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INDIA'S
No. 1
STRUCTURAL STEEL TUBE COMPANY



BROADENING THE CIRCLE OF INNOVATION WITH SUPERIOR STEEL SOLUTIONS

CIRCULAR PRODUCT PROFILE



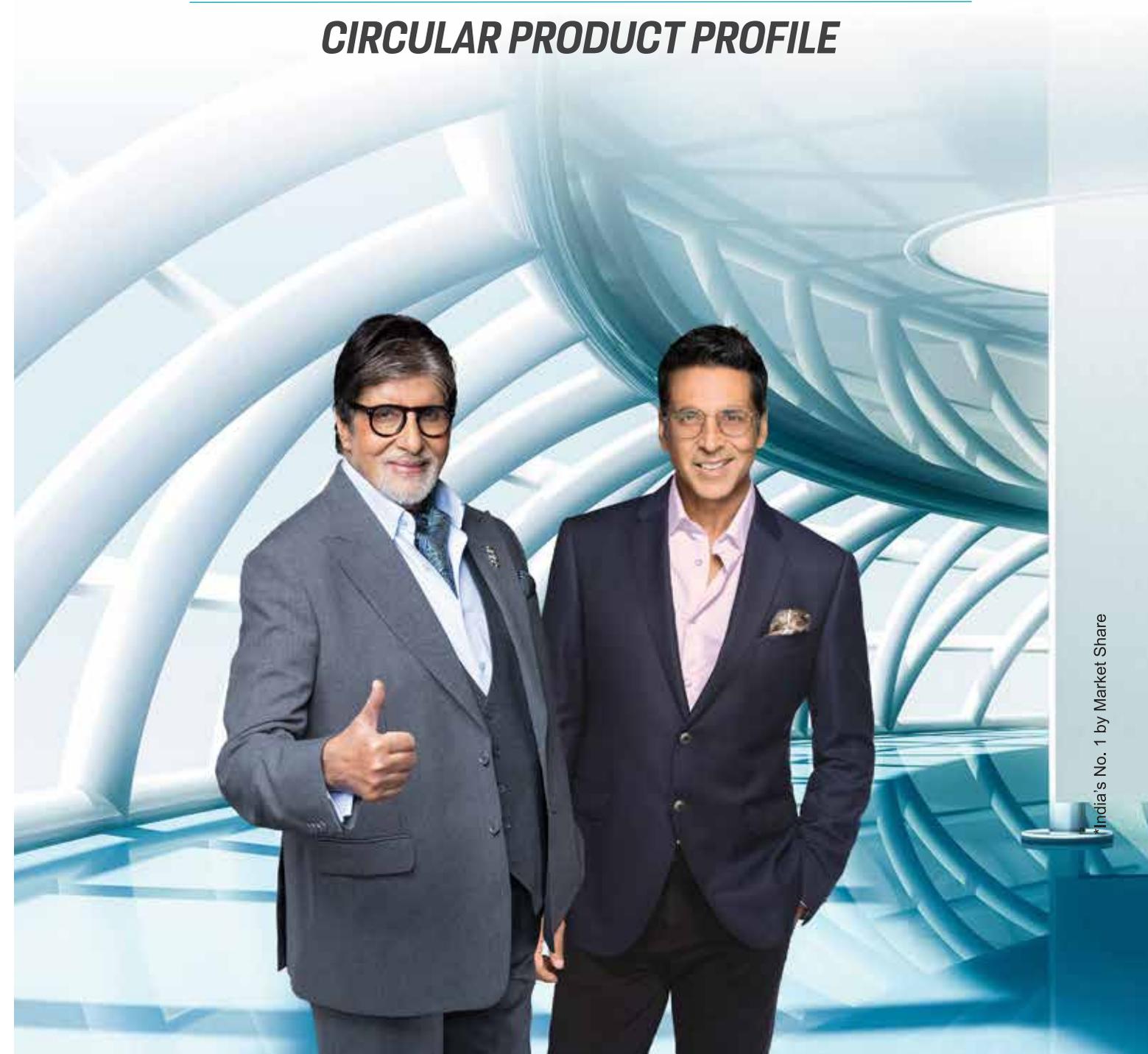
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*India's No. 1 by Market Share



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Sudesh Group

Sudesh Group is India's leading Steel Tubes and PVC Pipes manufacturer with 14 plants across different locations in the country. It's a pioneer in steel tubes of different types and shapes. For over 3 decades, SG Group has been revolutionizing the Steel Tubes manufacturing industry.

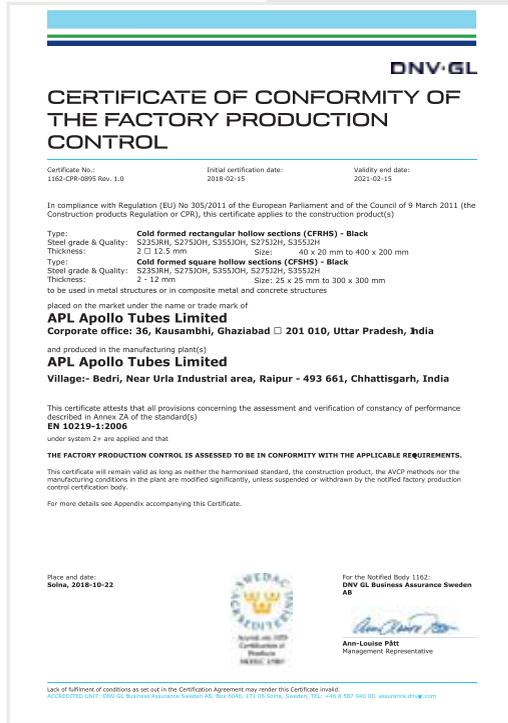


APL Apollo, a part of SG Group, is the country's largest manufacturer of steel pipes and tubes. Using High Frequency Induction Welding Technique (HFIW), APL Apollo has a capacity to produce 3.6 million tonnes of pipes per annum. The company is the unrivalled pioneer of Direct Forming Technology (DFT) as well as many other innovative products in the country.

OUR CONSTANT DRIVE FOR INNOVATION AND EYE FOR DETAIL HAS EARNED US MANY PRESTIGIOUS ACCREDITATIONS



ISO CERTIFICATE-14001-2015



CE EN 10219



CE EN 10255



ISO CERTIFICATE-45001-2018



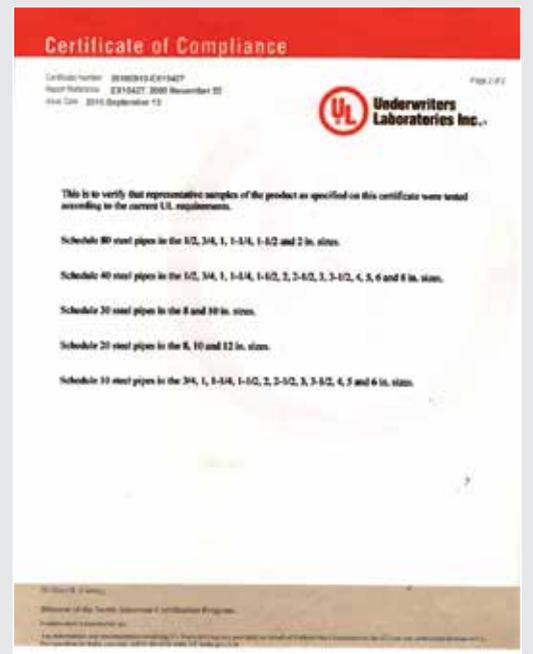
ISO CERTIFICATE-9001-2015



TWO STAR EXPORT HOUSE CERTIFICATE



UL CERTIFICATE



UL CERTIFICATE

Size Range:

Outside Diameter:

15.88mm - 355.6mm

Thickness Range:

0.6mm - 10mm

Length:

3.0 meter to 12.0 meter

Applications:

Liquid Transmission

Idlers

Mechanical And General

Engineering

Structural

Water And Sewage

Water Wells

Fire Fighting

Piling

Agriculture

Sprinkler System

Green House

Fencing & Many More

Tests Performed:

Hydrostatic Test

Eddy Current Test

Flattening/Flaring Test/Bend Test

Chemical analysis

Other tests as required by the relevant standard

NOTE: For details please refer specification sheet.

Production Standards:

IS:1239(PART-I)/2004, BS:1387-1985

DIN2439, IN2440, DIN2441, DIN2444,

EN:10255:2004, EN:10240:1998,

EN:10219:2006

IS:9295-1983

IS:3601-2006

IS:1161-2014

IS:3589/2001

IS:4270:2001

ASTM A53 GR A&B SCH 20/40/80

ASTM A795

ASTM A135

BSEN 39:2001

EN:10217-1

AS:1074

AS NZS:1163

ASTM A252

ASTM A500

Finishing Operations:

Plain End

Bevelled

Threaded and Socketed

Grooved

Cut lengths

Surface Protection:

Black (self colored uncoated)

Outside protective coating oil/
varnish/Lacquered

Hot dip Galvanised

Pre-Galvanised

Oiled/Varnish



Hot Dip Galvanised

Pre-Galvanised



Black (Self colored uncoated)

Technical Data of MS Black Round Tubes

Specification 15:1239 (Part-1) 2004 - DIN 2439, DIN 2440, DIN 2441
(Equivalent BS: 1387: 1985 / EN 10255: 2004 / DIN 2444)

NB and Series	Outside Diameter		Wall Thickness		Nominal Weight				
	Min.	Max			Plain End		Screwed & Socketed		
	mm	mm	mm	SWG	Kg/M	Meters/Tonnes	Kg/M	Meters/Tonnes	
15	L	21.0	21.4	2.0	14	0.947	1052	0.96	1046
	M	21.0	21.8	2.6	12	1.21	826	1.22	820
	H	21.0	21.8	3.2	10	1.44	694	1.45	690
20	L	26.4	26.9	2.3	13	1.38	725	1.39	719
	M	26.5	27.3	2.6	12	1.56	641	1.57	637
	H	26.5	27.3	3.2	10	1.87	535	1.88	532
25	L	33.2	33.8	2.6	12	1.98	505	2.00	500
	M	33.3	34.2	3.2	10	2.41	415	2.43	411.5
	H	33.3	34.2	4.0	8	2.93	341	2.95	339
32	L	41.9	42.5	2.6	12	2.54	394	2.57	389
	M	42.0	42.9	3.2	10	3.1	322	3.13	319
	H	42.0	42.9	4.0	8	3.79	264	3.82	262
40	L	47.8	48.4	2.9	11	3.23	310	3.27	306
	M	47.8	48.8	3.2	10	3.56	281	3.60	278
	H	47.9	48.8	4.0	8	4.37	229	4.41	227
50	L	59.6	60.2	2.9	11	4.08	245	4.15	241
	M	59.7	60.8	3.6	9	5.03	199	5.10	196
	H	59.7	60.8	4.5	7	6.19	161	6.26	160
65	L	75.2	76	3.2	10	5.71	175	5.83	171.5
	M	75.3	76.6	3.6	9	6.42	156	6.54	153
	H	75.3	76.6	4.5	7	7.93	126	8.05	124
80	L	87.9	88.7	3.2	10	6.72	149	6.89	145
	M	88.0	89.5	4.0	8	8.36	120	8.53	117
	H	88.0	89.5	4.8	6	9.9	101	10.10	96
100	L	113.0	113.9	3.6	9	9.75	102	10.00	100
	M	113.1	115	4.5	7	12.2	82	12.50	80
	H	113.1	115	5.4	5	14.5	69	14.80	67.5
125	M	138.5	140.8	4.8	6	15.9	63	16.40	61
	H	138.5	140.8	5.4	5	17.9	56	18.40	54
150	M	163.9	166.5	4.8	6	18.9	53	19.50	51
	H	163.9	166.5	5.4	5	21.3	47	21.90	46

Thickness & Mass are applicable for Black & Galvanised Steel Tubes as per clause 8.1.1 of IS : 1239 (Part-1) 2004
This specification conforms to CE Mark conferred by Det Norske Veritas, Netherlands.

Tolerance

A - Thickness	Tolerance	B- Weight	Tolerance	Length Tolerance
1. Light Tubes	+ not limited -8%	1. Single Tube (Light Series)	+10% -8%	Unless otherwise Specified 4 to 7 mtrs. Can also be supplied in Fix Lengths ±5cm.
2. Medium & Heavy Tubes	+ not limited -10%	2. Single Tube (Medium & Heavy Series)	±10%	
		3. For quantities per load of 10 tonnes minimum (Light Series)	+7.5% - 5%	
		4. For quantities per load of 10 tonnes minimum (Medium and Heavy Series)	±7.5%	

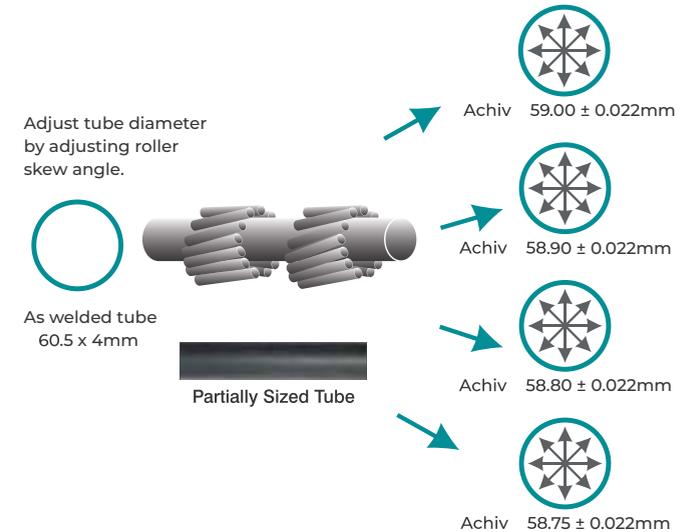
ERW Steel tubes for idlers for Belt conveyors as per IS 9295 – 1983 Dimension and Nominal Masses

Outside Diameter	Thickness	Mass	Meters
mm	mm	Kg./mtr	Tonnes
63.50	3.65	5.39	186
	4.05	5.94	168
	4.50	6.55	153
	4.85	7.01	143
	5.40	7.74	143
76.10	3.65	8.89	129
	4.05	6.52	153
	4.50	7.20	139
	4.85	7.95	126
	5.40	8.52	117
88.90	3.65	9.42	106
	4.05	10.84	92
	4.50	8.74	118
	4.85	9.37	107
	5.40	10.05	99
101.60	3.65	12.83	78
	4.05	11.12	90
	4.50	9.74	103
	4.85	10.78	93
	5.40	11.57	86
114.30	3.65	12.19	78
	4.05	13.09	76
	4.50	14.50	69
	4.85	13.59	53
	5.40	14.61	74
127.0	3.65	16.19	68
	4.05	18.75	62
	4.50	15.00	53
	4.85	16.99	58.8
	5.40	17.89	56
139.70	3.65	20.73	48
	4.05	16.41	61
	4.50	17.65	57
	4.85	19.58	51
	5.40	22.70	44
152.40	3.65	17.15	58
	4.05	18.44	49
	4.50	20.46	42
	4.85	23.72	49
	5.40	24.67	41
165.10	3.65	18.18	55
	4.05	19.55	51
	4.50	21.69	46
	4.85	25.69	40
	5.40	25.08	40
193.70	3.65	29.12	40
	4.05	28.46	34
219.10	3.65	33.06	34
	4.05		

a. Outside diameter	± 0.8%
b. Ovality below 168.3mm	0.5mm
c. Ovality including 168.3mm & above	1.0mm
d. Weight kg/mtr	
- Single tube	±10%
e. For truck load of 10 tonnes	±7.5%
f. Thickness	±10%
g. Grade	
- ERW grade	YST 210 & YST 240 & YST 310

Advantages of RSM Technology

- In between Non-Standard Diameter possible online
In between Non-Standard Diameter there can be adjustment without change of tooling. Diameter accuracy and roundness achieved with Rotary sizing technology is of very high standard as compared to conventional sizing mills.
- Surface Finish Improves
Tooling is adjustable and can manufacture all sizes within its operating range with improved dimensional accuracy. The surface finish of incoming strip is improved by 30%. Cold work is reduced & energy savings are considerable.

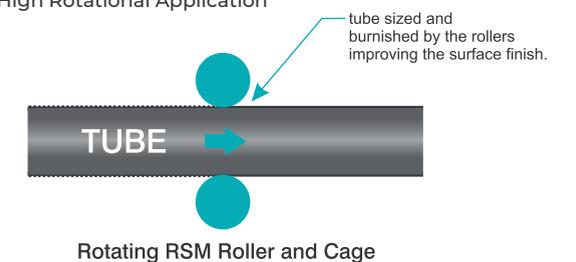


- Even and Low Residual Stress
Typically two cages are used in RSM which are cum rotating. This is required to eliminate any torsion load which may be induced into the tube by the process. This results in even reduction on full surface of tube. Sizing the tube in only 2 passes keeps the residual stress low thereby preserving more of the material elongation test tube mill manipulation.

Tubes that are processed through RSM have no significant change in residual stress in the traverse direction. In the longitudinal direction, there is a large reduction in the surface residual tensile stress.

END USES

- Idler Tubes for Conveyors
- Propeller Shaft Tubes
- Bobbin Tubes for Textile Industry
- High Precision Diameter
- High Rotational Application



ERW steel tube for water & sewage purpose conforming to IS : 3589/2001

N. B size	Outside Diameter	Wall thickness	Plain end	
			Mass	Meters
mm	mm	mm	Kg./mtr	Tonnes
150	168.3	2.60	10.60	94
		3.20	13.00	77
		4.00	16.20	62
		4.50	18.20	55
		5.00	20.10	50
175	193.7	6.30	25.20	40
		2.60	12.30	81
		3.60	16.90	59
		4.50	21.00	48
200	219.1	6.30	29.10	34
		2.60	23.80	72
		3.60	33.10	52
		4.50	23.80	42
250	273	6.30	33.10	30
		3.60	23.90	42
		4.00	26.50	38
		5.00	33.90	30
		6.30	41.40	24
300	323.9	7.10	46.57	21
		8.00	52.30	19
		10.00	64.90	15
		4.00	31.60	32
		5.00	35.40	28
350	355.6	5.60	44.00	23
		7.10	55.50	18
		6.40	48.33	21
		7.10	61.02	16
		7.90	67.74	15
		8.70	74.42	13
		9.50	81.08	12

Tolerance

A. Outside diameter of pipe	±0.75%
B. Ovality	=Max. 1%
C. Thickness	±10%
D. Length	
Unless other specified, length are in single random length of 4 to 7 meter.	
E. Mass per truck load of 10 tonnes of above	+7.5%

Mechanical Properties

Grade	T.S. Mpa MIN	Y.S. Mpa MIN	% age Elongation of MIN
Fe 330	330	195	20
Fe 410	410	235	18
Fe 450	450	275	15

Note: these are preferred OD & thickness. Other sizes not included may be supplied as specified by purchaser.

ERW steel tube for water walls conforming to IS : 4270/ 2001 plain end casing pipes / screwed and socketed casing pipes

N. B size	Outside Diameter	Wall thickness	Nominal weight		Socket	Socket Length (min)
			Kg/m	m/tonnes		
mm	mm	mm	mm	mm	mm	mm
100	114.3	5.0	13.48	74	130	144.3
		5.4	14.5	69	157	120.6
125	141.3	5.0	16.8	59	184	127
		5.4	18.1	55		
150	168.3	7.1	23.5	42.5	211.16	152.4
		5.0	20.13	50		
		5.4	21.6	46		
		7.1	28.2	35.5		
175	193.7	5.4	25.1	40	291	177.8
		6.4	29.6	34		
200	219.1	8.0	36.6	27	346	177.8
		5.4	28.46	35		
		8.0	33.6	30		
		10.0	41.6	24		
250	273.1	7.1	46.57	21		
		8.0	52.3	19		
300	323.9	10.0	64.9	15		
		7.1	55.47	18		
		8.0	62.3	16		
		10.0	77.4	13		
350	355.6	5.6	48.33	21		
		6.4	55.11	18		
		7.1	61.02	16		
		7.9	67.74	15		
		8.7	74.42	13		
		9.5	81.08	12		

Tolerance

a. Outside diameter of pipe	±1%
b. Thickness Up to 406.4mm OD	(+)15% (-)12.5%
c. Weight	(+)10%
- Single tube	(-)8%
d. Length	
Unless otherwise specified	4 to 7 mtrs

Mechanical Properties

Grade	Y.S. (min) Mpa MIN	T.S. (min) Mpa MIN	% age MIN. Elongation on 5.65/so=GI.
Fe 410	235	410	15%
Fe 450	275	450	13%

Steel tubes for structural purposes conforming to IS:1161-2014

NB	OD	Thk	Mass	Area of Cross-Section	Internal Volume	Surface		Moment of Inertia	Modulus of Section	Radius of Gyration	Square of Radius of Gyration
						External	Internal				
mm	mm	mm	kg/m	cm ²	cm ³ /m	cm ³ /m	cm ³ /m	cm ² /m	cm ³	cm	cm ²
(I)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
15	21.3	2	0.952	1.21	235	669	543	0.57	0.54	0.69	0.47
	21.3	2.6	1.20	1.53	204	669	506	0.68	0.64	0.67	0.45
	21.3	3.2	1.43	1.82	174	669	468	0.77	0.72	0.65	0.42
20	26.9	2.3	1.40	1.78	391	845	701	1.36	1.01	0.87	0.76
	26.9	2.6	1.56	1.98	370	845	682	1.48	1.10	0.86	0.75
	26.9	3.2	1.87	2.38	330	845	644	1.70	1.27	0.85	0.71
25	33.7	2.6	1.99	2.54	638	11159	895	3.09	1.84	1.10	1.22
	33.7	3.2	2.41	3.07	585	1059	858	3.60	2.14	1.08	1.18
	33.7	4	2.93	3.73	519	1059	807	4.19	2.49	1.06	1.12
32	42.4	2.6	2.55	3.25	1087	1332	1169	6.46	3.05	1.41	1.99
	42.4	3.2	3.00	3.94	1018	1332	1131	7.62	3.59	1.39	1.93
	42.4	4	3.79	4.83	929	1332	1081	8.99	4.24	1.36	1.86
40	48.3	2.9	3.25	4.14	1419	1517	1335	10.70	4.43	1.61	2.59
	48.3	3.2	3.56	4.53	1379	1517	1316	11.59	4.80	1.60	2.56
	48.3	4	4.37	5.57	1276	1517	1266	13.77	5.70	1.57	2.47
50	60.3	2.9	4.11	5.23	2333	1894	1712	21.59	7.16	2.03	4.13
	60.3	3.6	5.03	6.41	2215	1894	1668	25.87	8.58	2.01	4.03
	60.3	4.5	6.19	7.89	2067	1894	1612	30.90	10.25	1.98	3.92
65	76.1	2.9	5.24	6.67	3882	2391	2209	44.74	11.76	2.59	6.71
	76.1	3.6	6.44	8.20	3728	2391	2165	54.01	14.19	2.57	6.59
	76.1	4.5	7.95	10.12	3536	2391	2108	65.12	17.11	2.54	6.43
80	88.9	3.2	6.76	8.62	5346	2793	2592	79.21	17.82	3.03	9.19
	88.9	4	8.38	10.67	5140	2793	2542	96.34	21.67	3.00	9.03
	88.9	4.8	9	12.68	4939	2793	2491	112.49	25.31	2.98	8.87
90	101.6	3.6	8.70	11.08	6999	3192	2966	133.24	26.23	3.47	12.02
	101.6	4	9.63	12.26	6881	3192	2941	146.28	28.8	3.45	11.93
	101.6	4.8	11.46	14.60	6648	3192	2890	171.39	33.74	3.43	11.74
100	114.3	3.6	9.83	12.52	9009	3591	3365	191.98	33.59	4.33	15.33
	114.3	4.5	12.19	15.52	8709	3591	3308	234.32	41.00	4.32	15.10
	114.3	5.4	14.5	18.47	8413	3591	3252	274.54	48.04	4.3	14.86
110	127	4.5	13.59	17.32	10936	3990	3707	325.29	51.23	4.33	18.78
	127	4.8	14.47	18.43	10825	3990	3688	344.50	54.25	4.32	18.69
	127	5.4	16.19	20.63	10605	3990	3651	382.04	60.16	4.3	18.52
125	139.7	4.5	15.00	19.11	13417	4389	4106	437.20	62.59	4.78	22.87
	139.7	4.8	15.97	20.34	13295	4389	4087	463.33	66.33	4.77	22.78
	139.7	5.4	17.89	22.78	13050	4389	4050	514.50	73.66	4.75	22.58
135	152.4	4.5	16.41	20.91	16151	4788	4505	572.24	75.10	5.23	27.37
	152.4	4.8	17.47	22.26	16016	4788	4486	606.76	79.63	5.22	27.26
	152.4	5.4	19.58	24.94	15748	4788	4448	674.51	88.52	5.20	27.05
150	165.1	4.5	17.82	22.70	19138	5187	4904	732.57	88.74	5.68	32.27
	165.1	4.8	18.98	24.17	18991	5187	4885	777.13	94.14	5.67	32.15
	165.1	5.4	21.27	27.09	18699	5187	4847	864.70	104.75	5.65	31.92
	165.1	5.9	23.20	29.50	18465	5189	4818	970.00	113.40	5.63	31.72
	165.1	6.3	24.67	31.43	18265	5187	4791	992.28	120.20	5.62	31.57
150	168.3	4.5	18.18	23.16	19931	5287	5005	777.22	92.36	5.79	33.56
	168.3	4.8	19.35	24.66	19781	5287	4986	824.57	97.99	5.78	33.44
	168.3	5.4	21.69	27.64	19483	5287	4948	917.69	109.05	5.76	33.21
	168.3	6.3	25.17	32.06	19040	5287	4891	1053.42	125.18	5.73	32.85
175	193.7	4.8	22.36	28.49	26619	6085	5784	1271.39	131.27	6.68	44.63
	193.7	5.4	25.08	31.94	26273	6085	5746	1416.97	146.31	6.66	44.36
	193.7	5.9	27.33	34.81	25987	6085	5715	1536.13	158.61	6.64	44.13
	193.7	6.3	29.12	37.09	25759	6085	5689	1630.05	168.31	6.63	43.95

Steel tubes for Structural purposes conforming to IS:1161-2014

NB	OD	Thk	Mass	Area of Cross-Section	Internal Volume	Surface		Moment of Inertia	Modulus of Section	Radius of Gyration	Square of Radius of Gyration
						External	Internal				
mm (1)	mm (2)	mm (3)	kg/m (4)	cm ² (5)	cm ³ /m (6)	cm ³ /m (7)	cm ³ /m (8)	cm ² /m (9)	cm ³ (10)	cm (11)	cm ² (12)
200	219.1	4.8	25.37	32.32	34471	6 883	6 582	1856.03	169.42	7.58	57.43
	219.1	5.6	29.49	37.56	33 947	6 883	6 531	2141.61	195.49	7.55	57.02
	219.1	5.9	31.02	39.52	33 751	6 883	6 513	2247.01	205.11	7.54	56.86
	219.1	6.3	33.06	42.12	33 491	6 883	6 487	2386.14	217.81	7.53	56.65
	219.1	8	41.65	53.06	32 397	6 883	6 381	2959.63	270.16	7.47	55.78
	219.1	10	51.57	65.69	31 134	6 883	6 255	3598.44	328.47	7.40	54.78
250	273	5.9	38.86	49.51	53 584	8 577	8 206	4417.18	323.60	9.45	89.22
	273	6.3	41.44	52.79	53 256	8 577	8 181	4695.82	344.02	9.43	88.96
	273	8	52.28	66.60	51 875	8 577	8 074	5851.71	428.70	9.37	87.86
	273	10	64.86	82.62	50 273	8 577	7 948	7154.09	524.11	9.31	86.59
300	323.9	6.3	49.34	62.86	76111	10 176	9 780	7928.90	489.59	11.23	126.14
	323.9	8	62.32	79.39	74 458	10 176	9 673	9910.08	611.92	11.17	124.82
	323.9	10	77.41	98.61	72 536	10 176	9 547	12158.34	750.75	11.10	123.29
350	355.6	8	68.58	87.36	90 579	11 172	10 669	13201.37	742.48	12.29	151.11
	355.6	10	85.23	108.57	88 457	11 172	10 543	16223.50	912.46	12.22	149.42

*254 mm OD is available on demand.

Mechanical Properties

Grade	Y.S. (min) Mpa	T.S. (min) Mpa	% age Elongation
YST- 210	210	330	20
YST- 240	240	410	17
YST- 310	310	450	14
YST- 355	355	490	10

Weight

Single Tube	Tolerance
10 ton lot	±10%

Tolerance

Tolerance

1. On outside diameter up to & including 48.3= +0.4mm/-0.8mm
2. Over 48.3mm=±1%

Thickness

For all size	Tolerance
Welded tubes	±10%

Tolerance

APL Apollo Tubes Limited offers a broad range of high quality Scaffolding Components. The product range includes SCAFFOLD TUBES as per EN-39. Scaffolding Components includes cuplock scaffolding, wedgelock scaffolding & support tubes, fittings (couplers) and framework components and accessories as well as a vast range of other components.

Tube Scaffoldings are widely used for supporting men and material, tools and tackles during construction, alteration demolition and maintenance work because of their several advantages over conventional type of timber bamboo scaffolding.

We offer Scaffolding Tubes which also include complete range of components that are strong, durable and economical. These items are ideally suited for wide application in construction and building structures.



Scaffolding Tubes

Size		Thickness		Ovality		Weight	
Inches	mm	Inches	mm	Inches	mm	Inches	mm
1½	48.3	0.126	3.2	0.02	0.5	2.392	3.56
1½	48.3	0.157	4.0	0.02	0.5	2.937	4.37

Tolerance

Outside Diameter	Thickness	Weight
0.5	±/-10%	±7.5% On Single Tube

Steel Grade	: S235JRH
Mechanical Properties	
Yield Strength	: 235 MPA MIN
Tensile Strength	: 340 / 520 MPA

End Finish	: Square Cut
Straightness	: 1mm In 600mm
Flattening Test	: Two stages Flatten Upto 75% Of Tube Dia For Weld Flatten Upto 60% Of Tube Dia For Material Bend Test Also Available

Chemical Composition	
Carbon	: 0.20% Max
Silicon	: 0.05% Max
Manganese	: 0.40% Max
Phosphorous	: 0.45% Max
Sulphur	: 0.02% Max
Aluminium	

Zinc Coating	: 45 Microns Minimum Outside
Marking	: En 39 Aplapallo Tubes -3.2/4.0
Delivery Condition	: a) As Rolled Condition - (Without Protection) b) Hot Dip Galvanised

Technical data of IS:3601 2006 tubes for Mechanical & General Engg. Purpose

N.B size		Approx O.D (mm)	Thicknes mm	Wt.kg/mtr	Meters per tonnes
Mm	In				
15	½"	21.3	1.8	0.866	1155
			2.0	0.952	1050
			2.6	1.2	833
			3.2	1.43	699
			4.0	1.71	585
20	¾"	26.9	1.8	1.11	901
			2.0	1.23	813
			2.3	1.4	714
			2.6	1.56	641
			3.2	1.87	535
25	1"	33.7	4.0	2.26	442
			2.0	1.56	641
			2.3	1.78	562
			2.6	1.99	503
			3.2	2.41	415
32	1.25"	42.4	4.0	2.93	341
			4.5	3.24	309
			2.3	2.27	441
			2.6	2.55	392
			3.2	3.09	324
40	1.5"	48.3	3.6	3.44	291
			4.0	3.79	264
			5.0	4.61	217
			5.4	4.93	203
			2.3	2.61	383
50	2"	60.3	2.6	2.93	341
			2.9	3.25	308
			3.2	3.56	281
			4.0	4.37	229
			4.9	5.23	191
65	2.5"	76.1	5.0	5.34	187
			5.6	5.900	170
			5.9	6.160	162
			2.3	3.29	304
			2.6	3.7	270
80	3"	88.9	2.9	4.11	243
			3.2	4.51	222
			3.6	5.03	199
			4.0	5.55	180
			4.5	6.19	162
			5.0	6.82	147
			5.6	7.55	133
			6.3	8.39	119
			2.6	5.24	191
			3.2	5.75	174
			3.6	6.44	155
			4.0	7.11	141
			4.5	7.95	126
			5.0	8.777	114
			5.4	9.42	106
			6.3	10.8	93
			7.1	12.1	83
			2.9	6.15	163
			3.2	6.76	148
			4.0	8.38	119
			5.0	10.3	97
			5.4	11.1	90
			5.6	11.5	87
			6.3	12.8	78

Grade: ERW-WP- 100



Technical data of pipes conforming to ASTM A-53 Gr. A&B Sch. 20/40/80

Nominal Bore		Outside Diameter		Schedule	Wall Thickness		Weight of Pipes Plain End		No. of Pcs per Bundle				
Mm	Inch	Mm	Inch		Mm	Inch	Kg/Mtr.	Lbs/Ft					
15	½"	21.3	0.84	40	2.77	0.109	1.27	0.85	120				
				80	3.73	0.147	1.62	1.09					
20	¾"	26.7	1.05	40	2.87	0.113	1.69	1.13	90				
				80	3.91	0.154	2.2	1.48					
25	1"	33.4	1.315	40	3.38	0.133	2.5	1.68	60				
				80	4.55	0.179	3.24	2.17					
32	1 ¼"	42.2	1.66	40	3.56	0.14	3.39	2.27	42				
				80	4.85	0.191	4.47	3					
40	1 ½"	48.3	1.9	40	3.68	0.145	4.05	2.72	36				
				80	5.08	0.2	5.41	3.63					
50	2"	60.3	2.375	40	3.91	0.154	5.44	3.66	26				
				80	5.54	0.218	7.48	5.03					
65	2 ½"	73	2.875	40	5.16	0.203	8.63	5.8	18				
				80	7.01	0.276	11.41	7.67					
80	3"	88.9	3.5	40	5.49	0.216	11.29	7.58	14				
				80	7.62	0.3	15.27	10.26					
90	3 ½"	101.6	4	40	5.74	0.226	13.57	9.12	12				
				80	8.08	0.318	18.63	12.52					
100	4"	114.3	4.5	40	6.02	0.237	16.07	10.8	10				
				80	8.56	0.337	22.32	15					
125	5"	141.3	5.56	40	6.55	0.258	21.77	14.63	8				
				40	7.11	0.28	28.26	18.99					
150	6"	168.3	6.625	40	7.11	0.28	28.26	18.99	7				
				20	6.35	0.25	33.31	22.38					
200	8"	219.1	8.625	20	6.35	0.25	33.31	22.38	5				
				30	7.04	0.277	36.31	24.72					
				40	8.18	0.322	42.55	28.58	3				
				250	10	273	10.748	20		6.35	0.25	41.75	28.06
				30	7.8	0.307	51.01	34.27	3				
				40	9.27	0.365	60.29	40.52					
				20	6.35	0.25	49.71	33.41	3				
				30	8.38	0.33	65.18	43.1					
				STD	9.52	0.375	73.78	49.61	3				
				40	10.31	0.406	79.70	53.57					
				350	14	355.6	14	10	6.35	0.25	54.69	36.75	3
				20	7.92	0.312	67.9	45.65					
				30	9.52	0.375	81.25	54.62	3				

Chemical Properties

Composition, Max%

	Carbon	Manganese	Phosphorus	Sulphur	Copper	Nickel	Chromium A	Molybdeneum A	Vanadium A
Grade A	0.25	0.95	0.05	0.045	0.4	0.4	0.4	0.15	0.08
Grade B	0.3	1.2	0.05	0.045	0.4	0.4	0.4	0.15	0.08

Tolerance

Outside Diameter	Pipe Size upto & including Dn40 Pipe Size DN 50 or longer	±0.4mm +1-1% Thickness -12.5max Weight ±10%
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Mechanical Properties

	Grade A	Grade B
Yield Strength	205Mpa(min)	240Mpa(min)
Tensile Strength	330Mpa(min)	415Mpa(min)
Elongation%	As per ATSM A-%53 table 4.1 4.2	

*This specification conform to UL certification conferred by underwriters laboratories, USA.

ASTM A53 SCH.40 pipes are approved by Dubai, Sharjah & Abu Dhabi civil defence & also from Qatar civil defence.

Technical data of pipes conforming to ASTM A252

OUTSIDE DIAMETER		DIAMETER TOLERANCE (mm) (Inch)		STANDARD THICKNESS		WEIGHT	
(Inch)	(mm)	(Min)	(Max)	(mm)	(Inch)	(Kg/mtr)	(lb/ft)
8 5/8"	219.1	216.91 (8.539")	221.29 (8.712")	4.37	0.172	23.13	15.54
				4.78	0.188	25.24	16.96
				5.16	0.203	27.20	18.28
				5.56	0.219	29.29	19.68
				6.35	0.250	33.31	22.38
				7.04	0.277	36.79	24.72
				7.92	0.312	41.27	27.73
				8.18	0.322	42.54	28.58
				4.17	0.164	27.62	18.56
				4.37	0.172	28.94	19.45
10 3/4"	273.0	270.27 (10.640")	275.73 (10.855")	4.55	0.179	30.10	20.22
				4.78	0.188	31.59	21.22
				5.16	0.203	34.06	22.88
				5.56	0.219	36.69	24.65
				5.84	0.230	38.49	25.86
				6.35	0.250	41.75	28.06
				7.09	0.279	46.47	31.22
				7.80	0.307	51.00	34.27
				8.74	0.344	56.94	38.26
				9.27	0.365	60.29	40.51
12 3/4"	323.8	320.56 (12.620")	327.04 (12.875")	4.78	0.188	37.57	25.24
				5.16	0.203	40.52	27.22
				5.56	0.219	43.65	29.33
				6.35	0.250	49.71	33.40
				7.14	0.281	55.74	37.45
				7.92	0.312	61.73	41.48
				8.38	0.330	65.20	43.81
				8.74	0.344	67.89	45.61
				9.52	0.375	73.78	49.61
				10.31	0.406	79.73	53.52
14"	355.6	352.04 (13.859")	359.156 (14.140")	4.78	0.188	41.31	27.76
				5.16	0.203	44.56	29.94
				5.56	0.219	48.20	32.26
				5.84	0.230	50.39	33.86
				6.35	0.250	54.69	36.75
				7.14	0.281	61.33	41.21
				7.92	0.312	67.94	45.65
				8.74	0.344	74.74	50.22
9.52	0.375	81.25	54.62				

Chemical Properties: Phosphorus = 0.050% (Max.)

Mechanical Properties

	Grade 1	Grade 2	Grade 3
Tensile Strength (Mpa)	345	415	455
Yield Strength (Mpa)	205	240	310
% Elongation in (50mm)	30	25	20
*Deduction	1.50	1.25	1.00

Technical Details

Characteristics	Tolerances & Technical details
Outside Diameter (OD)	For Round Pipes ± 1% of OD
Thickness	-12.5% of specific wall thickness.
Weight	For each tube – 5% & + 15% of standard weight (Calculated Weight)
Length	Pipe shall be furnished in single random length, double random length or in uniform length as per the customer requirement.
Straightness	The finished pipe shall be reasonably straight.
End	Pipe shall be finished with Square cut (plain End) of Bevel End (30° - 0/45°)
Surface Protection	Black & Galvanized coating as per Customer requirement
Marking (Stencilling)	APL APOLLO TUBES, Specification designation, Grade, Outside diameter, Thickness, Process of manufacturing & Heat No." on pipe and any thin specific as per the customer requirement.

ASTM A-795* (Black & Galvanised Steel Pipes for Fire Protection)

Nominal Bore		Outside Diameter		SCH-10				No. of piece per Bundle	SCH 40/30*				No. of piece per Bundle
Mm	Inch	Mm	Inch	Wall Thickness		Weight Plain End			Wall Thickness		Weight Plain End		
Mm	Inch	Mm	Inch	Mm	Inch	Mm	Inch	Mm	Inch	Mm	Inch	Mm	Inch
20	3/4	26.7	1.050	2.11	0.083	1.28	0.96	90	2.87	0.113	1.69	1.13	90
25	1	33.4	1.315	2.77	0.109	2.09	1.41	90	3.38	0.133	2.50	1.68	60
32	1 1/4	42.2	1.660	2.77	0.109	2.69	1.81	61	3.56	0.14	3.39	2.27	42
40	1 1/2	48.3	1.900	2.77	0.109	3.11	2.09	61	3.68	0.145	4.05	2.72	36
50	2	60.3	2.375	2.77	0.109	3.93	2.64	37	3.91	0.154	5.45	3.66	26
65	2 1/2	73.0	2.875	3.05	0.120	5.26	3.53	29	5.16	0.205	8.68	5.80	18
80	3	88.9	3.500	3.05	0.120	6.46	4.34	24	6.49	0.216	11.29	7.58	14
90	3 1/2	101.6	4.000	3.05	0.120	7.41	4.98	21	5.74	0.226	13.58	9.12	12
100	4	114.3	4.500	3.05	0.120	8.37	5.62	19	6.02	0.237	16.09	10.8	10
125	5	141.3	5.563	3.4	0.134	11.58	7.78	10	6.55	0.258	21.79	14.63	8
150	6	168.3	6.625	3.4	0.134	13.85	9.30	10	7.11	0.280	28.29	18.99	7
200	8	219.1	8.625	4.78	0.188	25.26	16.96	5	7.04*	0.277	36.82	24.72	5

*The specification conforms to UL conferred by underwriters laboratories USA

ASTM A-135 GRADE A&B (Black and Galvanised Steel Pipe)

Nominal Bore		Outside Diameter		SCH-10				No. of piece per Bundle
Mm	Inch	Mm	Inch	Wall Thickness		Weight Plain End		
Mm	Inch	Mm	Inch	Mm	Inch	Mm	Inch	
20	3/4	26.7	1.050	2.11	0.083	1.28	0.96	90
25	1	33.4	1.315	2.77	0.109	2.09	1.41	90
32	1 1/4	42.2	1.66	2.77	0.109	2.69	1.81	61
40	1 1/2	48.3	1.900	2.77	0.109	3.11	2.09	61
50	2	60.3	2.375	2.77	0.109	3.93	2.64	37
65	2 1/2	73.0	2.875	3.05	0.120	5.26	3.53	29
80	3	88.9	3.500	3.05	0.120	6.46	4.34	24
90	3 1/2	101.6	4.000	3.05	0.120	7.41	4.98	21
100	4	114.3	4.500	3.05	0.120	8.37	5.62	19
125	5	141.3	5.563	3.40	0.134	11.58	7.78	14

Tolerance

Outside Diameter	Pipe Size upto & including DN 40 Pipe Size DN 50 or longer	+ 1-0.4mm +1=1% Thickness -12.5(max) Weight +10%
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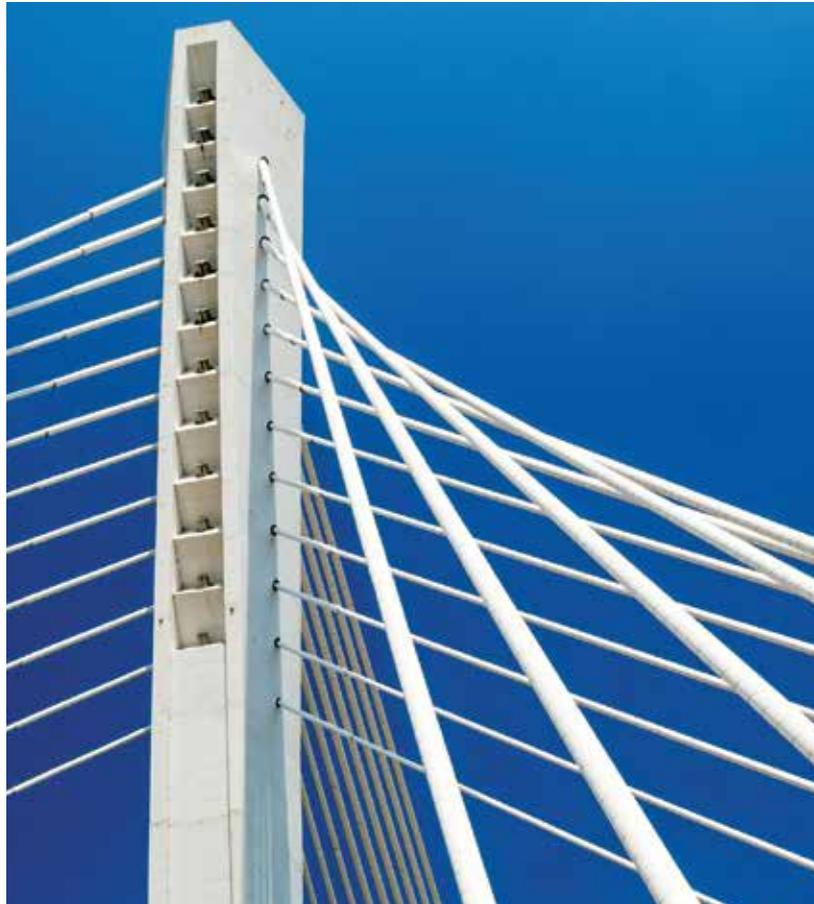
Mechanical Properties

	Grade A	Grade B	Grade A	Carbon	Manganese	Phosphorus	Sulphur
Yield Strength	205Mpa(min)	240Mpa(min)	Grade A	0.25	0.05	0.035	0.35
Tensile Strength	330Mpa(min)	415Mpa(min)	Grade B	0.3	1.2	0.35	0.35
Elongation %	35	30					

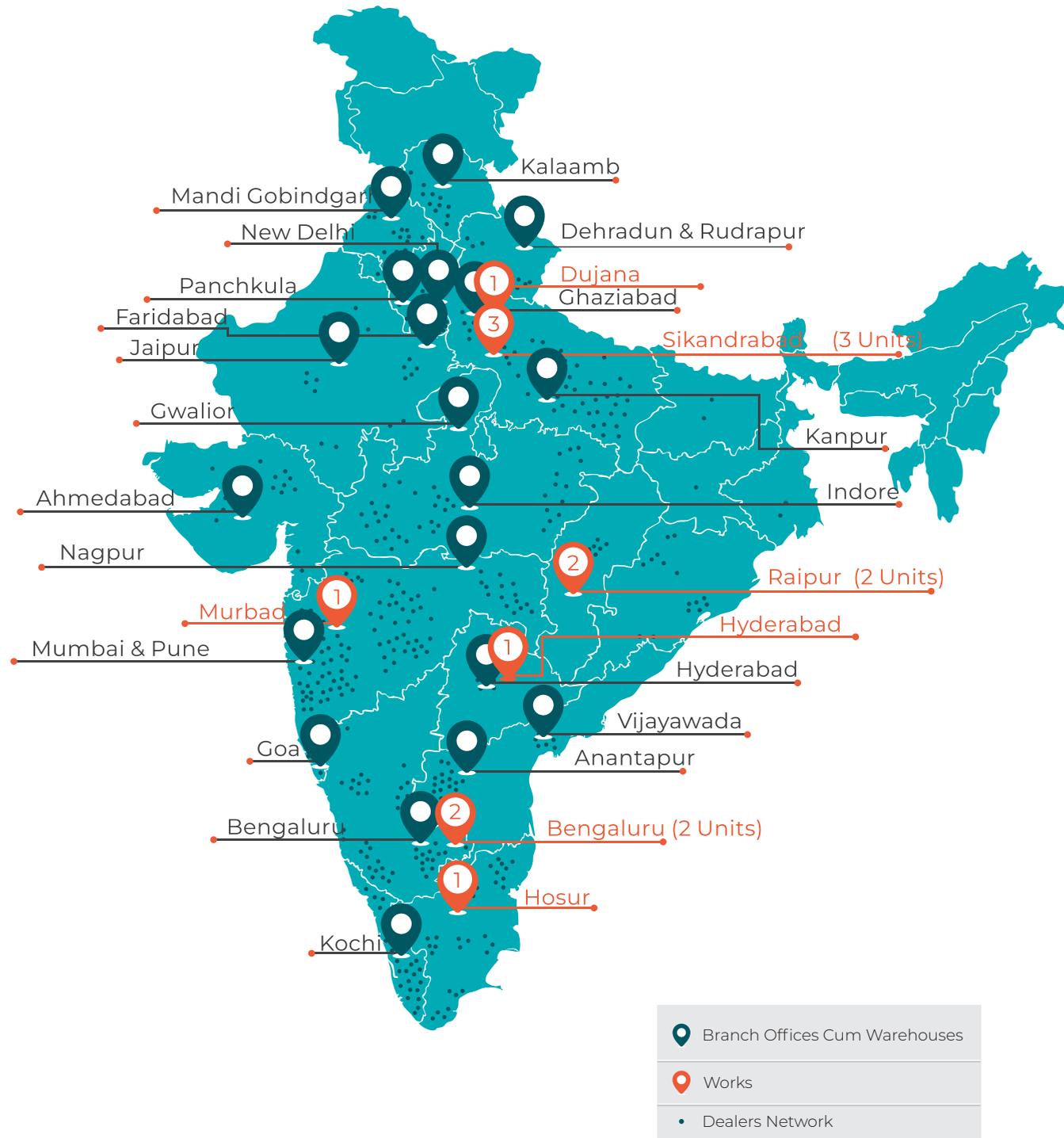
Galvanising

Minimum	0.49 0kg/Sq Mtr
Average	0.550kg/Sq Mtr

APPLICATIONS



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