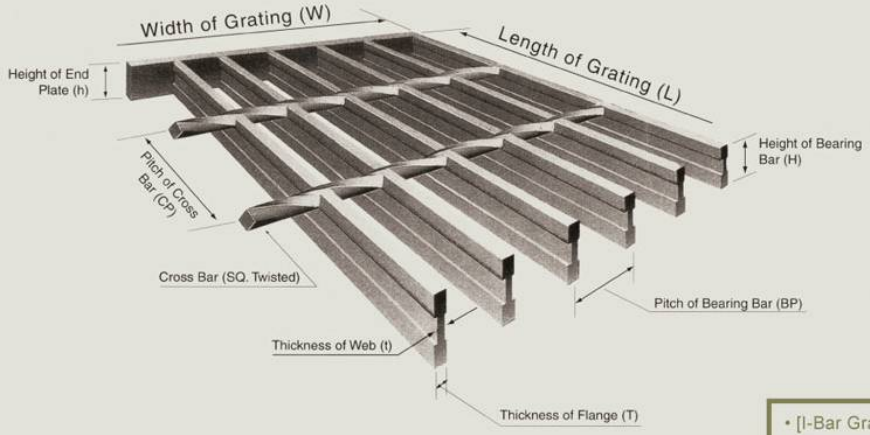
Grating is fabricated of varying size load bearing bars at various pitches, with square twisted cross rods forge welded to the upper edges. The simultaneous application of high electrical current and hydraulic pressure in the welding process produces a grate of considerable rigidity and strength capable of supporting load and giving maximum resistance to heavy wear and distortion.



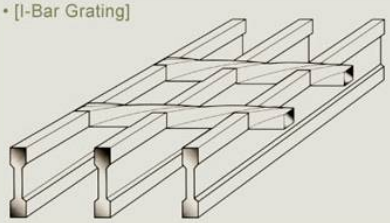
Industrial Gratings

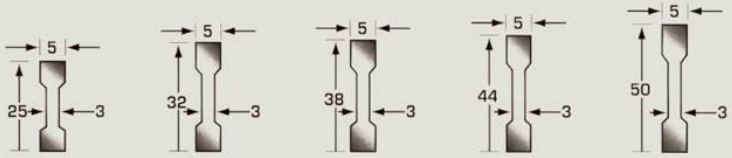
LCG supplies high quality industrial gratings that made of material comply with BS-EN 10025 GrS275JR, ASTM A36 and JISG3101 SS400. Size is either in standard nominal panel size of 1M width x 6M length or custom sizes upon request. Surface treatment is available is form of GALVANIZED or PLAIN basis.



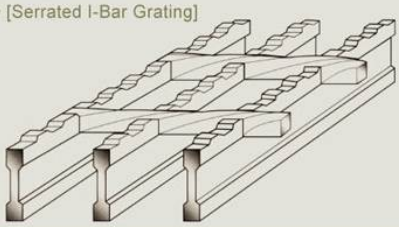


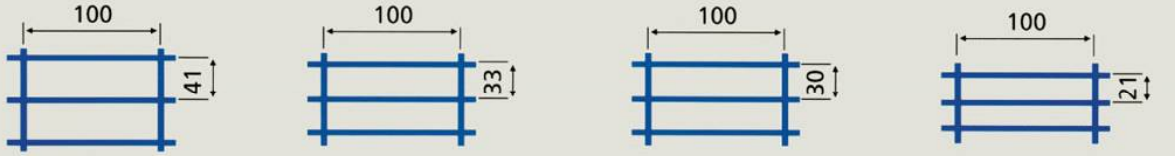
• [I-Bar Grating]

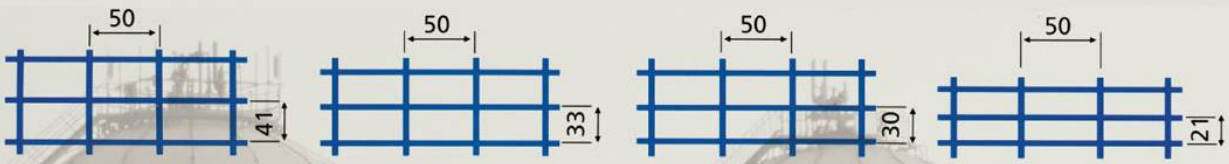




• [Serrated I-Bar Grating]







Metal**Shearing**

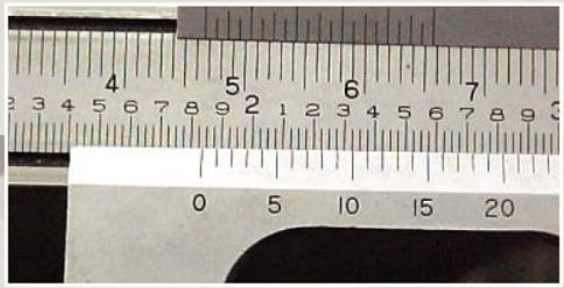
LCG offers a range of hydraulic shearing services to produce the exact cut size steel or alloy material to meet your needs. Shearing is a cutting force applied perpendicular to material causing the material to yield and break. Shearing is a process for cutting metal material to size out of a larger stock in roll or plate form.

Hydraulic Metal Shearing

Shears are used as the preliminary step in preparing smaller shape for numerous steel fabrication works or for other manufacturing processes which will significantly minimized unnecessary material wastage and cutting works. LCG caters special metal shearing cuts including square cutting and miter cutting. All shearing jobs are controlled and monitored by ISO 9001:2000 systems.

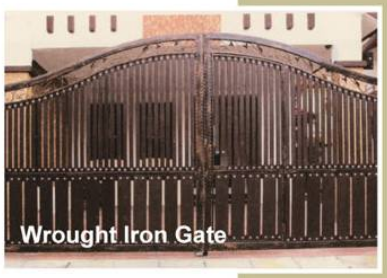
Shearing Capacity

Gauge	:	Our shears are capable of shearing metals up 38mm thickness
Length	:	Our shears are capable of shearing metal with up to a custom length
Width	:	Our shears are capable of shearing metal with up to a 11' width
Materials	:	Hot Rolled Steel (High-Tensile Plates, Ship Plates, Boiler Plates and etc), Aluminum Plates, Stainless Steel, Cold Rolled Steel, Metallic Coated Steel, Low Alloy and others.



Others

We also supply materials for....



Fire-Fighting Equipment

Home Appliances

Furniture

Refer to JAPMAS STEEL for.....

COLD-FORMED STEEL SECTIONS

RECTANGULAR HOLLOW SECTIONS

SQUARE HOLLOW SECTIONS

CIRCULAR SECTIONS

CHANNELS

COLD-FORMED ANGLES

C-SECTIONS

Z-SECTIONS

OVAL HOLLOWS

STRING HOLLOWS

HEXAGON HOLLOWS

RECTANGULAR WROUGHT HOLLOWS

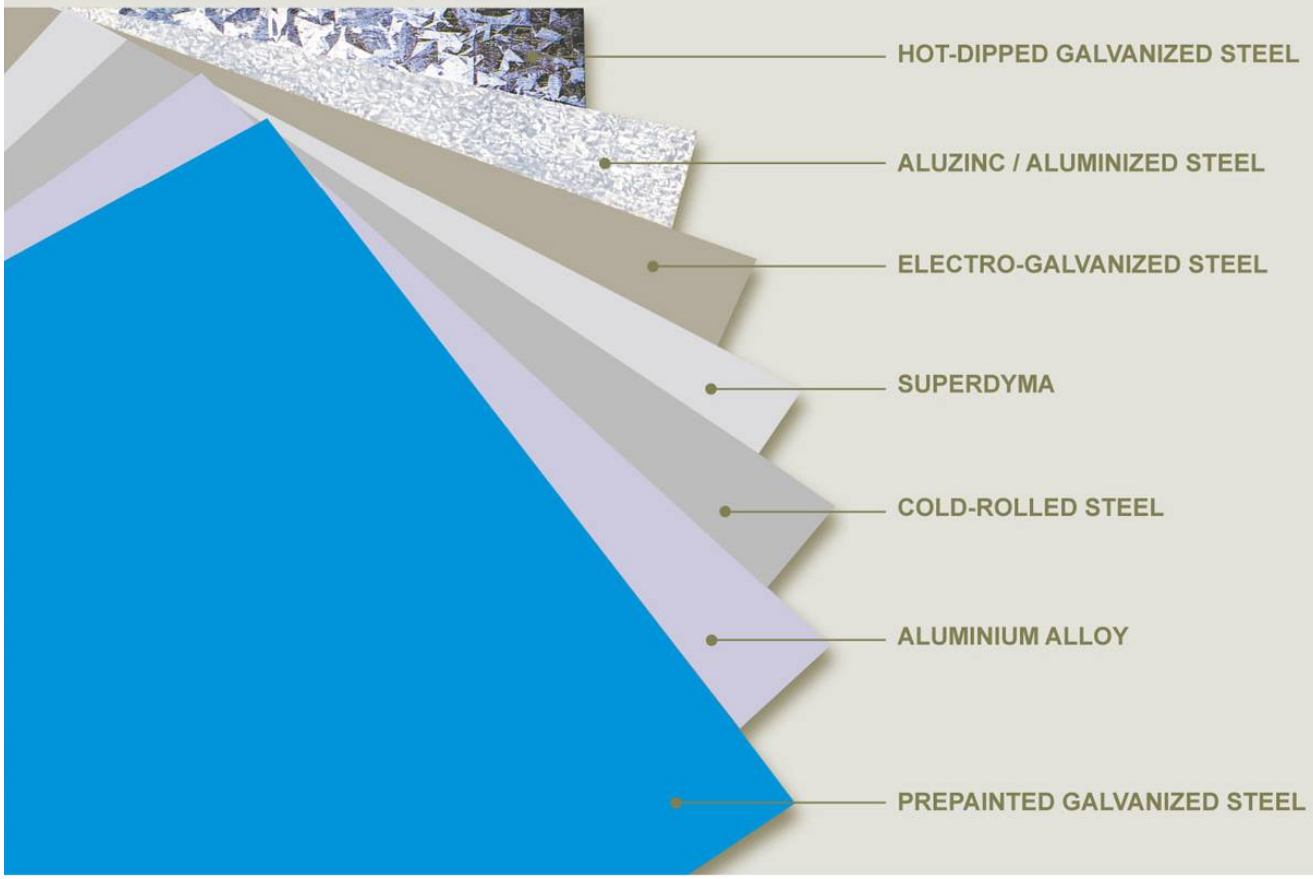
SQUARE WROUGHT HOLLOW

HEXAGON WROUGHT HOLLOWS

OVAL WROUGHT HOLLOWS

COLD-FORMED WROUGHT ANGLES

SHEET COIL / SHEET / STRIP



HOT-DIPPED GALVANIZED STEEL

ALUZINC / ALUMINIZED STEEL

ELECTRO-GALVANIZED STEEL

SUPERDYMA

COLD-ROLLED STEEL

ALUMINIUM ALLOY

PREPAINTED GALVANIZED STEEL

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