
GOEL PIPES
सालों साल बेमिसाल
QUALITY THAT STANDS TALL

RISEN TO SHINE

The Goel Group truly embodies the spirit of Indian renaissance. While our country's journey to a rising super power have tested our grit and fortitude to its limits, our history has sown the seeds of determination and the will to excel. The march of Goel Group, under the visionary leadership of Shri Hari Ram Ji Goel, in many ways reflect the transformation of our country. From the heartland of Central India in the year 1961, the group took it upon themselves to partake in the industrial revolution. And thus Raipur, the capital city of Chhattisgarh bore testimony to our surge across diversified businesses, from manufacturing and mining to media and food industries.

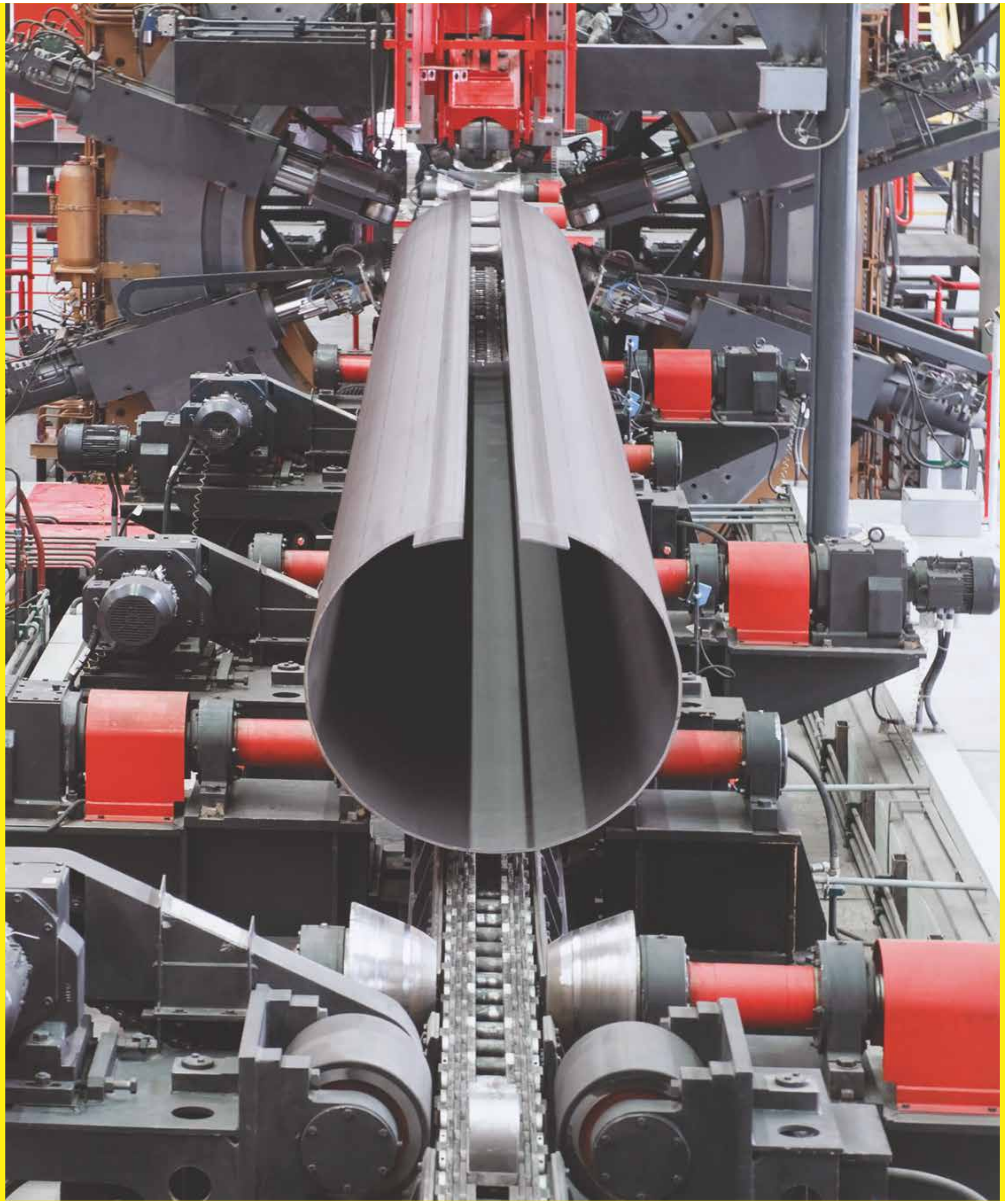
The cornerstone of the Goel Group's philosophy resides in its three business commandments. Technology, Innovation & Modernisation. Every business entity within the Group stays true to these three commandments. Every product that comes out of the conglomerate is an embodiment of this belief system, and they push the limits to break conventions and usher in newer horizons.

Under Shri Bajrang Power & Ispat Ltd., the Group pioneered the steel industry in Central India to become the frontrunner in the production of iron ore, steel and steel products. Goel TMT, another of its flagship enterprises is today the No. 1 integrated steel venture in Central India, offering Rebars, binding wires and wire rods. Today, the Group's footprint is etched across mining, iron & steel, power generation, ferro alloys and fly ash bricks to media, education and food.

GOEL

Above all, the Group is driven by a constitution that charters its value systems. Integrity, reliability, transparency and customer centricity drives its business excellence. It is these value systems that has built customer trust and loyalty.

In 2020, the Goel Group turns a new page.



THE FUTURE IS NOW

INTRODUCING GOEL PIPES

The newest entrant to the Goel legacy, Goel Pipes is geared to usher India into the super highway of infrastructural modernisation. With the country at the cusp of a modernisation surge to stay ahead of global standards and build infrastructural superiority, Goel Pipes combines cutting-edge technology and innovation to break conventional norms that limit infrastructural and design excellence. And pivoting this transformation is cost efficiency, longevity and strength. Goel Pipes is geared to change the way India builds, designs and transports its lifeline.

In a world where pipes are used mostly to transport liquids, gases or to lay cable lines through terrestrial or aquatic mediums, Goel Pipes is poised to change the rules of the game. It is transforming the usage of pipes across small, medium and large scale structural installations, industrial and commercial utility based structures like hand rails, furniture as well as other cosmetic embellishments that complement all infrastructural work.

The Goel Pipes bouquet of products include technologically advanced and innovative offerings like black pipes and galvanized steel pipes. A host of micro-managed design advancements like beveling (leveling of both the edges of the pipe to enable easy welding) makes the products extremely cost efficient as well as time-efficient for the clientele. Goel Pipes are available across a multitude of water-based PU colours to meet all types of design requirements. The technologically advanced varnishing given to our products are eco-compliant to the highest degree, contributing to a sustainable environment for future generations.

With Goel Pipes, the world is future ready.

All our pipes are coated with Rust Preventing Oil.

POWERED BY TECHNOLOGY

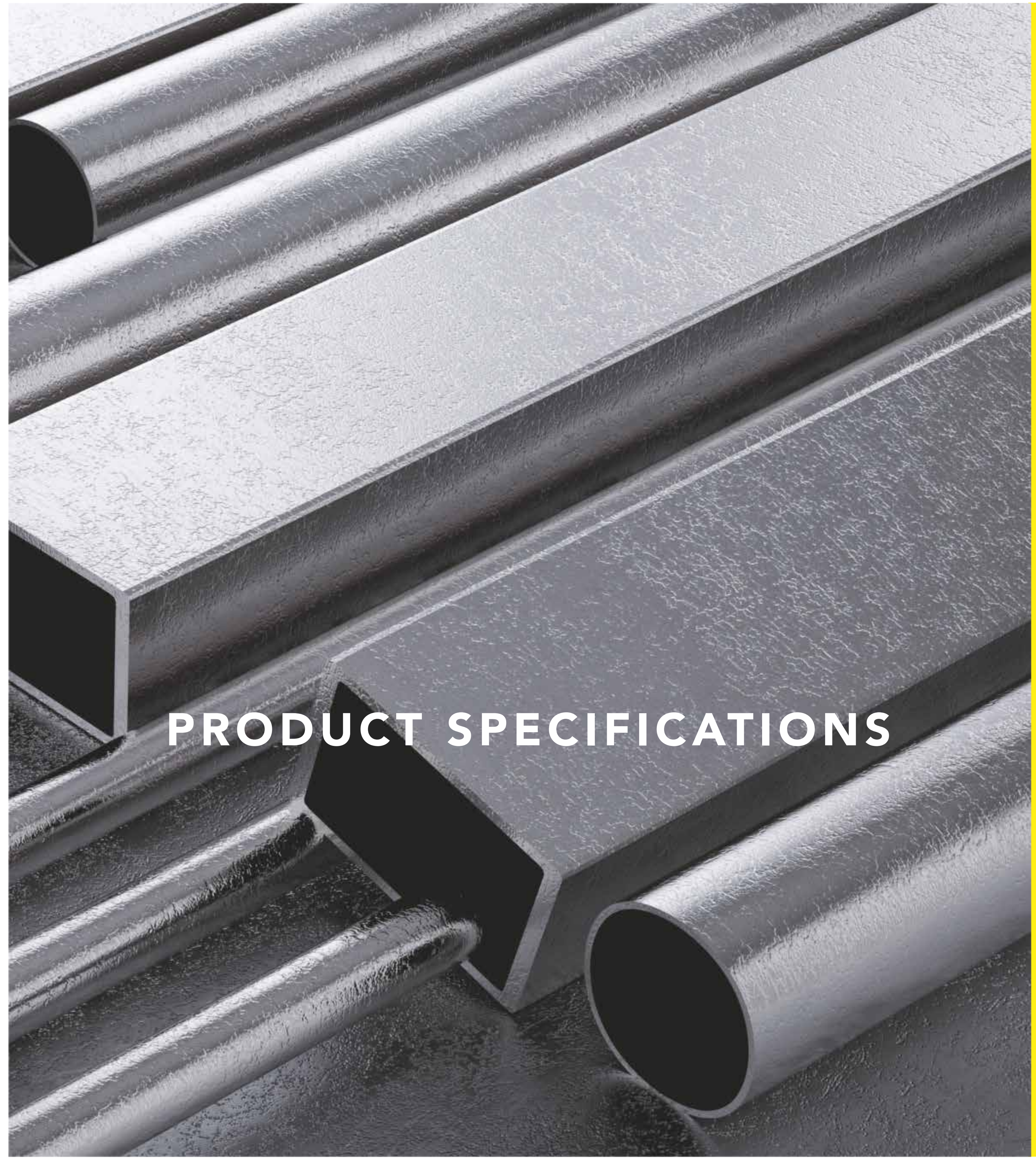
Investing in future technologies have empowered Goel Pipes to deliver a vastly superior product line calibrated to accurate specifications. Technology that ensures zero tolerance to product variances through a precise process control. Stringent testing standards give no room for quality fluctuations.

The ultra-modern facility commissions Europe's bleeding-edge technology called 'Direct Forming Tube Technology' (DFT) for manufacture of pipes. The multiple mills within the facility are equipped with machinery sourced from giants across global markets, giving Goel Pipes the edge in manufacturing pipes of various specifications adhering to international quality norms.

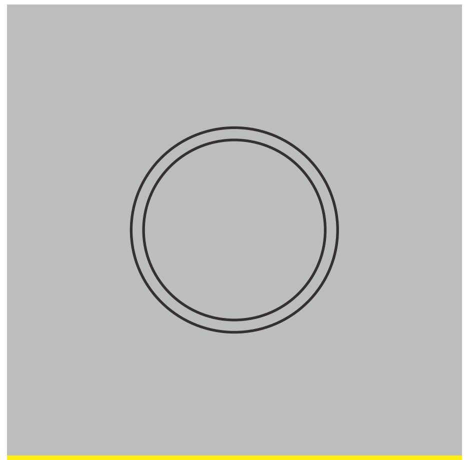
State-of-the-art, highly sophisticated and futuristic software aligns production to deliver unfailing consistency in quality and accuracy, batch after batch.

Precisely calibrated automation systems track the journey of each pipe that flows through the facility, factoring in details of its source (raw materials) as well as its date of manufacturing. This ensures a thorough 'Root Cause' analysis of every issue that has come up for quality review. Technology that breaks conventions renders current technologies redundant.

These new age technologies help civilisations live their tomorrow, today.



PRODUCT SPECIFICATIONS

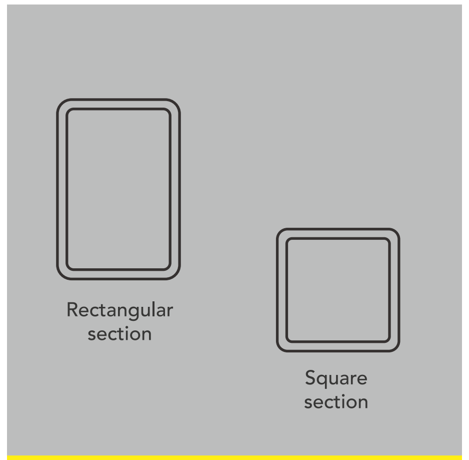


ROUND PIPES

Size

Outer Diameter	: 15NB – 300NB
Thickness Range	: 0.9mm – 12.7mm
Length	: 4m – 12m

Application
Used in various structural, general engineering, belt conveyor, fencing, line pipes, scaffolding, water & sewage, water wells, fire protection and electrical conduit purposes.



SQUARE & RECTANGULAR HOLLOW SECTION

Size

Rectangular Hollow Sections (RHS)

40mm x 20mm – 300mm x 200mm

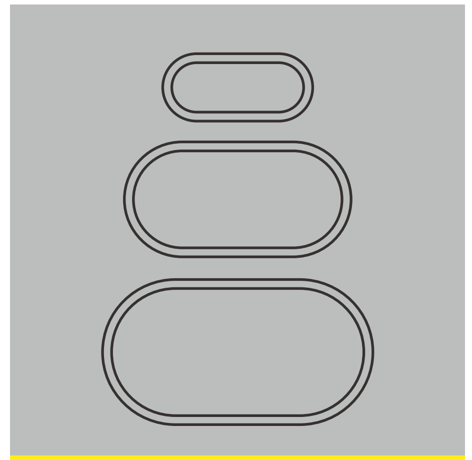
Thickness	: 0.9mm – 12.7mm
Length	: 4.0m – 12m

Square Hollow Sections (SHS)

25mm x 25mm – 250mm x 250mm

Thickness	: 0.9mm – 12.7mm
Length	: 4.0m – 12m

Application
Commonly used as a railing along staircases, machinery, automotive, furniture, heavy machine equipment, transmission tower and construction. These pipes can also be used as concrete-filled steel tubular (CFT) stub columns and beams.



FLAT OVAL / CAPSULE SECTION

Size

48mm x 22mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application
Mainly used in steel furniture, fabrication work and gym equipment.

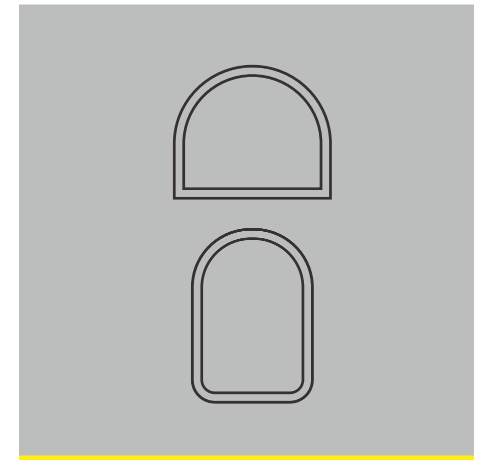
HAND RAIL

Size

52mm x 48.3mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application
Used as a replacement for wooden hand rail and steel flat combination.



D – SECTION

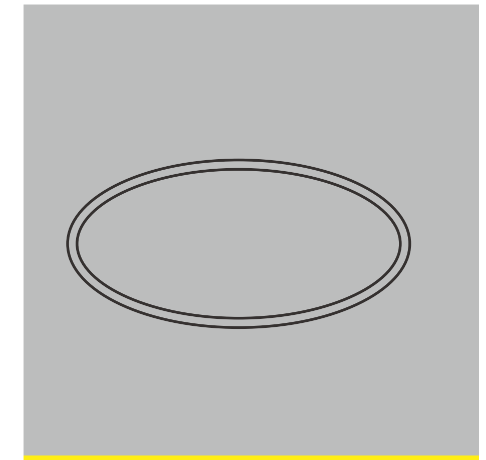
Size

60mm x 30mm

27.6mm x 12.4mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application
Used for making railings for balconies, roofs etc.



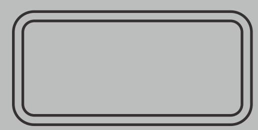
ELLIPTICAL SECTIONS

Size

75mm x 15mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application
Used in transformers and as designer pipe in gates, railings and steel furniture.



NARROW SECTIONS

Size

40mm x 10mm

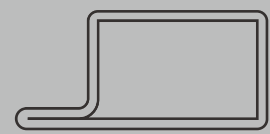
60mm x 10mm

50mm x 15mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application

Used for structural and railing purposes.



L – SECTION

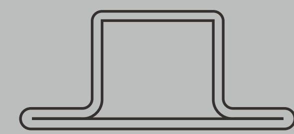
Size

46mm x 18mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application

Used for window and door frames.



T – SECTION

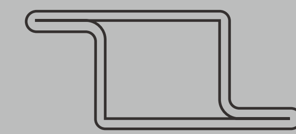
Size

52mm x 25mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application

Used for window and door frames.



Z – SECTION

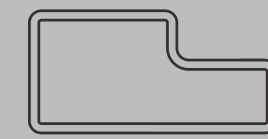
Size

41mm x 24mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application

Used for window and door frames.



SINGLE DOOR FRAME

Size

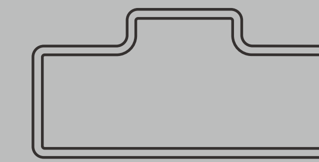
80mm x 40mm

100mm x 50mm

Thickness Range	: 0.9mm – 3.0mm
Length	: 4m – 6m

Application

Used for door frames.



DOUBLE DOOR FRAME

Size

130mm x 65mm

Thickness Range	: 1.6mm – 2.2mm
Length	: 4m – 6m

Application

Used for door frames.

ROUND PIPES

PRODUCT MATRIX

Mill No.	PRODUCT SIZE				WALL THICKNESS (MM)												
	NB		OD		Inch	0.035	0.047	0.063	0.071	0.079	0.010	0.109	0.113	0.125	0.140	0.154	0.179
	Inch	MM	Inch	MM	MM	0.90	1.20	1.60	1.80	2.00	2.50	2.77	2.87	3.18	3.56	3.91	4.55
2	1/2	15	0.84	21.3		√	√	√	√	√	√	√	√	√			
2	3/4	20	1.05	26.9		√	√	√	√	√	√	√	√	√			
2	1	25	1.315	33.7			√	√	√	√	√	√	√	√	√	√	
2	NA	NA	1.5	38.1			√	√	√	√	√	√	√	√	√	√	
2	1 1/4	32	1.66	42.4			√	√	√	√	√	√	√	√	√	√	
2	1 1/2	40	1.9	48.3			√	√	√	√	√	√	√	√	√	√	√
2	NA	NA	2	50.8			√	√	√	√	√	√	√	√	√	√	√
1 & 2	2	50	2.375	60.3			√	√	√	√	√	√	√	√	√	√	√
2	NA	NA	2.5	63.5			√	√	√	√	√	√	√	√	√	√	√
1 & 2	2 1/2	65	3	76.2			√	√	√	√	√	√	√	√	√	√	√
1	3	80	3.5	88.9				√	√	√	√	√	√	√	√	√	√
1	3 1/2	90	4	101.6				√	√	√	√	√	√	√	√	√	√
1 & 3	4	100	4.5	114.3				√	√	√	√	√	√	√	√	√	√
1	NA	110	5	127				√	√	√	√	√	√	√	√	√	√
1 & 3	5	125	5.5	139.7				√	√	√	√	√	√	√	√	√	√
1 & 3	5	NA	5.563	141.3				√	√	√	√	√	√	√	√	√	√
1	NA	135	6	152.4				√	√	√	√	√	√	√	√	√	√
3	NA	NA	6.26	159				√	√	√	√	√	√	√	√	√	√
1 & 3	6	150	6.5	165.1				√	√	√	√	√	√	√	√	√	√
3	6	150	6.625	168.3										√	√	√	√
3	NA	NA	7	177.8										√	√	√	√
3	7	175	7.626	193.7										√	√	√	√
3	8	200	8.625	219.1										√	√	√	√
3	10	250	10.75	273.1											√	√	√
3	12	300	12.75	323.9											√	√	√

Mill No.	NB Inch	NB MM	OD Inch	OD MM	WALL THICKNESS (MM)																
					0.188	0.191	0.203	0.216	0.226	0.237	0.250	0.280	0.300	0.312	0.322	0.337	0.365	0.375	0.406	0.436	0.500
					4.78	4.85	5.16	5.49	5.74	6.02	6.35	7.11	7.62	7.92	8.18	8.56	9.27	9.52	10.31	11.07	12.70
2	1/2	15	0.84	21.3																	
2	3/4	20	1.05	26.9																	
2	1	25	1.315	33.7																	
2	NA	NA	1.5	38.1																	
2	1 1/4	32	1.66	42.4																	
2	1 1/2	40	1.9	48.3																	
2	NA	NA	2	50.8	√	√															
1 & 2	2	50	2.375	60.3	√	√															
2	NA	NA	2.5	63.5	√	√															
1 & 2	2 1/2	65	3	76.2	√	√	√	√													
1	3	80	3.5	88.9	√	√	√	√	√	√	√	√	√								
1	3 1/2	90	4	101.6	√	√	√	√	√	√	√	√	√								
1 & 3	4	100	4.5	114.3	√	√	√	√	√	√	√	√	√	√							
1	NA	110	5	127	√	√	√	√	√	√	√	√	√	√							
1 & 3	5	125	5.5	139.7	√	√	√	√	√	√	√	√	√	√							
1 & 3	5	NA	5.563	141.3	√	√	√	√	√	√	√	√	√	√							
1	NA	135	6	152.4	√	√	√	√	√	√	√	√	√	√							
3	NA	NA	6.26	159	√	√	√	√	√	√	√	√	√	√							
1 & 3	6	150	6.5	165.1	√	√	√	√	√	√	√	√	√	√							
3	6	150	6.625	168.3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		
3	NA	NA	7	177.8	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		
3	7	175	7.626	193.7	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		
3	8	200	8.625	219.1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3	10	250	10.75	273.1	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
3	12	300	12.75	323.9	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

SQUARE SECTION

Mill No.	PRODUCT SIZE		WALL THICKNESS (MM)												
	Size (MM) W XH	Size (Inch) W XH	Inch	0.035	0.047	0.063	0.071	0.079	0.010	0.109	0.113	0.125	0.140	0.154	0.179
			MM	0.90	1.20	1.60	1.80	2.00	2.50	2.77	2.87	3.18	3.56	3.91	4.55
2	20 x 20	NA		√	√	√	√	√	√	√					
2	25 X 25	1 x 1		√	√	√	√	√	√	√	√	√			
2	30 x 30	NA			√	√	√	√	√	√	√	√	√		
2	32 X 32	NA			√	√	√	√	√	√	√	√	√	√	
2	35 X 35	NA			√	√	√	√	√	√	√	√	√	√	
2	38 X 38	1.5 x 1.5			√	√	√	√	√	√	√	√	√	√	
2	40 X 40	NA			√	√	√	√	√	√	√	√	√	√	
1 & 2	45 X 45	NA			√	√	√	√	√	√	√	√	√	√	
2	50 X 50	2 x 2			√	√	√	√	√	√	√	√	√	√	√
1 & 2	60 X 60	NA			√	√	√	√	√	√	√	√	√	√	√
2	63.5 X 63.5	2.5 x 2.5			√	√	√	√	√	√	√	√	√	√	√
1	70 X 70	NA				√	√	√	√	√	√	√	√	√	√
1	72 X 72	NA				√	√	√	√	√	√	√	√	√	√
1	75 X 75	3 x 3				√	√	√	√	√	√	√	√	√	√
1	80 X 80	NA				√	√	√	√	√	√	√	√	√	√
1	91.5 X 91.5	3.5 X 3.5				√	√	√	√	√	√	√	√	√	√
1	100 X 100	4 x 4				√	√	√	√	√	√	√	√	√	√
1	113.5X113.5	4.5 x 4.5					√	√	√	√	√	√	√	√	√
1	120 X 120	NA						√	√	√	√	√	√	√	√
3	125 x 125	5 x 5												√	√
3	132 x 132	NA												√	√
3	140 x 140	NA												√	√
3	150 x 150	6 x 6												√	√
3	160 x 160	NA												√	√
3	175 X 175	7 x 7												√	√
3	180 X 180	NA												√	√
3	200 x 200	8 x 8												√	√
3	220 x 220	NA												√	√
3	250 x 250	10 x 10												√	√

PRODUCT MATRIX

Size (MM) W XH	WALL THICKNESS (MM)																
	0.188	0.191	0.203	0.216	0.226	0.237	0.250	0.280	0.300	0.312	0.322	0.337	0.365	0.375	0.406	0.436	0.500
	4.78	4.85	5.16	5.49	5.74	6.02	6.35	7.11	7.62	7.92	8.18	8.56	9.27	9.52	10.31	11.07	12.70
20 x 20																	
25 X 25																	
30 x 30																	
32 X 32																	
35 X 35																	
38 X 38																	
40 X 40																	
45 X 45																	
50 X 50	√																
60 X 60	√	√	√	√													
63.5 X 63.5	√	√	√														
70 X 70	√	√	√	√	√	√											
72 X 72	√	√	√	√	√	√											
75 X 75	√	√	√	√	√	√											
80 X 80	√	√	√	√	√	√	√	√									
91.5 X 91.5	√	√	√	√	√	√	√	√	√	√							
100 X 100	√	√	√	√	√	√	√	√	√	√							
113.5X113.5	√	√	√	√	√	√	√	√	√	√							
120 X 120	√	√	√	√	√	√	√	√	√	√							
125 x 125	√	√	√	√	√	√	√	√	√	√							
132 x 132	√	√	√	√	√	√	√	√	√	√							
140 x 140	√	√	√	√	√	√	√	√	√	√							
150 x 150	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
160 x 160	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
175 X 175	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
180 X 180	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
200 x 200	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
220 x 220	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
250 x 250	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

RECTANGULAR SECTION

Mill No.	PRODUCT SIZE		WALL THICKNESS (MM)												
	Size (MM) W XH	Size (Inch) W XH	Inch	0.035	0.047	0.063	0.071	0.079	0.010	0.109	0.113	0.125	0.140	0.154	0.179
			MM	0.90	1.20	1.60	1.80	2.00	2.50	2.77	2.87	3.18	3.56	3.91	4.55
2	40X20	NA			√	√	√	√	√	√	√	√	√		
2	50X25	2x1			√	√	√	√	√	√	√	√	√	√	
2	50X30	NA			√	√	√	√	√	√	√	√	√	√	√
2	66X33	NA			√	√	√	√	√	√	√	√	√	√	
2	60X40	NA			√	√	√	√	√	√	√	√	√	√	√
2	70X30	NA			√	√	√	√	√	√	√	√	√	√	√
2	75x25	3x1			√	√	√	√	√	√	√	√	√	√	√
1 & 2	70X50	NA			√	√	√	√	√	√	√	√	√	√	√
1 & 2	80X40	NA			√	√	√	√	√	√	√	√	√	√	√
1	96X48	NA				√	√	√	√	√	√	√	√	√	√
1	80X60	NA				√	√	√	√	√	√	√	√	√	√
1	90X50	NA				√	√	√	√	√	√	√	√	√	√
1	100X50	4X2				√	√	√	√	√	√	√	√	√	√
1	100X60	NA				√	√	√	√	√	√	√	√	√	√
1	100X80	NA				√	√	√	√	√	√	√	√	√	√
1	122x61	NA				√	√	√	√	√	√	√	√	√	√
1	120X80	NA				√	√	√	√	√	√	√	√	√	√
1	140X80	NA				√	√	√	√	√	√	√	√	√	√
1	145X82	NA				√	√	√	√	√	√	√	√	√	√
1	150x75	6X3				√	√	√	√	√	√	√	√	√	√
1	160X80	NA				√	√	√	√	√	√	√	√	√	√
3	150x100	6X4												√	√
3	172x92	NA												√	√
3	180x100	NA												√	√
3	200x100	8X4												√	√
3	200x120	NA												√	√
3	200x150	8X6												√	√
3	220x140	NA												√	√
3	240x120	NA												√	√
3	250x150	10x6												√	√
3	250X200	10X8												√	√
3	260x180	NA												√	√
3	300x100	12X4												√	√
3	300x150	12X6												√	√
3	300x200	12X8												√	√

PRODUCT MATRIX

Size (MM)	WALL THICKNESS (MM)																
	0.188	0.191	0.203	0.216	0.226	0.237	0.250	0.280	0.300	0.312	0.322	0.337	0.365	0.375	0.406	0.436	0.500
	4.78	4.85	5.16	5.49	5.74	6.02	6.35	7.11	7.62	7.92	8.18	8.56	9.27	9.52	10.31	11.07	12.70
40X20																	
50X25																	
50X30																	
66X33																	
60X40	√																
70X30	√																
75x25	√																
70X50	√	√	√	√													
80X40	√	√	√	√													
96X48	√	√	√	√	√	√											
80X60	√	√	√	√	√	√											
90X50	√	√	√	√	√	√											
100X50	√	√	√	√	√	√											
100X60	√	√	√	√	√	√	√										
100X80	√	√	√	√	√	√	√	√									
122x61	√	√	√	√	√	√	√	√									
120X80	√	√	√	√	√	√	√	√									
140X80	√	√	√	√	√	√	√	√									
145X82	√	√	√	√	√	√	√	√									
150x75	√	√	√	√	√	√	√	√									
160X80	√	√	√	√	√	√	√	√									
150x100	√	√	√	√	√	√	√	√	√	√							
172x92	√	√	√	√	√	√	√	√	√	√							
180x100	√	√	√	√	√	√	√	√	√	√							
200x100	√	√	√	√	√	√	√	√	√	√							
200x120	√	√	√	√	√	√	√	√	√	√							
200x150	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
220x140	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
240x120	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
250x150	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
250X200	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
260x180	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
300x100	√	√	√	√	√	√	√	√	√	√							
300x150	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
300x200	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√

SPECIAL SECTION

Mill No.	PRODUCT SIZE		WALL THICKNESS (MM)												
	Size (MM) W XH	Size (Inch) W XH		0.035	0.047	0.063	0.071	0.079	0.010	0.109	0.113	0.125	0.140	0.154	0.179
			MM	0.90	1.20	1.60	1.80	2.00	2.50	2.77	2.87	3.18	3.56	3.91	4.55
2	NA	27.6 X 12.4		√	√	√	√	√		D - Section					
2	NA	60 X 30			√	√	√	√	√	D - Section					
2	NA	48 X 22			√	√	√	√	√	Flat Oval/ Capsule Section					
2	NA	75 X 15			√	√	√	√	√	Elliptical Tube					
2	NA	52 X 48.3			√	√	√	√	√	Hand Rail					
2	NA	60 x 10			√	√	√	√	√	Narrow Section					
2	NA	50 x 15			√	√	√	√	√	Narrow Section					
2	NA	40 x 10			√	√	√	√	√	Narrow Section					
2	NA	80 x 40					√	√	√	Single Door Frame					
1	NA	100 x 50					√	√	√	Single Door Frame					
1	NA	130 x 65					√	√	√	Double Door Frame					

SPECIFICATION DETAILS

SPECIFICATION	GRADE
IS: 1239 (PART-1)	320
IS:1161	YST-210 , YST-240 , YST-310 & YST 355
IS:3589	FE 330,FE 410 & FE450
IS:4270	FE 410 & FE 450
IS:9295	ERW 210, ERW 240 & ERW 310
IS:4923	YST-210, YST-240, YST-310 & YST 355
IS:3601	WT 160, WT 200 , WT 240 & WT 310
ASTM A53	A,B
ASTM A178	A,B & C
ASTM A252	GR-1,2 & 3
ASTM A500	A,B,C
ASTM A589	A,B
EN 10255	S275 TO S355
EN 10219	S275 TO S355

PRODUCT MATRIX

WALL THICKNESS (MM)																
0.188	0.191	0.203	0.216	0.226	0.237	0.250	0.280	0.300	0.312	0.322	0.337	0.365	0.375	0.406	0.436	0.500
4.78	4.85	5.16	5.49	5.74	6.02	6.35	7.11	7.62	7.92	8.18	8.56	9.27	9.52	10.31	11.07	12.70

APPLICATION
MILD STEEL TUBES FOR WATER AND AIR
STEEL TUBES FOR STRUCTURAL PURPOSE
STEEL PIPE FOR WATER & SEWAGE
STEEL TUBES FOR WATER WELLS
STEEL TUBES FOR IDEALERS BELT CONVEYORS
HOLLOW SECTION FOR STRUCTURAL USE
STEEL TUBES FOR MECHANICAL & GENERAL ENGINEERING PURPOSE
SPECIFICATION FOR WATER , AIR & STEAM
CARBON STEEL FOR BOILER AND SUPER HEATER TUBES
COLD FORMED WELDED CARBON STEEL PIPES FOR PILES
COLD FORMED WELDED CARBON STEEL STRUCTURAL IN ROUND AND SHAPES
SPECIFICATION FOR WATER WELL PIPE
STEEL TUBE FOR WELDING AND THREADING
COLD FORMED WELDED STRUCTURAL HOLLOW SECTIONS OF NON-ALLOY AND FINE GRAIN STEELS

TOLERANCE TABLE

SPECIFICATION	OUTSIDE DIAMETER	WALL THICKNESS	WEIGHT	LENGTH
IS 1161:2014	Upto size 48.3 mm +0.4/-0.8 mm & size over 48.3 mm ± 1 % of nominal OD	± 10 % of nominal thickness	For single tube = ± 10 % of nominal weight. 10 tone (min) lots = ± 7.5% of nominal weight	Random Length: 4 to 7m Exact Length as per Customer requirement
IS 1239 (Part 1):2004	As per table	For light: - 8 % /+ no limit For medium & heavy: -10 % /+ no limit	Single tube: - 8 % & + 10 % for Light tubes for a lot of 10 MT min: +7.5%, -5% for Light tubes Single tubes: ± 10 % Medium & Heavy tubes For a lot of 10 MT min: ± 7.5% for Medium & Heavy tubes	Exact Length: +6 mm/-0 Random Length: 4 to 7m Approximate Length ± 150 mm
IS 3589:2001	± 0.75% mm of nominal OD	± 10% of nominal wall thickness	± 7.5 % of nominal weight	Exact Length: +10 mm/-0 Single Random Length: 4 to 7m Double Random Length: 7 to 14m
IS 3601:2006	As per IS 3601	±10 % of nominal wall thickness	Mass Kg/m as per annex B of IS 3601	Random Length: 4 to 7 m Exact Length as per Customer requirement
IS 4270:2001	± 1 % of nominal OD	+15 % / -12.5 % of nominal wall thickness	- 8 % & + 10 % of nominal weight	Random Length: 4 to 7m Exact Length as per Customer requirement
IS 4923:2017	± 1 % with a minimum of ± 0.5 mm	± 7.5 % Excluded Weld The height of the internal weld fin shall not exceed 60% of the wall thickness	- 8% & +10% of nominal weight ± 7% on lots of 10 tonnes	Exact Length: ± 6 mm Random Length as per Customer requirement
IS 9295:1983	± 0.8% of nominal OD	± 10 % of nominal thickness	For single tube ± 10% For load of 10 tonnes ± 7.5%	Exact Length: +6 mm/-0 Random Length: 4 to 7m
ASTM A53	For size OD ≤40 NB = ±0.4 mm size ≥50 NB = ± 1% of OD	-12.7% of Wall Thickness, + not specified	±10 % of specified weight (mass)	Single Random Length or Double random length or as per customer requirement

SPECIFICATION	OUTSIDE DIAMETER	WALL THICKNESS	WEIGHT	LENGTH
ASTM A252	± 1% of Specified OD	+12.5 % & minimum as per Table X1.1	+15% and -5% of Nominal Weight	Single random length 4.88 to 7.62 m Double random length 7.62 m with a minimum average of 10.67 m Uniform lengths length variation of ± 25 mm
ASTM A500	±0.75% of Specified OD	±10% of Specified Wall Thickness	—	Length ≤ 6.5 m: -6/+ 13 mm Length > 6.5 m: -6/+ 19 mm
ASTM A589	For size OD ≤40 NB = ±0.4 mm size ≥50 NB = ± 1% of OD	-12.7% of Wall Thickness, + not specified	±5 % of specified weight (mass)	Single Random Length or as per customer agreed
ASTM A795	For size OD ≤40 NB ±0.41 mm For size ≥50 NB ± 1% of OD	-12.7% of Wall Thickness + not specified	±5 % of specified weight	Single Random Length of 16 to 22 ft [4.9 to 6.7 m] or as per customer agreed
EN 10255	As per table	± 10 % for M and H series and Type L; – 8 % with the plus tolerance limited by the mass tolerance, for Types L1 and L2	± 7.5 % on bundles of 10 tons or more, for M and H series and Type L. +10%/ -8% on individual tubes for Types L1 and L2	Standard: 6 or 6.4 m Tolerance +150/-50 mm Exact: Upto 6 m Tolerance +10/-0 mm 6 to 12 m Tolerance +15/-0 mm
EN 10219	±1% with a minimum of ±0.5 mm and a maximum of ±1.0 mm	T ≤ 5 mm ± 10% T > 5 mm ± 0.5 mm	±6% of Nominal Weight	Random length 4 to16 m Approximate Length: -0/+50 mm Exact Length: <6 m +5/-0 mm ≥ 6 ≤10 m: +15/-0 mm >10 m: +5/-0 mm +1 mm/m
EN 10217	D ≤ 219.1 mm: ±1% or ±0.5 mm whichever is greater D> 219.1 mm: ±0.75% or ±6 mm whichever is smaller	Thickness ≤ 5 mm: ±10% or ±0.3 mm whichever is greater Thickness > 5 mm: ±8% or ±2 mm whichever is smaller	Mass per unit as per EN 10220	Length ≤ 6.0 m: -0/ +10 mm Length > 6.0 m: -0/ +15 mm
AS 1074	As per spec table for Light Medium & Heavy table	For light: - 8 % /+ no limit For medium & heavy: -10 % /+ no limit	Single tube: - 8 % & + 10 % for a Conginment mass for quantities of 150-meter min.: ± 4%	Exact Length: +8 mm/-0 Standard Length: 6.50 meter ± 80 mm

CHEMICAL & MECHANICAL PROPERTIES - IS STANDARD

SPEC.	GRADE	CHEMICAL COMPOSITION(%)					MECHANICAL PROPERTIES(MPA)		
		C MAX	MN MAX	P MAX	S MAX	CE	YIELD STRENGTH	TENSILE STRENGTH	ELONGATION (MIN %)
							MIN	MIN	
IS 3589	FE 330	0.160	1.200	0.040	0.040	-	195	330	20
	FE 410	0.200	1.300	0.040	0.040	0.450	235	410	18
	FE 450	0.250	1.200	0.040	0.040	0.450	275	450	15
IS 1239	LIGHT	0.120	0.600	0.040	0.040	-	-	320	20
	MEDIUM	0.120	0.600	0.040	0.040	-	-	320	20
	HEAVY	0.120	0.600	0.040	0.040	-	-	320	20
IS 1161	YST 210	0.120	0.600	0.040	0.040	-	210	330	20
	YST 240	0.160	1.200	0.040	0.040	0.450	240	410	17
	YST 310	0.250	1.300	0.040	0.040	0.450	310	450	14
	YST 355	0.250	1.500	0.040	0.040	0.450	355	490	10
IS 4923	YST 210	0.120	0.600	0.040	0.040	-	210	330	20
	YST 240	0.160	1.200	0.040	0.040	0.450	240	410	15
	YST 310	0.250	1.300	0.040	0.040	0.450	310	450	10
	YST 355	0.250	1.500	0.040	0.040	0.450	355	490	10
IS 3601	WT 160	0.100	0.500	0.040	0.040	-	160	310	22
	WT 210	0.120	0.600	0.040	0.040	-	210	330	20
	WT 240	0.160	1.200	0.040	0.040	0.450	240	410	15
	WT 310	0.250	1.300	0.040	0.040	0.450	310	450	10
IS 9295	YST 210	-	-	0.060	0.060	-	210	330	20
	YST 240	-	-	0.060	0.060	-	240	410	18
	YST 310	-	-	0.060	0.060	-	310	450	15
IS 4270	FE 410	-	-	0.040	0.040	-	235	410	15
		Hardness- 230 HV Max, Heat Treatment- Weld seam normalized & UT- Optional/ as per customer requirements							
	FE 450	-	-	0.040	0.040	-	275	450	13
IS 10748	1	0.100	0.500	0.040	0.040	-	170	290	30
	2	0.120	0.600	0.040	0.040	-	210	330	28
	3	0.160	1.200	0.040	0.040	-	240	410	25
	4	0.200	1.300	0.040	0.040	0.450	275	430	20
	5	0.250	1.300	0.040	0.040	0.450	310	490	15
	6	0.250	1.500	0.040	0.040	0.450	355	490	15
		Si-0.08, Al-0.02 MIN, Si-0.10 MIN, Nb+V+Ti-0.20, N-0.012 for all grade							

CHEMICAL & MECHANICAL PROPERTIES - ASTM STANDARD

SPEC.	GRADE	CHEMICAL COMPOSITION(%) C MAX	MN MAX	P MAX	S MAX	V MAX	OTHER	MECHANICAL PROPERTIES(MPA) YIELD STRENGTH OF BODY MIN	TENSILE STRENGTH OF BODY MIN	TENSILE STRENGTH OF WELD (MIN.)	ELONGATION (MIN %)
ASTM											
A53	A	0.250	0.950	0.050	0.045	0.080	Cu-0.40, Ni- 0.40, Cr- 0.40, Mo- 0.15, Cu+Ni+Cr+Mo+V - 1 (% max)	205	330	330	e =1940xA0.2/U0.9
	B	0.300	1.200	0.050	0.045	0.080	Cu-0.40, Ni- 0.40, Cr- 0.40, Mo- 0.15, Cu+Ni+Cr+Mo+V% - 1 (% max)	240	415	415	
	Heat Treatment- Weld Seam Normalized, Metallographic- No untempared martensite remains, UT- As per ASTM A53 for weld seam										
A252	1	-	-	0.050	-		-	205	345	-	AS PER ASTM A252 TABLE
	2	-	-	0.050	-	-	-	240	415	-	
	3	-	-	0.050	-	-	-	310	455	-	
A500	A	0.300	1.400	0.045	0.045	-	ROUND	230	310	-	25
						-	SECTION	270	310		25
	B	0.300	1.400	0.045	0.045	-	ROUND	290	400	-	23
							SECTION	315	410		23
	C	0.270	1.400	0.045	0.045	-	ROUND	315	425	-	21
							SECTION	345	425		21
	D	0.300	1.400	0.045	0.045	-	ROUND	250	400	-	23
							SECTION	250	400		23
A589	A	-	-	0.050	-	-	-	205	330	-	e =1940xA0.2/U0.9
	B	-	-	0.600	-	-	-	240	415	-	e =1940xA0.2/U0.9
A795	A	0.250	0.950	0.035	0.035	-	-	-	-	-	-
	B	0.300	1.200	0.035	0.035	-	-	-	-	-	-

CHEMICAL & MECHANICAL PROPERTIES - EN & AS STANDARD

SPEC.	GRADE	CHEMICAL COMPOSITION(%)							
		C MAX	MN MAX	P MAX	S MAX	SI MAX	V MAX	NB MAX	TI MAX
EN									
EN 10219	S235JRH	0.170	1.400	0.040	0.040	-	-	-	-
	S275J0H	0.200	1.500	0.035	0.035	-	-	-	-
	S275J2H	0.200	1.500	0.030	0.030	-	-	-	-
	S355J0H	0.220	1.600	0.035	0.035	0.550	-	-	-
	S355J2H	0.220	1.600	0.030	0.030	0.550	-	-	-
	S355K2H	0.220	1.600	0.030	0.030	0.550	-	-	-
EN 10219	S275MH	0.130	1.500	0.035	0.030	0.500	0.080	0.050	0.050
	S275MLH	0.130	1.500	0.030	0.025	0.500	0.080	0.050	0.050
	S355MH	0.140	1.500	0.035	0.030	0.500	0.100	0.050	0.050
	S355MLH	0.140	1.500	0.030	0.025	0.500	0.100	0.050	0.050
	S420MH	0.160	1.700	0.035	0.030	0.500	0.120	0.050	0.050
	S420MLH	0.160	1.700	0.030	0.025	0.500	0.120	0.050	0.050
	S460MH	0.160	1.700	0.035	0.030	0.600	0.120	0.050	0.050
	S460MLH	0.160	1.700	0.030	0.025	0.500	0.120	0.050	0.050
EN 1025	S195 T	0.200	1.400	0.035	0.300	-	-	-	-

			MECHANICAL PROPERTIES(MPA)			
CEIIW	OTHER	IMPACT TEST	YIELD STRENGTH OF BODY	TENSILE STRENGTH OF BODY		ELONGATION (MIN %) FOR GAUGE LENGTH 2" E"
			MIN	MIN	MAX	
EN						
0.350	N- 0.009	27J Min at Temp 20°C	235	360	510	24
0.400	N- 0.009	27J Min at Temp 0°C	275	410	560	20
0.400	-	27J Min Temp -20°C	275	410	560	20
0.450	N- 0.009	27J Min at Temp 0°C	355	470	630	20
0.450	-	27J Min at Temp -20°C	355	470	630	20
0.450	-	40J Min at Temp -20°C	355	470	630	20
0.340	N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020	40J Min at Temp -20°C	275	360	510	24
0.340	N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020	27J Min at Temp -50°C	275	360	510	24
0.390	N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020	40J Min at Temp -20°C	355	450	610	22
0.390	N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020	27J Min at Temp -50°C	355	450	610	22
0.430	N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020	40J Min at Temp -20°C	420	500	660	19
0.430	N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020	27J Min at Temp -50°C	420	500	660	19
0.460	N- 0.025, Ni- 0.30, Mo-0.20, Al - 0.020	40J Min at Temp -20°C	460	530	720	17
0.460	N- 0.025, Ni- 0.30, Mo-0.20, Al - 0.020	27J Min at Temp -50°C	460	530	720	17
-		-	195	320	520	20

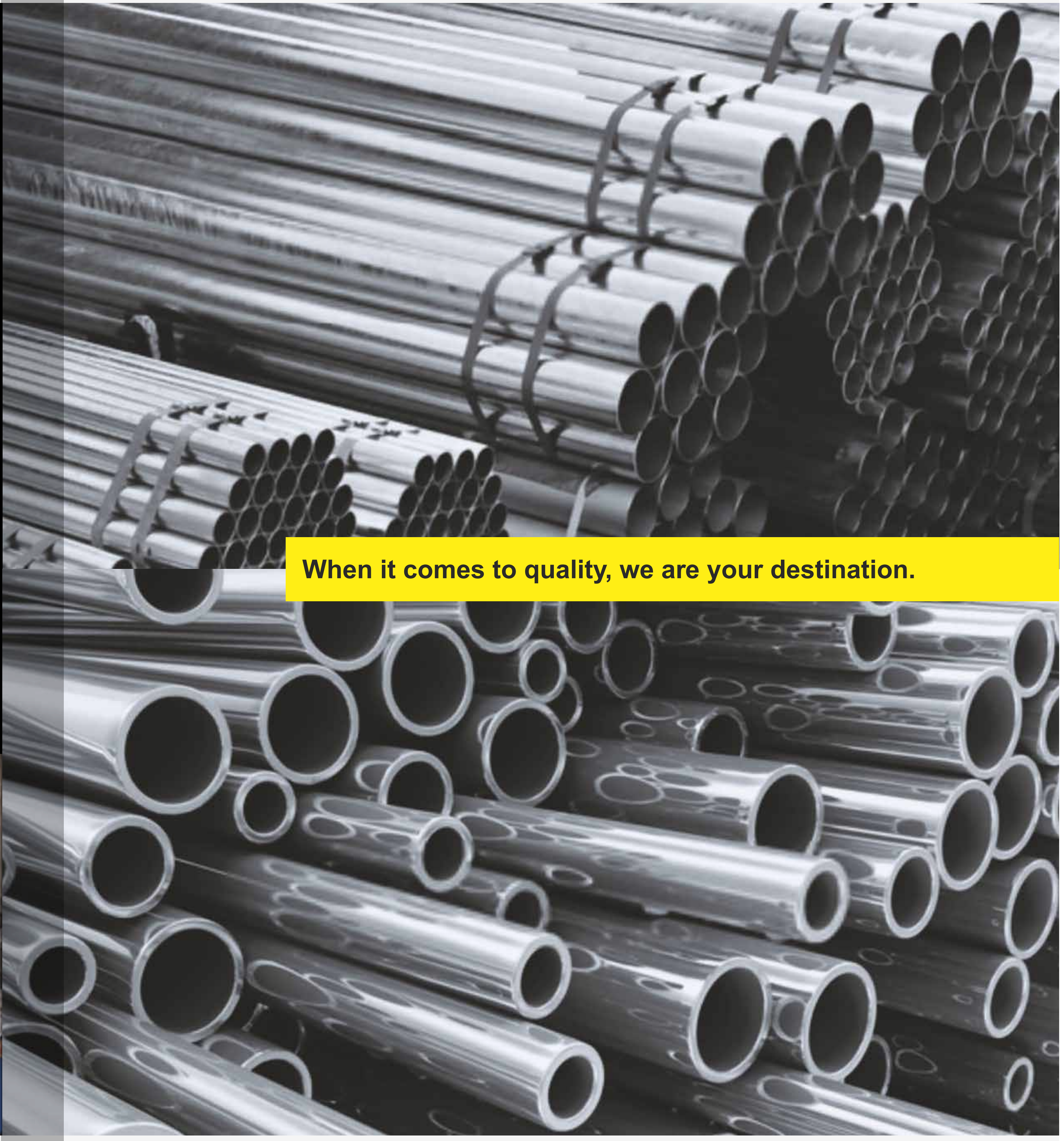
CHEMICAL & MECHANICAL PROPERTIES - EN & AS STANDARD

SPEC.	GRADE	CHEMICAL COMPOSITION(%)							
		C MAX	MN MAX	P MAX	S MAX	SI MAX	V MAX	NB MAX	TI MAX
EN 10217-1	P195 TR1	0.130	0.700	0.025	0.020	0.350	0.020	0.010	0.040
EN 10217-1	P195 TR2	0.130	0.700	0.025	0.020	0.350	0.020	0.010	0.040
EN 10217-1	P235 TR1	0.160	1.200	0.025	0.020	0.350	0.020	0.010	0.040
EN 10217-1	P235 TR2	0.160	1.200	0.025	0.020	0.350	0.020	0.010	0.040
EN 10217-1	P265 TR1	0.200	1.400	0.025	0.020	0.400	0.020	0.010	0.040
EN 10217-1	P265 TR2	0.200	1.400	0.025	0.020	0.400	0.020	0.010	0.040
AS									
AS 1074	-	-	-	0.045	0.045	-	-	-	-

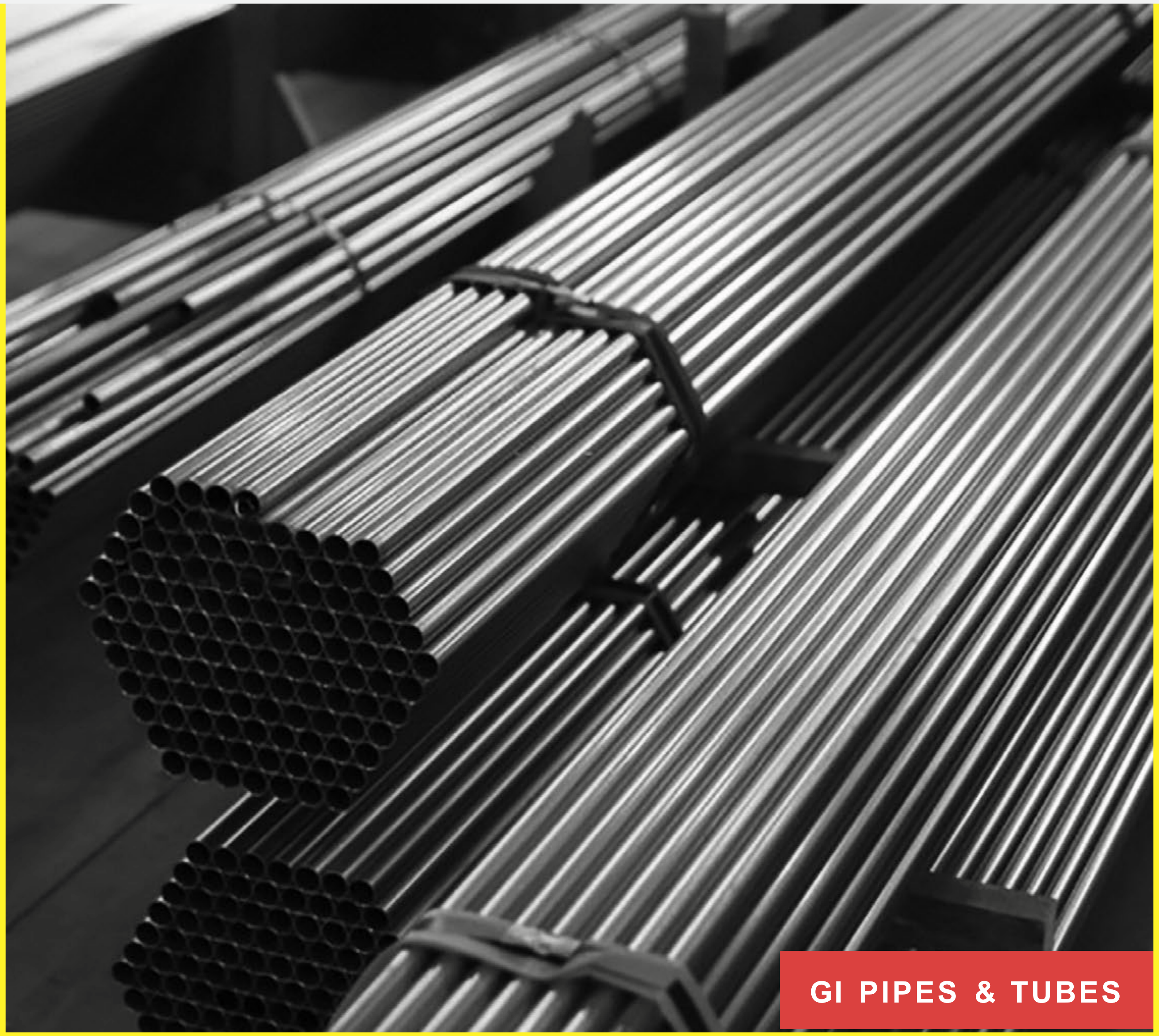
			MECHANICAL PROPERTIES(MPA)			
CEIIW	OTHER	IMPACT TEST	YIELD STRENGTH OF BODY	TENSILE STRENGTH OF BODY		ELONGATION (MIN %) FOR GAUGE LENGTH 2" E"
			MIN	MIN	MAX	
-	Cr- 0.30, Mo-0.08, Ni- 0.30, Cu-0.30 Cr+Cu+Mo+Ni - 0.70 Min		195	320	440	Longitudinal - 27 Transverse - 25
-	Cr- 0.30, Mo-0.08, Ni- 0.30, Al -0.02, Cu-0.30 Cr+Cu+Mo+Ni - 0.70 Min	Impact Test (Longi) at Temp 0°C = 40J Min, at Temp -10°C = 28J Min Impact (Trans) - at 0°C = 27J Min	195	320	440	Longitudinal - 27 Transverse - 25
-	Cr- 0.30, Mo-0.08, Ni- 0.30, Cu-0.30 Cr+Cu+Mo+Ni - 0.70 Min		235	360	500	Longitudinal - 27 Transverse - 23
-	Cr- 0.30, Mo-0.08, Ni- 0.30, Al -0.02 Cu-0.30 Cr+Cu+Mo+Ni - 0.70 Min	Impact Test (Longi) at Temp 0°C = 40J Min , at Temp -10°C = 28J Min Impact (Trans) - at 0°C = 27J Min	235	360	500	Longitudinal - 25 Transverse - 23
-	Cr- 0.30, Mo-0.08, Ni- 0.30, Cu-0.30 Cr+Cu+Mo+Ni - 0.70 Min		265	410	570	Longitudinal - 21 Transverse - 19
-	Cr- 0.30, Mo-0.08, Ni- 0.30, Al -0.02 Cu-0.30 Cr+Cu+Mo+Ni - 0.70 Min	Impact Test (Longi) at Temp 0OC = 40J Min , at Temp -10OC = 28J Min Impact (Trans) - at 0°C = 27J Min	265	410	570	Longitudinal - 21 Transverse - 19
AS						
-	-	-	195	320	460	20

EMPOWER YOUR PIPES WITH STATE-OF-THE-ART GI/GP PROTECTION.

CUSTOMIZE OR STANDARDIZE YOUR PIPES WITH OUR BEST-IN-CLASS GI OR GP PROTECTION.



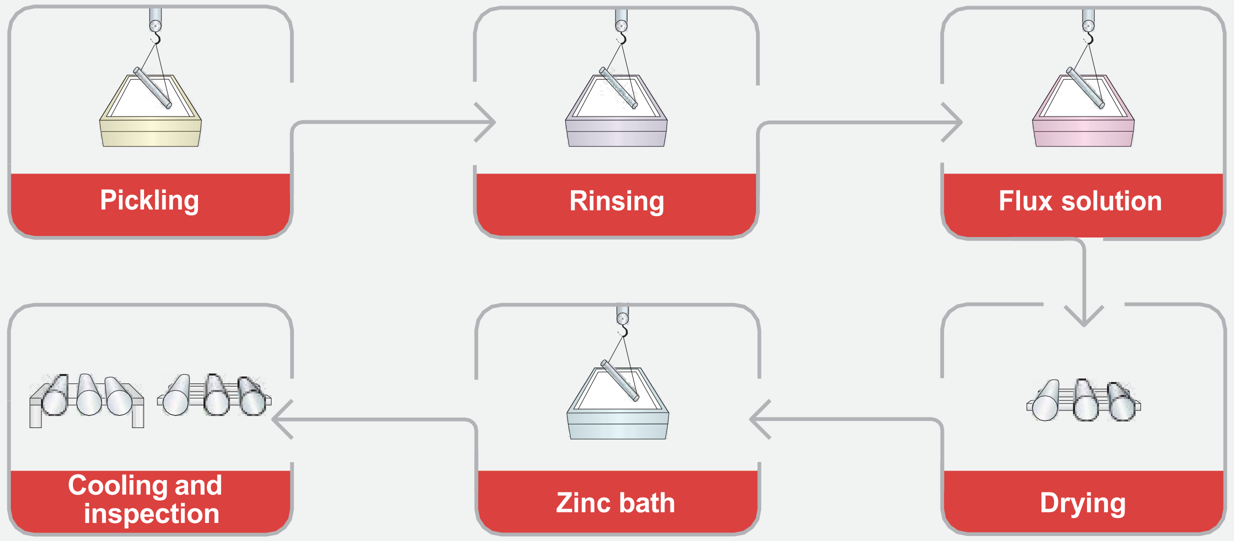
When it comes to quality, we are your destination.



BEST IN CLASS HOT-DIPPED GALVANIZING PROCESS (GI)

THAT ENSURES ENDLESS PROTECTION FOR YOUR PIPES.

PROCESS FLOW CHART



Nominal diameter (mm): 15 NB - 300 NB | Nominal wall thickness (mm): 0.9 - 12.70 | Length (mtr): 4 - 7.3

WHEN THE PIPES' TRANSPORTATION TASK IS LIFE & MISSION CRITICAL, CUSTOMIZATION THROUGH OUR WORLD-CLASS HOT-DIPPED GI TECHNOLOGY, DELIVERS SUPERIOR RESULTS!

Goel Pipes have invested in the latest Hot-Dipped-Galvanizing-Technology to deliver high levels of customization, ensuring not just safety, but tremendous longevity for your pipes. Our Hot Dipped Galvanizing technology ensures:

1) Complete de-rusting of the pipes

2) Complete immersion of the– de-rusted pipes into Molten Zinc at high temperatures of 435-450°C, ensuring homogenous coverage of the entire pipe surface and all other customized areas of your pipe design.

3) Making your entire pipe surface 100% safe from rust/ corrosion, due to its complete coverage

4) Our customized galvanization protects your pipes from electro-chemical corrosions, as the homogenous Zinc coating presents itself as the first line of defense from all corrosion causing assaults on the pipe.

5) Providing the best protection & longevity for your pipes.

6) No aluminium added to our GI Pipes

Goel GI Pipes sets unbeatable standards across the key parameters of Safety, Protection & Longevity.

GOEL PRE-GALVANIZED (GP) PIPES COME PRE-PROTECTED & PRE-EMPOWERED.

SPECIFICATIONS & ADVANTAGE
Pipe/ Tube thickness: From 1/2“ to 6”
Pure & Thicker Zinc coating
100% Eco—friendly
Corrosion resistant
Highly Economical
Strength & Durability
Superior Quality

The rusting of normal pipes and tubes impede the quality of items the pipes are transporting, in the long run. Rusting of normal pipes adds substantially to your overall costs as they needs to be replaced periodically. Our pre-galvanized pipes are polished, with an even finish and striking looks. Tremendous durability and strength adds to the overall appeal and cost efficiency.

The homogenous ‘zinc coating process’ is done on the original thin sheets of carbon steel base of the pipes. This helps the pipes to easily withstand any physical/ mechanical deformation without affecting its zinc coating. This accounts for the pipes functional superiority as well as safety and longevity.

The Goel GP pipes & tubes comes pre-galvanized right from the factory, coated with safety and durability!

OUR GP PIPES’ POWER OF PROTECTION OUTSHINES EVEN ITS STUNNING LOOKS!

GP PIPES & TUBES

ERW PIPES FOR WATER & SEWAGE CONFORMING TO IS 3589/ISO 559/ EN 10217& WATER WELL CASING CONFORMING TO IS 4270/ASTM A589

CONVENTIONAL MASS PER UNIT LENGTH (KG/MTR) BLACK PIPE

PRODUCT SIZE		WALL THICKNESS (MM)									
NB (MM)	OD (MM)	2.5	2.9	3.2	3.6	4	4.5	4.8	5.4	5.6	6
100	114.3	6.89	7.97	8.77	9.83	10.88	12.18	12.96	14.50	15.01	16.02
125	141.3			10.77	12.08	13.39	15.00	16.16	17.88	18.52	19.78
150	168.3			13.03	14.62	16.21	18.18	19.35	21.69	22.47	24.01
175	193.7			15.03	16.88	18.71	21.00	22.36	25.07	25.98	27.77
200	219.1			17.04	19.13	21.22	23.81	25.37	28.46	29.48	31.53
250	273.1				23.93	26.54	29.81	31.76	35.65	36.94	39.52
300	323.9				28.43	31.55	35.44	37.77	42.41	43.96	47.04

Note:-

a) IS 4270 covers Pipe size 100 mm to 300 mm NB & IS 3589 covers Pipe size 168.3 mm OD to 323.9 mm OD.

b) IS 4270 covers wall Thickness upto 7.10 mm & other higher thickness may supplied as per mutual agreement with customer.

c) Maximum Hydro Test Pressure for IS 3589 - 5 Mpa & for IS 4270 - 7 Mpa

CONVENTIONAL MASS PER UNIT LENGTH (KG/M)

WALL THICKNESS (MM)												
6.35	7.1	7.6	8	8.4	8.7	9	9.3	9.5	10	11	12	12.7
16.90	18.77											
20.88	23.22	24.76	25.98									
25.36	28.22	30.12	31.62	33.12								
29.34	32.67	34.88	36.63	38.38	39.69	40.99						
33.31	37.12	39.64	41.65	43.65	45.14	46.63	48.12	49.10	51.56	56.45	61.29	64.64
41.77	46.57	49.76	52.30	54.83	56.72	58.61	60.50	61.75	64.88	71.10	77.26	81.55
49.73	55.47	59.28	62.32	65.35	67.62	69.89	72.15	73.65	77.41	84.88	92.30	97.46

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
1	20 x 20	-	0.9	0.035	0.52	0.035	0.67	0.40	0.77	0.40	0.47
2	20 x 20	-	1.5	0.059	0.83	0.055	1.05	0.58	0.74	0.58	0.72
3	20 x 20	-	2.0	0.079	1.05	0.071	1.34	0.69	0.72	0.69	0.88
4	20 x 20	-	2.3	0.091	1.17	0.079	1.49	0.74	0.70	0.74	0.96
5	25 x 25	1 x 1	0.9	0.035	2.10	0.141	2.68	3.23	1.10	2.15	2.68
6	25 x 25	1 x 1	1.2	0.047	0.87	0.058	1.11	1.03	0.96	0.82	0.97
7	25 x 25	1 x 1	1.6	0.063	1.12	0.076	1.43	1.28	0.94	1.02	1.24
8	25 x 25	1 x 1	1.8	0.071	1.25	0.084	1.59	1.38	0.93	1.11	1.35
9	25 x 25	1 x 1	2.0	0.079	1.36	0.092	1.74	1.48	0.92	1.19	1.47
10	25 x 25	1 x 1	2.3	0.091	1.53	0.103	1.95	1.61	0.91	1.29	1.62
11	25 x 25	1 x 1	2.5	0.098	1.64	0.110	2.09	1.69	0.90	1.35	1.71
12	25 x 25	1 x 1	2.6	0.102	1.69	0.114	2.16	1.72	0.89	1.38	1.76
13	25 x 25	1 x 1	2.9	0.114	1.84	0.124	2.35	1.81	0.88	1.45	1.88
14	25 x 25	1 x 1	3.2	0.126	1.98	0.133	2.53	1.89	0.86	1.51	1.98
15	30 x 30	-	1.2	0.047	1.06	0.071	1.35	1.83	1.17	1.22	1.44
16	30 x 30	-	1.6	0.063	1.37	0.092	1.75	2.31	1.15	1.54	1.84
17	30 x 30	-	1.8	0.071	1.53	0.103	1.95	2.52	1.14	1.68	2.03
18	30 x 30	-	2.0	0.079	1.68	0.113	2.14	2.72	1.13	1.81	2.21
19	30 x 30	-	2.3	0.091	1.89	0.127	2.41	2.99	1.11	2.00	2.45
20	30 x 30	-	2.5	0.098	2.03	0.137	2.59	3.16	1.10	2.10	2.61
21	30 x 30	-	2.6	0.102	2.10	0.141	2.68	3.23	1.10	2.15	2.68
22	30 x 30	-	2.9	0.114	2.30	0.154	2.93	3.44	1.08	2.29	2.89
23	30 x 30	-	3.2	0.126	2.49	0.167	3.17	3.62	1.07	2.41	3.08
24	30 x 30	-	3.6	0.142	2.72	0.183	3.47	3.82	1.05	2.54	3.31
25	32 x 32	-	1.2	0.047	1.13	0.076	1.44	2.25	1.25	1.41	1.65
26	32 x 32	-	1.6	0.063	1.48	0.099	1.88	2.84	1.23	1.78	2.12
27	32 x 32	-	1.8	0.071	1.64	0.110	2.09	3.11	1.22	1.95	2.33
28	32 x 32	-	2.0	0.079	1.80	0.121	2.30	3.36	1.21	2.10	2.54
29	32 x 32	-	2.3	0.091	2.04	0.137	2.60	3.71	1.20	2.32	2.84
30	32 x 32	-	2.5	0.098	2.19	0.147	2.79	3.92	1.19	2.45	3.02
31	32 x 32	-	2.6	0.102	2.26	0.152	2.88	4.02	1.18	2.51	3.11
32	32 x 32	-	2.9	0.114	2.48	0.167	3.16	4.30	1.17	2.68	3.36
33	32 x 32	-	3.2	0.126	2.69	0.181	3.42	4.54	1.15	2.83	3.59
34	32 x 32	-	3.6	0.142	2.95	0.198	3.76	4.81	1.13	3.00	3.87
35	32 x 32	-	4.0	0.157	3.19	0.215	4.07	5.02	1.11	3.14	4.11

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
36	35 x 35	-	1.6	0.063	1.63	0.109	2.07	3.79	1.35	2.16	2.57
37	35 x 35	-	1.8	0.071	1.81	0.122	2.31	4.16	1.34	2.38	2.84
38	35 x 35	-	2.0	0.079	1.99	0.134	2.54	4.51	1.33	2.58	3.09
39	35 x 35	-	2.3	0.091	2.25	0.151	2.87	4.99	1.32	2.85	3.46
40	35 x 35	-	2.5	0.098	2.42	0.163	3.09	5.29	1.31	3.02	3.69
41	35 x 35	-	2.6	0.102	2.51	0.169	3.20	5.43	1.30	3.10	3.81
42	35 x 35	-	2.9	0.114	2.75	0.185	3.51	5.83	1.29	3.33	4.13
43	35 x 35	-	3.2	0.126	2.99	0.201	3.81	6.18	1.27	3.53	4.42
44	35 x 35	-	3.6	0.142	3.29	0.221	4.19	6.59	1.25	3.76	4.79
45	35 x 35	-	4.0	0.157	3.57	0.240	4.55	6.93	1.23	3.96	5.11
46	38 x 38	1.5 x 1.5	1.6	0.063	1.78	0.119	2.26	4.92	1.47	2.59	3.06
47	38 x 38	1.5 x 1.5	1.8	0.071	1.98	0.133	2.52	5.42	1.47	2.85	3.39
48	38 x 38	1.5 x 1.5	2.0	0.079	2.18	0.146	2.78	5.88	1.46	3.10	3.70
49	38 x 38	1.5 x 1.5	2.3	0.091	2.47	0.166	3.15	6.54	1.44	3.44	4.15
50	38 x 38	1.5 x 1.5	2.5	0.098	2.66	0.179	3.39	6.94	1.43	3.65	4.44
51	38 x 38	1.5 x 1.5	2.6	0.102	2.75	0.185	3.51	7.13	1.43	3.76	4.57
52	38 x 38	1.5 x 1.5	2.9	0.114	3.03	0.203	3.85	7.68	1.41	4.04	4.97
53	38 x 38	1.5 x 1.5	3.2	0.126	3.29	0.221	4.19	8.18	1.40	4.30	5.34
54	38 x 38	1.5 x 1.5	3.6	0.142	3.63	0.244	4.62	8.76	1.38	4.61	5.80
55	38 x 38	1.5 x 1.5	4.0	0.157	3.95	0.265	5.03	9.26	1.36	4.87	6.22
56	40 x 40	-	1.6	0.063	1.88	0.126	2.39	5.79	1.56	2.90	3.41
57	40 x 40	-	1.8	0.071	2.09	0.141	2.67	6.38	1.55	3.19	3.78
58	40 x 40	-	2.0	0.079	2.31	0.155	2.94	6.94	1.54	3.47	4.13
59	40 x 40	-	2.3	0.091	2.62	0.176	3.33	7.73	1.52	3.86	4.64
60	40 x 40	-	2.5	0.098	2.82	0.189	3.59	8.21	1.51	4.11	4.97
61	40 x 40	-	2.6	0.102	2.92	0.196	3.72	8.45	1.51	4.22	5.12
62	40 x 40	-	2.9	0.114	3.21	0.216	4.09	9.11	1.49	4.56	5.58
63	40 x 40	-	3.2	0.126	3.49	0.235	4.45	9.72	1.48	4.86	6.00
64	40 x 40	-	3.6	0.142	3.85	0.259	4.91	10.44	1.46	5.22	6.53
65	40 x 40	-	4.0	0.157	4.20	0.282	5.35	11.07	1.44	5.54	7.01
66	45 x 45	-	1.6	0.063	2.13	0.143	2.71	8.41	1.76	3.74	4.38
67	45 x 45	-	1.8	0.071	2.38	0.160	3.03	9.28	1.75	4.13	4.86
68	45 x 45	-	2.0	0.079	2.62	0.176	3.34	10.12	1.74	4.50	5.32
69	45 x 45	-	2.3	0.091	2.98	0.200	3.79	11.31	1.73	5.03	6.00
70	45 x 45	-	2.5	0.098	3.21	0.216	4.09	12.06	1.72	5.36	6.43

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
71	45 x 45	-	2.6	0.102	3.32	0.223	4.24	12.42	1.71	5.52	6.64
72	45 x 45	-	2.9	0.114	3.66	0.246	4.67	13.45	1.70	5.98	7.25
73	45 x 45	-	3.2	0.126	3.99	0.268	5.09	14.41	1.68	6.40	7.82
74	45 x 45	-	3.6	0.142	4.42	0.297	5.63	15.57	1.66	6.92	8.55
75	45 x 45	-	4.0	0.157	4.83	0.324	6.15	16.61	1.64	7.38	9.22
76	50 x 50	2 x 2	1.8	0.071	2.66	0.179	3.39	12.9	1.96	5.18	6.07
77	50 x 50	2 x 2	2.0	0.079	2.93	0.197	3.74	14.1	1.95	5.66	6.66
78	50 x 50	2 x 2	2.3	0.091	3.34	0.224	4.25	15.9	1.93	6.34	7.52
79	50 x 50	2 x 2	2.5	0.098	3.60	0.242	4.59	16.9	1.92	6.78	8.07
80	50 x 50	2 x 2	2.9	0.114	4.12	0.277	5.25	19.0	1.90	7.59	9.13
81	50 x 50	2 x 2	3.2	0.126	4.50	0.302	5.73	20.4	1.89	8.16	9.89
82	50 x 50	2 x 2	3.6	0.142	4.98	0.335	6.35	22.1	1.87	8.86	10.84
83	50 x 50	2 x 2	4.0	0.157	5.45	0.366	6.95	23.7	1.85	9.49	11.73
84	50 x 50	2 x 2	4.5	0.177	6.02	0.404	7.67	25.5	1.82	10.20	12.76
85	60 x 60	-	2.0	0.079	3.56	0.239	4.54	25.1	2.35	8.38	9.79
86	60 x 60	-	2.3	0.091	4.06	0.273	5.17	28.3	2.34	9.44	11.09
87	60 x 60	-	2.5	0.098	4.39	0.295	5.59	30.3	2.33	10.11	11.93
88	60 x 60	-	2.9	0.114	5.03	0.338	6.41	34.2	2.31	11.40	13.56
89	60 x 60	-	3.2	0.126	5.50	0.370	7.01	36.9	2.30	12.31	14.73
90	60 x 60	-	3.6	0.142	6.11	0.411	7.79	40.4	2.28	13.45	16.22
91	60 x 60	-	4.0	0.157	6.71	0.451	8.55	43.5	2.26	14.52	17.64
92	60 x 60	-	4.5	0.177	7.43	0.499	9.47	47.2	2.23	15.73	19.31
93	60 x 60	-	4.8	0.189	7.85	0.528	10.00	49.2	2.22	16.40	20.27
94	60 x 60	-	5.4	0.213	8.67	0.582	11.04	52.9	2.19	17.63	22.05
95	60 x 60	-	5.6	0.220	8.93	0.600	11.38	54.0	2.18	18.00	22.61
96	63.5 x 63.5	2.5 x 2.5	2.3	0.091	4.31	0.290	5.49	33.9	2.48	10.66	12.50
97	63.5 x 63.5	2.5 x 2.5	2.5	0.098	4.66	0.313	5.94	36.3	2.47	11.44	13.46
98	63.5 x 63.5	2.5 x 2.5	2.9	0.114	5.35	0.359	6.81	41.0	2.45	12.92	15.31
99	63.5 x 63.5	2.5 x 2.5	3.2	0.126	5.85	0.393	7.45	44.35	2.44	13.97	16.65
100	63.5 x 63.5	2.5 x 2.5	3.6	0.142	6.51	0.437	8.29	48.55	2.42	15.29	18.36
101	63.5 x 63.5	2.5 x 2.5	4.0	0.157	7.15	0.480	9.11	52.47	2.40	16.53	19.99
102	63.5 x 63.5	2.5 x 2.5	4.5	0.177	7.93	0.533	10.10	57.00	2.38	17.95	21.93
103	63.5 x 63.5	2.5 x 2.5	4.8	0.189	8.38	0.563	10.68	59.52	2.36	18.75	23.03
104	63.5 x 63.5	2.5 x 2.5	5.4	0.213	9.26	0.622	11.80	64.13	2.33	20.20	25.11
105	70 x 70	-	2.5	0.098	5.17	0.348	6.59	49.4	2.74	14.12	16.54

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
106	70 x 70	-	2.9	0.114	5.94	0.399	7.57	55.9	2.72	15.98	18.85
107	70 x 70	-	3.2	0.126	6.50	0.437	8.29	60.6	2.70	17.32	20.53
108	70 x 70	-	3.6	0.142	7.24	0.487	9.23	66.5	2.69	19.01	22.68
109	70 x 70	-	4.0	0.157	7.97	0.535	10.15	72.1	2.67	20.60	24.75
110	70 x 70	-	4.5	0.177	8.85	0.594	11.27	78.6	2.64	22.46	27.22
111	70 x 70	-	4.8	0.189	9.36	0.629	11.92	82.3	2.63	23.51	28.64
112	70 x 70	-	5.4	0.213	10.36	0.696	13.20	89.1	2.60	25.45	31.33
113	70 x 70	-	5.6	0.220	10.69	0.718	13.62	91.2	2.59	26.05	32.18
114	70 x 70	-	6.0	0.236	11.33	0.761	14.43	95.2	2.57	27.19	33.83
115	72 x 72	-	2.5	0.098	5.33	0.358	6.79	54.0	2.82	15.00	17.55
116	72 x 72	-	2.9	0.114	6.12	0.411	7.80	61.2	2.80	16.99	20.01
117	72 x 72	-	3.2	0.126	6.71	0.451	8.54	66.32	2.79	18.42	21.80
118	72 x 72	-	3.6	0.142	7.47	0.502	9.52	72.85	2.77	20.24	24.11
119	72 x 72	-	4.0	0.157	8.22	0.552	10.47	79.02	2.75	21.95	26.32
120	72 x 72	-	4.5	0.177	9.13	0.613	11.63	86.23	2.72	23.95	28.96
121	72 x 72	-	4.8	0.189	9.66	0.649	12.31	90.30	2.71	25.08	30.48
122	72 x 72	-	5.4	0.213	10.70	0.719	13.63	97.87	2.68	27.18	33.38
123	72 x 72	-	5.6	0.220	11.04	0.742	14.06	100.22	2.67	27.84	34.30
124	72 x 72	-	6.0	0.236	11.71	0.787	14.91	104.69	2.65	29.08	36.07
125	75 x 75	3 X 3	2.5	0.098	5.56	0.374	7.09	61.38	2.94	16.37	19.12
126	75 x 75	3 X 3	2.9	0.114	6.40	0.430	8.15	69.62	2.92	18.57	21.82
127	75 x 75	3 X 3	3.2	0.126	7.01	0.471	8.93	75.53	2.91	20.14	23.79
128	75 x 75	3 X 3	3.6	0.142	7.81	0.525	9.95	83.05	2.89	22.15	26.32
129	75 x 75	3 X 3	4.0	0.157	8.59	0.577	10.95	90.18	2.87	24.05	28.76
130	75 x 75	3 X 3	4.5	0.177	9.55	0.642	12.17	98.54	2.85	26.28	31.68
131	75 x 75	3 X 3	4.8	0.189	10.11	0.680	12.88	103.28	2.83	27.54	33.36
132	75 x 75	3 X 3	5.4	0.213	11.21	0.753	14.28	112.12	2.80	29.90	36.57
133	75 x 75	3 X 3	5.6	0.220	11.57	0.777	14.74	114.89	2.79	30.64	37.60
134	75 x 75	3 X 3	6.0	0.236	12.27	0.825	15.63	120.15	2.77	32.04	39.58
135	80 x 80	-	2.5	0.098	5.96	0.400	7.59	75.1	3.15	18.79	21.89
136	80 x 80	-	2.9	0.114	6.85	0.460	8.73	85.4	3.13	21.34	25.01
137	80 x 80	-	3.2	0.126	7.51	0.505	9.57	92.7	3.11	23.18	27.29
138	80 x 80	-	3.6	0.142	8.37	0.563	10.67	102.1	3.09	25.53	30.23
139	80 x 80	-	4.0	0.157	9.22	0.620	11.75	111.0	3.07	27.76	33.07
140	80 x 80	-	4.5	0.177	10.26	0.689	13.07	121.6	3.05	30.39	36.48

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
141	80 x 80	-	4.8	0.189	10.87	0.730	13.84	127.6	3.04	31.89	38.45
142	80 x 80	-	5.4	0.213	12.06	0.810	15.36	138.8	3.01	34.71	42.22
143	80 x 80	-	5.6	0.220	12.45	0.836	15.86	142.4	3.00	35.60	43.44
144	80 x 80	-	6.0	0.236	13.21	0.888	16.83	149.2	2.98	37.29	45.78
145	80 x 80	-	6.35	0.250	13.87	0.932	17.67	154.8	2.96	38.69	47.76
146	91.5 x 91.5	3.5 x 3.5	2.5	0.098	6.86	0.461	8.74	114.3	3.62	24.98	28.98
147	91.5 x 91.5	3.5 x 3.5	2.9	0.114	7.90	0.531	10.06	130.2	3.60	28.45	33.18
148	91.5 x 91.5	3.5 x 3.5	3.2	0.126	8.66	0.582	11.04	141.7	3.58	30.97	36.25
149	91.5 x 91.5	3.5 x 3.5	3.6	0.142	9.67	0.650	12.32	156.48	3.56	34.20	40.24
150	91.5 x 91.5	3.5 x 3.5	4.0	0.157	10.67	0.717	13.59	170.67	3.54	37.31	44.11
151	91.5 x 91.5	3.5 x 3.5	4.5	0.177	11.88	0.798	15.14	187.56	3.52	41.00	48.79
152	91.5 x 91.5	3.5 x 3.5	4.8	0.189	12.60	0.847	16.05	197.25	3.51	43.12	51.51
153	91.5 x 91.5	3.5 x 3.5	5.4	0.213	14.01	0.941	17.85	215.66	3.48	47.14	56.76
154	91.5 x 91.5	3.5 x 3.5	5.6	0.220	14.47	0.972	18.43	221.51	3.47	48.42	58.45
155	91.5 x 91.5	3.5 x 3.5	6.0	0.236	15.38	1.033	19.59	232.79	3.45	50.88	61.76
156	91.5 x 91.5	3.5 x 3.5	6.35	0.250	16.16	1.086	20.59	242.21	3.43	52.94	64.56
157	100 x 100	4 X 4	2.9	0.114	8.67	0.583	11.05	171.85	3.94	34.37	39.95
158	100 x 100	4 X 4	3.2	0.126	9.52	0.640	12.13	187.27	3.93	37.45	43.69
159	100 x 100	4 X 4	3.6	0.142	10.63	0.715	13.55	207.17	3.91	41.43	48.56
160	100 x 100	4 X 4	4.0	0.157	11.73	0.788	14.95	226.34	3.89	45.27	53.30
161	100 x 100	4 X 4	4.5	0.177	13.08	0.879	16.67	249.27	3.87	49.85	59.04
162	100 x 100	4 X 4	4.8	0.189	13.88	0.933	17.68	262.49	3.85	52.50	62.39
163	100 x 100	4 X 4	5.0	0.197	14.41	0.968	18.36	271.08	3.84	54.22	64.59
164	100 x 100	4 X 4	5.4	0.213	15.45	1.038	19.68	287.74	3.82	57.55	68.88
165	100 x 100	4 X 4	5.6	0.220	15.96	1.073	20.34	295.82	3.81	59.16	70.98
166	100 x 100	4 X 4	6.0	0.236	16.98	1.141	21.63	311.45	3.79	62.29	75.09
167	100 x 100	4 X 4	6.35	0.250	17.86	1.200	22.75	324.57	3.78	64.91	78.59
168	113.5 x 113.5	4.5 x 4.5	3.2	0.126	10.88	0.731	13.85	278.19	4.48	49.02	56.93
169	113.5 x 113.5	4.5 x 4.5	3.6	0.142	12.16	0.817	15.49	308.41	4.46	54.34	63.37
170	113.5 x 113.5	4.5 x 4.5	4.0	0.157	13.43	0.902	17.11	337.65	4.44	59.50	69.66
171	113.5 x 113.5	4.5 x 4.5	4.5	0.177	14.99	1.007	19.10	372.86	4.42	65.70	77.32
172	113.5 x 113.5	4.5 x 4.5	4.8	0.189	15.92	1.070	20.28	393.28	4.40	69.30	81.81
173	113.5 x 113.5	4.5 x 4.5	5.4	0.213	17.74	1.192	22.60	432.55	4.38	76.22	90.54
174	113.5 x 113.5	4.5 x 4.5	5.6	0.220	18.34	1.232	23.36	445.19	4.37	78.45	93.38
175	113.5 x 113.5	4.5 x 4.5	6.0	0.236	19.52	1.312	24.87	469.78	4.35	82.78	98.95

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
176	113.5 x 113.5	4.5 x 4.5	6.35	0.250	20.55	1.381	26.18	490.56	4.33	86.44	103.71
177	120 x 120	-	3.2	0.126	11.53	0.775	14.69	330.9	4.75	55.14	63.93
178	120 x 120	-	3.6	0.142	12.90	0.867	16.43	367.1	4.73	61.18	71.20
179	120 x 120	-	4.0	0.157	14.25	0.957	18.15	402.3	4.71	67.04	78.32
180	120 x 120	-	4.5	0.177	15.91	1.069	20.27	444.7	4.68	74.11	87.00
181	120 x 120	-	4.8	0.189	16.90	1.135	21.52	469.3	4.67	78.22	92.09
182	120 x 120	-	5.4	0.213	18.84	1.266	24.00	516.9	4.64	86.15	102.02
183	120 x 120	-	5.6	0.220	19.48	1.309	24.82	532.2	4.63	88.70	105.25
184	120 x 120	-	6.0	0.236	20.75	1.394	26.43	562.1	4.61	93.69	111.61
185	120 x 120	-	6.35	0.250	21.84	1.468	27.83	587.5	4.59	97.91	117.04
186	125 x 125	5 x 5	3.2	0.126	12.03	0.808	15.33	375.6	4.95	60.10	69.59
187	125 x 125	5 x 5	3.6	0.142	13.46	0.905	17.15	417.0	4.93	66.72	77.54
188	125 x 125	5 x 5	4.0	0.157	14.87	0.999	18.95	457.2	4.91	73.15	85.33
189	125 x 125	5 x 5	4.5	0.177	16.62	1.117	21.17	505.80	4.89	80.93	94.84
190	125 x 125	5 x 5	4.8	0.189	17.65	1.186	22.48	534.08	4.87	85.45	100.42
191	125 x 125	5 x 5	5.0	0.197	18.33	1.232	23.36	552.58	4.86	88.41	104.09
192	125 x 125	5 x 5	5.4	0.213	19.69	1.323	25.08	588.73	4.84	94.20	111.32
193	125 x 125	5 x 5	5.6	0.220	20.36	1.368	25.94	606.38	4.84	97.02	114.87
194	125 x 125	5 x 5	6.0	0.236	21.69	1.458	27.63	640.84	4.82	102.53	121.86
195	125 x 125	5 x 5	6.35	0.250	22.84	1.535	29.10	670.09	4.80	107.22	127.84
196	125 x 125	5 x 5	7.1	0.280	25.26	1.698	32.18	729.97	4.76	116.80	140.27
197	125 x 125	5 x 5	7.6	0.299	26.85	1.804	34.20	767.81	4.74	122.85	148.25
198	125 x 125	5 x 5	8.0	0.315	28.09	1.888	35.79	796.89	4.72	127.50	154.46
199	132 x 132	-	3.2	0.126	12.73	0.856	16.22	444.82	5.24	67.40	77.92
200	132 x 132	-	3.6	0.142	14.25	0.958	18.16	494.19	5.22	74.88	86.87
201	132 x 132	-	4.0	0.157	15.75	1.059	20.07	542.22	5.20	82.16	95.64
202	132 x 132	-	4.5	0.177	17.61	1.183	22.43	600.42	5.17	90.97	106.37
203	132 x 132	-	4.8	0.189	18.70	1.257	23.83	634.36	5.16	96.11	112.68
204	132 x 132	-	5.4	0.213	20.88	1.403	26.59	700.07	5.13	106.07	125.01
205	132 x 132	-	5.6	0.220	21.59	1.451	27.50	721.33	5.12	109.29	129.04
206	132 x 132	-	6.0	0.236	23.01	1.546	29.31	762.93	5.10	115.60	136.97
207	132 x 132	-	6.35	0.250	24.24	1.629	30.87	798.30	5.08	120.96	143.77
208	132 x 132	-	7.1	0.280	26.82	1.803	34.17	870.95	5.05	131.96	157.91
209	132 x 132	-	7.6	0.299	28.52	1.916	36.33	917.03	5.02	138.94	167.02
210	132 x 132	-	8.0	0.315	29.85	2.006	38.03	952.56	5.00	144.33	174.12

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
211	140 x 140	-	3.2	0.126	13.54	0.910	17.25	533.7	5.56	76.25	88.01
212	140 x 140	-	3.6	0.142	15.16	1.018	19.31	593.4	5.54	84.77	98.17
213	140 x 140	-	4.0	0.157	16.76	1.126	21.35	651.6	5.52	93.08	108.15
214	140 x 140	-	4.5	0.177	18.74	1.259	23.87	722.2	5.50	103.17	120.37
215	140 x 140	-	4.8	0.189	19.91	1.338	25.36	763.5	5.49	109.07	127.56
216	140 x 140	-	5.4	0.213	22.23	1.494	28.32	843.5	5.46	120.50	141.64
217	140 x 140	-	5.6	0.220	23.00	1.545	29.30	869.5	5.45	124.21	146.24
218	140 x 140	-	6.0	0.236	24.52	1.647	31.23	920.4	5.43	131.48	155.32
219	140 x 140	-	6.35	0.250	25.83	1.736	32.91	963.7	5.41	137.67	163.11
220	140 x 140	-	7.1	0.280	28.61	1.922	36.44	1053.0	5.38	150.43	179.36
221	140 x 140	-	7.6	0.299	30.43	2.045	38.76	1109.9	5.35	158.55	189.84
222	140 x 140	-	8.0	0.315	31.86	2.141	40.59	1153.8	5.33	164.83	198.04
223	150 x 150	6 x 6	3.2	0.126	14.54	0.977	18.53	660.6	5.97	88.08	101.49
224	150 x 150	6 x 6	3.6	0.142	16.29	1.094	20.75	735.1	5.95	98.01	113.28
225	150 x 150	6 x 6	4.0	0.157	18.01	1.210	22.95	807.8	5.93	107.70	124.86
226	150 x 150	6 x 6	4.5	0.177	20.15	1.354	25.67	896.3	5.91	119.50	139.07
227	150 x 150	6 x 6	4.8	0.189	21.42	1.439	27.28	948.1	5.89	126.41	147.45
228	150 x 150	6 x 6	5.0	0.197	22.26	1.496	28.36	982.07	5.89	130.94	152.97
229	150 x 150	6 x 6	5.4	0.213	23.93	1.608	30.48	1048.82	5.87	139.84	163.88
230	150 x 150	6 x 6	5.6	0.220	24.76	1.664	31.54	1081.57	5.86	144.21	169.26
231	150 x 150	6 x 6	6.0	0.236	26.40	1.774	33.63	1145.84	5.84	152.78	179.87
232	150 x 150	6 x 6	6.35	0.250	27.83	1.870	35.45	1200.72	5.82	160.10	189.00
233	150 x 150	6 x 6	7.0	0.276	30.44	2.045	38.78	1299.36	5.79	173.25	205.57
234	150 x 150	6 x 6	7.1	0.280	30.84	2.072	39.28	1314.15	5.78	175.22	208.08
235	150 x 150	6 x 6	7.6	0.299	32.81	2.205	41.80	1386.66	5.76	184.89	220.43
236	150 x 150	6 x 6	8.0	0.315	34.37	2.310	43.79	1442.89	5.74	192.39	230.09
237	150 x 150	6 x 6	8.4	0.331	35.92	2.414	45.76	1497.57	5.72	199.68	239.57
238	150 x 150	6 x 6	8.7	0.343	37.07	2.491	47.22	1537.57	5.71	205.01	246.56
239	150 x 150	6 x 6	9.0	0.354	38.21	2.567	48.67	1576.71	5.69	210.23	253.44
240	150 x 150	6 x 6	9.3	0.366	39.34	2.643	50.11	1615.00	5.68	215.33	260.22
241	150 x 150	6 x 6	9.5	0.374	40.08	2.693	51.06	1640.05	5.67	218.67	264.69
242	160 x 160	-	3.2	0.126	15.55	1.045	19.81	806.1	6.38	100.77	115.93
243	160 x 160	-	3.6	0.142	17.42	1.170	22.19	897.6	6.36	112.20	129.46
244	160 x 160	-	4.0	0.157	19.27	1.295	24.55	987.1	6.34	123.39	142.78
245	160 x 160	-	4.5	0.177	21.56	1.449	27.47	1096.2	6.32	137.03	159.13

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
246	160 x 160	-	4.8	0.189	22.93	1.540	29.20	1160.2	6.30	145.03	168.78
247	160 x 160	-	5.4	0.213	25.62	1.722	32.64	1285.0	6.27	160.62	187.74
248	160 x 160	-	5.6	0.220	26.51	1.782	33.78	1325.6	6.26	165.70	193.95
249	160 x 160	-	6.0	0.236	28.28	1.901	36.03	1405.4	6.25	175.68	206.23
250	160 x 160	-	6.35	0.250	29.82	2.004	37.99	1473.7	6.23	184.21	216.80
251	160 x 160	-	7.1	0.280	33.07	2.222	42.12	1615.2	6.19	201.90	238.93
252	160 x 160	-	7.6	0.299	35.20	2.365	44.84	1706.0	6.17	213.25	253.29
253	160 x 160	-	8.0	0.315	36.89	2.479	46.99	1776.6	6.15	222.07	264.55
254	160 x 160	-	8.4	0.331	38.56	2.591	49.12	1845.3	6.13	230.67	275.61
255	160 x 160	-	8.7	0.343	39.80	2.674	50.70	1895.8	6.11	236.97	283.77
256	160 x 160	-	9.0	0.354	41.03	2.757	52.27	1945.2	6.10	243.15	291.82
257	160 x 160	-	9.3	0.366	42.26	2.839	53.83	1993.6	6.09	249.21	299.76
258	160 x 160	-	9.5	0.374	43.07	2.894	54.86	2025.4	6.08	253.17	304.99
259	160 x 160	-	10.0	0.394	45.07	3.029	57.42	2102.9	6.05	262.86	317.85
260	175 x 175	7 X 7	3.6	0.142	19.11	1.284	24.35	1183.8	6.97	135.29	155.76
261	175 x 175	7 X 7	4.0	0.157	21.15	1.421	26.95	1303.07	6.95	148.92	171.90
262	175 x 175	7 X 7	4.5	0.177	23.68	1.591	30.17	1448.77	6.93	165.57	191.74
263	175 x 175	7 X 7	4.8	0.189	25.19	1.692	32.08	1534.42	6.92	175.36	203.48
264	175 x 175	7 X 7	5.0	0.197	26.18	1.759	33.36	1590.79	6.91	181.80	211.23
265	175 x 175	7 X 7	5.4	0.213	28.17	1.893	35.88	1701.77	6.89	194.49	226.56
266	175 x 175	7 X 7	5.6	0.220	29.15	1.959	37.14	1756.40	6.88	200.73	234.14
267	175 x 175	7 X 7	6.0	0.236	31.11	2.091	39.63	1863.93	6.86	213.02	249.14
268	175 x 175	7 X 7	6.35	0.250	32.81	2.205	41.80	1956.14	6.84	223.56	262.07
269	175 x 175	7 X 7	7.1	0.280	36.41	2.447	46.38	2147.92	6.81	245.48	289.20
270	175 x 175	7 X 7	7.6	0.299	38.78	2.606	49.40	2271.41	6.78	259.59	306.86
271	175 x 175	7 X 7	8.0	0.315	40.65	2.732	51.79	2367.73	6.76	270.60	320.73
272	175 x 175	7 X 7	8.4	0.331	42.51	2.857	54.16	2461.87	6.74	281.36	334.38
273	175 x 175	7 X 7	8.7	0.343	43.90	2.950	55.92	2531.05	6.73	289.26	344.47
274	175 x 175	7 X 7	9.0	0.354	45.27	3.042	57.67	2599.02	6.71	297.03	354.44
275	175 x 175	7 X 7	9.3	0.366	46.64	3.134	59.41	2665.79	6.70	304.66	364.29
276	175 x 175	7 X 7	9.5	0.374	47.54	3.195	60.56	2709.64	6.69	309.67	370.79
277	175 x 175	7 X 7	10.0	0.394	49.78	3.345	63.42	2816.97	6.66	321.94	386.79
278	180 x 180		3.6	0.142	19.68	1.322	25.07	1291.2	7.18	143.47	165.07
279	180 x 180		4.0	0.157	21.78	1.464	27.75	1421.69	7.16	157.97	182.20
280	180 x 180		4.5	0.177	24.39	1.639	31.07	1581.20	7.13	175.69	203.29

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
281	180 x 180		4.8	0.189	25.94	1.743	33.04	1675.02	7.12	186.11	215.76
282	180 x 180		5.0	0.197	26.97	1.812	34.36	1736.79	7.11	192.98	224.01
283	180 x 180		5.4	0.213	29.01	1.950	36.96	1858.48	7.09	206.50	240.32
284	180 x 180		5.6	0.220	30.03	2.018	38.26	1918.40	7.08	213.16	248.38
285	180 x 180		6.0	0.236	32.05	2.154	40.83	2036.42	7.06	226.27	264.34
286	180 x 180		6.35	0.250	33.81	2.272	43.07	2137.69	7.05	237.52	278.11
287	180 x 180		7.1	0.280	37.53	2.522	47.80	2348.53	7.01	260.95	307.03
288	180 x 180		7.6	0.299	39.97	2.686	50.92	2484.45	6.99	276.05	325.85
289	180 x 180		8.0	0.315	41.91	2.816	53.39	2590.56	6.97	287.84	340.66
290	180 x 180		8.4	0.331	43.83	2.945	55.84	2694.34	6.95	299.37	355.23
291	180 x 180		8.7	0.343	45.26	3.042	57.66	2770.67	6.93	307.85	366.01
292	180 x 180		9.0	0.354	46.68	3.137	59.47	2845.72	6.92	316.19	376.67
293	180 x 180		9.3	0.366	48.10	3.232	61.27	2919.48	6.90	324.39	387.20
294	180 x 180		9.5	0.374	49.03	3.295	62.46	2967.96	6.89	329.77	394.15
295	180 x 180		10.0	0.394	51.35	3.451	65.42	3086.69	6.87	342.97	411.27
296	200 x 200	8 x 8	3.6	0.142	21.94	1.474	27.95	1785.8	7.99	178.58	205.00
297	200 x 200	8 x 8	4.0	0.157	24.29	1.632	30.95	1968.1	7.97	196.81	226.43
298	200 x 200	8 x 8	4.5	0.177	27.21	1.829	34.67	2191.5	7.95	219.15	252.85
299	200 x 200	8 x 8	4.8	0.189	28.95	1.946	36.88	2323.2	7.94	232.32	268.51
300	200 x 200	8 x 8	5.4	0.213	32.41	2.178	41.28	2581.3	7.91	258.13	299.37
301	200 x 200	8 x 8	5.6	0.220	33.55	2.254	42.74	2665.9	7.90	266.59	309.53
302	200 x 200	8 x 8	6.0	0.236	35.82	2.407	45.63	2832.6	7.88	283.26	329.65
303	200 x 200	8 x 8	6.35	0.250	37.80	2.540	48.15	2976.0	7.86	297.60	347.04
304	200 x 200	8 x 8	7.1	0.280	41.98	2.821	53.48	3275.6	7.83	327.56	383.64
305	200 x 200	8 x 8	7.6	0.299	44.74	3.007	57.00	3469.6	7.80	346.96	407.54
306	200 x 200	8 x 8	8.0	0.315	46.93	3.154	59.79	3621.4	7.78	362.14	426.36
307	200 x 200	8 x 8	8.4	0.331	49.11	3.300	62.56	3770.3	7.76	377.03	444.94
308	200 x 200	8 x 8	8.7	0.343	50.73	3.409	64.62	3880.1	7.75	388.01	458.70
309	200 x 200	8 x 8	9.0	0.354	52.34	3.517	66.67	3988.3	7.73	398.83	472.32
310	200 x 200	8 x 8	9.3	0.366	53.94	3.624	68.71	4094.9	7.72	409.49	485.80
311	200 x 200	8 x 8	9.5	0.374	55.00	3.696	70.06	4165.0	7.71	416.50	494.70
312	200 x 200	8 x 8	10.0	0.394	57.63	3.873	73.42	4337.3	7.69	433.73	516.69
313	220 x 220	-	3.6	0.142	24.20	1.626	30.83	2392.8	8.81	217.53	249.24
314	220 x 220	-	4.0	0.157	26.81	1.801	34.15	2639.1	8.79	239.91	275.46
315	220 x 220	-	4.5	0.177	30.04	2.019	38.27	2941.4	8.77	267.40	307.82

SQUARE HOLLOW SECTION (SHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	Size (Depth x Width)		Thickness		Weight		Area of Section	Moment of Inertia	Radius of Gyration	Elastic Modulus	Plastic Modulus
	mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3
316	220 x 220	-	4.8	0.189	31.97	2.148	40.72	3120.0	8.75	283.64	327.01
317	220 x 220	-	5.4	0.213	35.80	2.405	45.60	3470.8	8.72	315.53	364.91
318	220 x 220	-	5.6	0.220	37.06	2.491	47.22	3585.9	8.71	325.99	377.40
319	220 x 220	-	6.0	0.236	39.59	2.660	50.43	3813.19	8.70	346.65	402.16
320	220 x 220	-	6.35	0.250	41.78	2.808	53.23	4009.06	8.68	364.46	423.59
321	220 x 220	-	7.1	0.280	46.44	3.121	59.16	4419.29	8.64	401.75	468.78
322	220 x 220	-	7.6	0.299	49.52	3.327	63.08	4685.67	8.62	425.97	498.34
323	220 x 220	-	8.0	0.315	51.96	3.491	66.19	4894.72	8.60	444.97	521.67
324	220 x 220	-	8.4	0.331	54.38	3.654	69.28	5100.19	8.58	463.65	544.72
325	220 x 220	-	8.7	0.343	56.19	3.776	71.58	5251.96	8.57	477.45	561.83
326	220 x 220	-	9.0	0.354	57.99	3.897	73.87	5401.74	8.55	491.07	578.77
327	220 x 220	-	9.3	0.366	59.78	4.017	76.15	5549.54	8.54	504.50	595.56
328	220 x 220	-	9.5	0.374	60.96	4.097	77.66	5646.99	8.53	513.36	606.66
329	220 x 220	-	10.0	0.394	63.91	4.295	81.42	5886.79	8.50	535.16	634.11
330	250 x 250	10 x 10	3.6	0.142	27.59	1.854	35.15	3539.42	10.04	283.15	323.72
331	250 x 250	10 x 10	4.0	0.157	30.57	2.054	38.95	3907.19	10.02	312.58	358.00
332	250 x 250	10 x 10	4.5	0.177	34.28	2.303	43.67	4359.89	9.99	348.79	400.38
333	250 x 250	10 x 10	4.8	0.189	36.49	2.452	46.48	4627.79	9.98	370.22	425.57
334	250 x 250	10 x 10	5.4	0.213	40.88	2.747	52.08	5155.29	9.95	412.42	475.37
335	250 x 250	10 x 10	5.6	0.220	42.34	2.845	53.94	5328.67	9.94	426.29	491.80
336	250 x 250	10 x 10	6.0	0.236	45.24	3.040	57.63	5671.78	9.92	453.74	524.43
337	250 x 250	10 x 10	6.35	0.250	47.76	3.210	60.85	5968.03	9.90	477.44	552.71
338	250 x 250	10 x 10	7.1	0.280	53.13	3.570	67.68	6590.46	9.87	527.24	612.45
339	250 x 250	10 x 10	7.6	0.299	56.68	3.808	72.20	6996.10	9.84	559.69	651.65
340	250 x 250	10 x 10	8.0	0.315	59.49	3.998	75.79	7315.29	9.82	585.22	682.64
341	250 x 250	10 x 10	8.4	0.331	62.30	4.186	79.36	7629.78	9.81	610.38	713.30
342	250 x 250	10 x 10	8.7	0.343	64.39	4.326	82.02	7862.58	9.79	629.01	736.09
343	250 x 250	10 x 10	9.0	0.354	66.47	4.466	84.67	8092.76	9.78	647.42	758.70
344	250 x 250	10 x 10	9.3	0.366	68.54	4.606	87.31	8320.35	9.76	665.63	781.12
345	250 x 250	10 x 10	9.5	0.374	69.91	4.698	89.06	8470.63	9.75	677.65	795.97
346	250 x 250	10 x 10	10.0	0.394	73.33	4.928	93.42	8841.33	9.73	707.31	832.74

Note : 1.) "mm" Dimension for IS 4923 & EN 10219.
2.) "Inch" Dimension for ASTM A500

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
1	40 x 20	-	1.2	0.047	1.06	0.071	1.35	2.7	0.92	1.42	0.83	1.36	0.92	1.71	1.05
2	40 x 20	-	1.6	0.063	1.37	0.092	1.75	3.4	1.15	1.40	0.81	1.72	1.15	2.18	1.34
3	40 x 20	-	1.8	0.071	1.53	0.103	1.95	3.8	1.25	1.39	0.80	1.88	1.25	2.40	1.47
4	40 x 20	-	2.0	0.079	1.68	0.113	2.14	4.0	1.34	1.38	0.79	2.02	1.34	2.61	1.60
5	40 x 20	-	2.3	0.091	1.89	0.127	2.41	4.5	1.47	1.36	0.78	2.23	1.47	2.91	1.77
6	40 x 20	-	2.6	0.102	2.10	0.141	2.68	4.8	1.57	1.34	0.77	2.40	1.57	3.18	1.93
7	40 x 20	-	2.9	0.114	2.30	0.154	2.93	5.1	1.66	1.32	0.75	2.56	1.66	3.43	2.07
8	40 x 20	-	3.2	0.126	2.49	0.167	3.17	5.4	1.73	1.30	0.74	2.69	1.73	3.65	2.20
9	40 x 20	-	3.6	0.142	2.72	0.183	3.47	5.7	1.81	1.28	0.72	2.83	1.81	3.91	2.35
10	50 x 25	2 x 1	1.6	0.063	1.75	0.118	2.23	7.02	2.37	1.77	1.03	2.81	1.90	3.53	2.17
11	50 x 25	2 x 1	1.8	0.071	1.95	0.131	2.49	7.72	2.60	1.76	1.02	3.09	2.08	3.90	2.40
12	50 x 25	2 x 1	2.0	0.079	2.15	0.144	2.74	8.38	2.81	1.75	1.01	3.35	2.25	4.26	2.62
13	50 x 25	2 x 1	2.3	0.091	2.44	0.164	3.10	9.31	3.10	1.73	1.00	3.72	2.48	4.78	2.92
14	50 x 25	2 x 1	2.6	0.102	2.71	0.182	3.46	10.16	3.36	1.71	0.99	4.06	2.69	5.26	3.21
15	50 x 25	2 x 1	2.9	0.114	2.98	0.200	3.80	10.93	3.60	1.70	0.97	4.37	2.88	5.72	3.48
16	50 x 25	2 x 1	3.2	0.126	3.24	0.218	4.13	11.63	3.80	1.68	0.96	4.65	3.04	6.14	3.73
17	50 x 25	2 x 1	3.6	0.142	3.57	0.240	4.55	12.44	4.04	1.65	0.94	4.98	3.23	6.66	4.03
18	50 x 25	2 x 1	4.0	0.157	3.88	0.261	4.95	13.13	4.23	1.63	0.92	5.25	3.38	7.13	4.29
19	50 x 30	-	1.6	0.063	1.88	0.126	2.39	8.0	3.60	1.82	1.23	3.18	2.40	3.91	2.75
20	50 x 30	-	1.8	0.071	2.09	0.141	2.67	8.8	3.96	1.81	1.22	3.51	2.64	4.33	3.04
21	50 x 30	-	2.0	0.079	2.31	0.155	2.94	9.5	4.29	1.80	1.21	3.81	2.86	4.74	3.33
22	50 x 30	-	2.3	0.091	2.62	0.176	3.33	10.6	4.76	1.79	1.20	4.25	3.17	5.33	3.73
23	50 x 30	-	2.6	0.102	2.92	0.196	3.72	11.6	5.19	1.77	1.18	4.65	3.46	5.88	4.11
24	50 x 30	-	2.9	0.114	3.21	0.216	4.09	12.5	5.58	1.75	1.17	5.02	3.72	6.40	4.47
25	50 x 30	-	3.2	0.126	3.49	0.235	4.45	13.4	5.93	1.73	1.15	5.35	3.95	6.89	4.80
26	50 x 30	-	3.6	0.142	3.85	0.259	4.91	14.4	6.34	1.71	1.14	5.75	4.23	7.50	5.21
27	50 x 30	-	4.0	0.157	4.20	0.282	5.35	15.2	6.69	1.69	1.12	6.10	4.46	8.05	5.58
28	50 x 30	-	4.5	0.177	4.61	0.310	5.87	16.2	7.05	1.66	1.10	6.46	4.70	8.66	5.99
29	60 x 40	-	1.8	0.071	2.66	0.179	3.39	16.85	9.01	2.23	1.63	5.62	4.50	6.81	5.15
30	60 x 40	-	2.0	0.079	2.93	0.197	3.74	18.41	9.83	2.22	1.62	6.14	4.92	7.47	5.65
31	60 x 40	-	2.3	0.091	3.34	0.224	4.25	20.65	11.001	2.20	1.61	6.88	5.50	8.43	6.38
32	60 x 40	-	2.6	0.102	3.73	0.251	4.76	22.76	2.09	2.19	1.59	7.59	6.05	9.36	7.07
33	60 x 40	-	2.9	0.114	4.12	0.277	5.25	24.74	13.11	2.17	1.58	8.25	6.56	10.24	7.73
34	60 x 40	-	3.2	0.126	4.50	0.302	5.73	26.60	14.07	2.16	1.57	8.87	7.03	11.09	8.36
35	60 x 40	-	3.6	0.142	4.98	0.335	6.35	28.90	15.23	2.13	1.55	9.63	7.62	12.16	9.15
36	60 x 40	-	4.0	0.157	5.45	0.366	6.95	30.98	16.28	2.11	1.53	10.33	8.14	13.16	9.89
37	60 x 40	-	4.5	0.177	6.02	0.404	7.67	33.30	17.43	2.08	1.51	11.10	8.72	14.32	10.75
38	60 x 40	-	4.8	0.189	6.35	0.426	8.08	34.55	18.05	2.07	1.49	11.52	9.02	14.97	11.22

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
39	70 × 30	-	1.8	0.071	2.66	0.179	3.39	20.34	5.39	2.45	1.26	5.81	3.59	7.36	4.06
40	70 × 30	-	2.0	0.079	2.93	0.197	3.74	22.22	5.86	2.44	1.25	6.35	3.91	8.08	4.45
41	70 × 30	-	2.3	0.091	3.34	0.224	4.25	24.91	6.53	2.42	1.24	7.12	4.35	9.12	5.00
42	70 × 30	-	2.6	0.102	3.73	0.251	4.76	27.44	7.15	2.40	1.23	7.84	4.77	10.11	5.53
43	70 × 30	-	2.9	0.114	4.12	0.277	5.25	29.81	7.72	2.38	1.21	8.52	5.14	11.07	6.04
44	70 × 30	-	3.2	0.126	4.50	0.302	5.73	32.03	8.24	2.37	1.20	9.15	5.49	11.98	6.51
45	70 × 30	-	3.6	0.142	4.98	0.335	6.35	34.76	8.87	2.34	1.18	9.93	5.91	13.12	7.11
46	70 × 30	-	4.0	0.157	5.45	0.366	6.95	37.22	9.42	2.31	1.16	10.64	6.28	14.19	7.66
47	70 × 30	-	4.5	0.177	6.02	0.404	7.67	39.95	10.01	2.28	1.14	11.41	6.67	15.43	8.29
48	70 × 30	-	4.8	0.189	6.35	0.426	8.08	41.40	10.31	2.26	1.13	11.83	6.87	16.12	8.63
49	75 × 25	3 X 1	1.8	0.071	2.66	2.659	3.39	21.82	3.81	2.54	1.06	5.82	3.05	7.57	3.44
50	75 × 25	3 X 1	2.0	0.079	2.93	2.933	3.74	23.83	4.14	2.53	1.05	6.36	3.31	8.31	3.77
51	75 × 25	3 X 1	2.3	0.091	3.34	3.338	4.25	26.70	4.59	2.51	1.04	7.12	3.67	9.37	4.23
52	75 × 25	3 X 1	2.6	0.102	3.73	3.733	4.76	29.39	5.00	2.49	1.03	7.84	4.00	10.39	4.67
53	75 × 25	3 X 1	2.9	0.114	4.12	4.119	5.25	31.91	5.38	2.47	1.01	8.51	4.30	11.37	5.08
54	75 × 25	3 X 1	3.2	0.126	4.50	4.495	5.73	34.26	5.72	2.45	1.00	9.14	4.57	12.30	5.47
55	75 × 25	3 X 1	3.6	0.142	4.98	4.983	6.35	37.13	6.12	2.42	0.98	9.90	4.89	13.47	5.95
56	75 × 25	3 X 1	4.0	0.157	5.45	5.454	6.95	39.72	6.46	2.39	0.96	10.59	5.17	14.56	6.39
57	75 × 25	3 X 1	4.5	0.177	6.02	6.019	7.67	42.55	6.81	2.36	0.94	11.35	5.45	15.82	6.89
58	75 × 25	3 X 1	4.8	0.189	6.35	6.346	8.08	44.05	6.99	2.33	0.93	11.75	5.59	16.51	7.15
59	70 x 50	-	2.0	0.079	3.56	0.239	4.54	31.5	18.76	2.63	2.03	8.99	7.50	10.80	8.58
60	70 x 50	-	2.3	0.091	4.06	0.273	5.17	35.5	21.09	2.62	2.02	10.13	8.44	12.23	9.71
61	70 x 50	-	2.6	0.102	4.55	0.306	5.80	39.3	23.32	2.60	2.01	11.22	9.33	13.62	10.81
62	70 x 50	-	2.9	0.114	5.03	0.338	6.41	42.9	25.42	2.59	1.99	12.25	10.17	14.96	11.86
63	70 x 50	-	3.2	0.126	5.50	0.370	7.01	46.3	27.42	2.57	1.98	13.24	10.97	16.25	12.88
64	70 x 50	-	3.6	0.142	6.11	0.411	7.79	50.6	29.91	2.55	1.96	14.47	11.97	17.90	14.18
65	70 x 50	-	4.0	0.157	6.71	0.451	8.55	54.7	32.22	2.53	1.94	15.62	12.89	19.47	15.41
66	70 x 50	-	4.5	0.177	7.43	0.499	9.47	59.3	34.85	2.50	1.92	16.94	13.94	21.33	16.85
67	70 x 50	-	4.8	0.189	7.85	0.528	10.00	61.8	36.29	2.49	1.90	17.67	14.52	22.38	17.67
68	70 x 50	-	5.4	0.213	8.67	0.582	11.04	66.5	38.90	2.45	1.88	18.99	15.56	24.35	19.20
69	70 x 50	-	5.6	0.220	8.93	0.600	11.38	67.9	39.68	2.44	1.87	19.40	15.87	24.97	19.68
70	80 × 40	-	2.0	0.079	3.56	0.239	4.54	37.35	12.72	2.87	1.67	9.34	6.36	11.61	7.17
71	80 × 40	-	2.3	0.091	4.06	0.273	5.17	42.08	14.27	2.85	1.66	10.52	7.14	13.15	8.11
72	80 × 40	-	2.6	0.102	4.55	0.306	5.80	46.58	15.73	2.84	1.65	11.64	7.87	14.63	9.01
73	80 × 40	-	2.9	0.114	5.03	0.338	6.41	50.86	17.11	2.82	1.63	12.72	8.56	16.07	9.88
74	80 × 40	-	3.2	0.126	5.50	0.370	7.01	54.94	18.41	2.80	1.62	13.73	9.21	17.46	10.71
75	80 × 40	-	3.6	0.142	6.11	0.411	7.79	60.04	20.02	2.78	1.60	15.01	10.01	19.23	11.77
76	80 × 40	-	4.0	0.157	6.71	0.451	8.55	64.78	21.48	2.75	1.59	16.20	10.74	20.91	12.77

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2
77	80 × 40	-	4.5	0.177	7.43	0.499	9.47
78	80 × 40	-	4.8	0.189	7.85	0.528	10.00
79	80 × 40	-	5.4	0.213	8.67	0.582	11.04
80	80 × 40	-	5.6	0.220	8.93	0.600	11.38
81	80 x 60	-	2.6	0.102	5.37	0.361	6.84
82	80 x 60	-	2.9	0.114	5.94	0.399	7.57
83	80 x 60	-	3.2	0.126	6.50	0.437	8.29
84	80 x 60	-	3.6	0.142	7.24	0.487	9.23
85	80 x 60	-	4.0	0.157	7.97	0.535	10.15
86	80 x 60	-	4.5	0.177	8.85	0.594	11.27
87	80 x 60	-	4.8	0.189	9.36	0.629	11.92
88	80 x 60	-	5.4	0.213	10.36	0.696	13.20
89	80 x 60	-	5.6	0.220	10.69	0.718	13.62
90	80 x 60	-	6.0	0.236	11.33	0.761	14.43
91	96 × 48	-	2.6	0.102	5.53	0.372	7.04
92	96 × 48	-	2.9	0.114	6.12	0.411	7.80
93	96 × 48	-	3.2	0.126	6.71	0.451	8.54
94	96 × 48	-	3.6	0.142	7.47	0.502	9.52
95	96 × 48	-	4.0	0.157	8.22	0.552	10.47
96	96 × 48	-	4.5	0.177	9.13	0.613	11.63
97	96 × 48	-	4.8	0.189	9.66	0.649	12.31
98	96 × 48	-	5.4	0.213	10.70	0.719	13.63
99	96 × 48	-	5.6	0.220	11.04	0.742	14.06
100	96 × 48	-	6.0	0.236	11.71	0.787	14.91
101	90 x 50	-	2.6	0.102	5.37	0.361	6.84
102	90 x 50	-	2.9	0.114	5.94	0.399	7.57
103	90 x 50	-	3.2	0.126	6.50	0.437	8.29
104	90 x 50	-	3.6	0.142	7.24	0.487	9.23
105	90 x 50	-	4.0	0.157	7.97	0.535	10.15
106	90 x 50	-	4.5	0.177	8.85	0.594	11.27
107	90 x 50	-	4.8	0.189	9.36	0.629	11.92
108	90 x 50	-	5.4	0.213	10.36	0.696	13.20
109	90 x 50	-	5.6	0.220	10.69	0.718	13.62
110	90 x 50	-	6.0	0.236	11.33	0.761	14.43
111	100 × 50	4 x 2	2.6	0.102	5.77	0.388	7.36
112	100 × 50	4 x 2	2.9	0.114	6.40	0.430	8.15
113	100 × 50	4 x 2	3.2	0.126	7.01	0.471	8.93
114	100 × 50	4 x 2	3.6	0.142	7.81	0.525	9.95

MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
70.21	23.14	2.72	1.56	17.55	11.57	22.89	13.94
73.21	24.03	2.71	1.55	18.30	12.02	24.01	14.60
78.63	25.62	2.67	1.52	19.66	12.81	26.11	15.82
80.27	26.09	2.66	1.51	20.07	13.05	26.77	16.20
62.2	39.90	3.02	2.42	15.54	13.30	18.66	15.33
68.1	43.67	3.00	2.40	17.03	14.56	20.54	16.87
73.8	47.27	2.98	2.39	18.46	15.76	22.37	18.36
81.1	51.83	2.96	2.37	20.27	17.28	24.73	20.28
87.9	56.11	2.94	2.35	21.98	18.70	26.99	22.12
95.9	61.09	2.92	2.33	23.97	20.36	29.68	24.31
100.4	63.88	2.90	2.31	25.10	21.29	31.23	25.56
108.7	69.03	2.87	2.29	27.18	23.01	34.17	27.94
111.3	70.62	2.86	2.28	27.83	23.54	35.10	28.70
116.2	73.63	2.84	2.26	29.06	24.54	36.90	30.15
82.95	28.19	3.43	2.00	17.28	11.74	21.55	13.30
90.93	30.79	3.41	1.99	18.94	12.83	23.73	14.63
98.60	33.28	3.40	1.97	20.54	13.87	25.85	15.91
108.34	36.40	3.37	1.96	22.57	15.17	28.58	17.56
117.53	39.32	3.35	1.94	24.49	16.38	31.20	19.14
128.28	42.68	3.32	1.92	26.73	17.78	34.33	21.01
134.34	44.55	3.30	1.90	27.99	18.56	36.13	22.07
145.59	47.97	3.27	1.88	30.33	19.99	39.55	24.09
149.09	49.02	3.26	1.87	31.06	20.43	40.64	24.73
155.72	50.99	3.23	1.85	32.44	21.25	42.74	25.96
72.6	29.16	3.26	2.07	16.14	11.67	19.93	13.27
79.6	31.87	3.24	2.05	17.69	12.75	21.95	14.60
86.3	34.44	3.23	2.04	19.17	13.78	23.90	15.88
94.7	37.68	3.20	2.02	21.05	15.07	26.41	17.52
102.7	40.70	3.18	2.00	22.82	16.28	28.82	19.09
112.0	44.19	3.15	1.98	24.89	17.68	31.69	20.95
117.2	46.13	3.14	1.97	26.05	18.45	33.34	22.01
126.9	49.69	3.10	1.94	28.21	19.88	36.47	24.02
129.9	50.78	3.09	1.93	28.88	20.31	37.46	24.66
135.6	52.83	3.07	1.91	30.14	21.13	39.38	25.88
94.32	32.09	3.58	2.09	18.86	12.83	23.48	14.51
103.47	35.09	3.56	2.08	20.69	14.03	25.87	15.96
112.28	37.95	3.55	2.06	22.46	15.18	28.20	17.37
123.50	41.56	3.52	2.04	24.70	16.63	31.20	19.19

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
115	100 × 50	4 x 2	4.0	0.157	8.59	0.577	10.95	134.12	44.95	3.50	2.03	26.82	17.98	34.10	20.93
116	100 × 50	4 x 2	4.5	0.177	9.55	0.642	12.17	146.59	48.87	3.47	2.00	29.32	19.55	37.55	23.00
117	100 × 50	4 x 2	4.8	0.189	10.11	0.680	12.88	153.64	51.06	3.45	1.99	30.73	20.42	39.54	24.18
118	100 × 50	4 x 2	5.4	0.213	11.21	0.753	14.28	166.80	55.09	3.42	1.96	33.36	22.04	43.34	26.43
119	100 × 50	4 x 2	5.6	0.220	11.57	0.777	14.74	170.91	56.33	3.41	1.96	34.18	22.53	44.55	27.14
120	100 × 50	4 x 2	6.0	0.236	12.27	0.825	15.63	178.73	58.67	3.38	1.94	35.75	23.47	46.89	28.52
121	100 x 60	-	2.6	0.102	6.18	0.415	7.88	106.7	48.48	3.68	2.48	21.33	16.16	26.01	18.31
122	100 x 60	-	2.9	0.114	6.85	0.460	8.73	117.1	53.13	3.66	2.47	23.43	17.71	28.69	20.18
123	100 x 60	-	3.2	0.126	7.51	0.505	9.57	127.3	57.61	3.65	2.45	25.46	19.20	31.30	22.00
124	100 x 60	-	3.6	0.142	8.37	0.563	10.67	140.2	63.30	3.63	2.44	28.05	21.10	34.67	24.34
125	100 x 60	-	4.0	0.157	9.22	0.620	11.75	152.6	68.68	3.60	2.42	30.51	22.89	37.94	26.60
126	100 x 60	-	4.5	0.177	10.26	0.689	13.07	167.1	74.98	3.58	2.40	33.43	24.99	41.85	29.30
127	100 x 60	-	4.8	0.189	10.87	0.730	13.84	175.4	78.54	3.56	2.38	35.08	26.18	44.11	30.86
128	100 x 60	-	5.4	0.213	12.06	0.810	15.36	191.0	85.18	3.53	2.35	38.20	28.39	48.45	33.84
129	100 x 60	-	5.6	0.220	12.45	0.836	15.86	195.9	87.25	3.51	2.35	39.18	29.08	49.84	34.79
130	100 x 60	-	6.0	0.236	13.21	0.888	16.83	205.3	91.20	3.49	2.33	41.05	30.40	52.53	36.63
131	100 x 60	-	6.35	0.250	13.87	0.932	17.67	213.0	94.43	3.47	2.31	42.60	31.48	54.80	38.18
132	100 x 80	-	2.6	0.102	7.00	0.470	8.92	131.3	93.32	3.84	3.24	26.27	23.33	31.08	26.71
133	100 x 80	-	2.9	0.114	7.76	0.522	9.89	144.5	102.61	3.82	3.22	28.90	25.65	34.32	29.49
134	100 x 80	-	3.2	0.126	8.51	0.572	10.85	157.3	111.59	3.81	3.21	31.46	27.90	37.49	32.20
135	100 x 80	-	3.6	0.142	9.50	0.639	12.11	173.7	123.13	3.79	3.19	34.74	30.78	41.62	35.73
136	100 x 80	-	4.0	0.157	10.48	0.704	13.35	189.5	134.16	3.77	3.17	37.89	33.54	45.62	39.15
137	100 x 80	-	4.5	0.177	11.67	0.784	14.87	208.2	147.26	3.74	3.15	41.64	36.81	50.44	43.27
138	100 x 80	-	4.8	0.189	12.37	0.832	15.76	219.0	154.75	3.73	3.13	43.79	38.69	53.25	45.67
139	100 x 80	-	5.4	0.213	13.75	0.924	17.52	239.4	168.94	3.70	3.11	47.87	42.23	58.67	50.28
140	100 x 80	-	5.6	0.220	14.21	0.955	18.10	245.9	173.44	3.69	3.10	49.17	43.36	60.41	51.77
141	100 x 80	-	6.0	0.236	15.10	1.014	19.23	258.4	182.09	3.67	3.08	51.67	45.52	63.81	54.66
142	100 x 80	-	6.35	0.250	15.86	1.066	20.21	268.8	189.29	3.65	3.06	53.76	47.32	66.70	57.11
143	100 x 80	-	7.1	0.280	17.46	1.173	22.24	289.6	203.60	3.61	3.03	57.92	50.90	72.57	62.10
144	120 x 80	-	2.9	0.114	8.67	0.583	11.05	223.4	119.85	4.50	3.29	37.24	29.96	44.79	33.96
145	120 x 80	-	3.2	0.126	9.52	0.640	12.13	243.5	130.48	4.48	3.28	40.59	32.62	48.98	37.12
146	120 x 80	-	3.6	0.142	10.63	0.715	13.55	269.5	144.16	4.46	3.26	44.92	36.04	54.44	41.23
147	120 x 80	-	4.0	0.157	11.73	0.788	14.95	294.6	157.29	4.44	3.24	49.09	39.32	59.76	45.23
148	120 x 80	-	4.5	0.177	13.08	0.879	16.67	324.6	172.94	4.41	3.22	54.09	43.23	66.21	50.07
149	120 x 80	-	4.8	0.189	13.88	0.933	17.68	341.9	181.93	4.40	3.21	56.98	45.48	69.98	52.89
150	120 x 80	-	5.4	0.213	15.45	1.038	19.68	374.9	199.04	4.36	3.18	62.49	49.76	77.27	58.34
151	120 x 80	-	5.6	0.220	15.96	1.073	20.34	385.5	204.49	4.35	3.17	64.25	51.12	79.63	60.10
152	120 x 80	-	6.0	0.236	16.98	1.141	21.63	406.0	215.02	4.33	3.15	67.67	53.75	84.25	63.54

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2
153	120 x 80	-	6.35	0.250	17.86	1.200	22.75
154	120 x 80	-	7.1	0.280	19.69	1.323	25.08
155	120 x 80	-	7.6	0.299	20.88	1.403	26.60
156	122 x 61	-	2.6	0.102	7.12	0.479	9.07
157	122 x 61	-	2.9	0.114	7.90	0.531	10.06
158	122 x 61	-	3.2	0.126	8.66	0.582	11.04
159	122 x 61	-	3.6	0.142	9.67	0.650	12.32
160	122 x 61	-	4.0	0.157	10.67	0.717	13.59
161	122 x 61	-	4.5	0.177	11.88	0.798	15.14
162	122 x 61	-	4.8	0.189	12.60	0.847	16.05
163	122 x 61	-	5.4	0.213	14.01	0.941	17.85
164	122 x 61	-	5.6	0.220	14.47	0.972	18.43
165	122 x 61	-	6.0	0.236	15.38	1.033	19.59
166	122 x 61	-	6.35	0.250	16.16	1.086	20.59
167	122 x 61	-	7.1	0.280	17.80	1.196	22.67
168	140 x 80	-	3.2	0.126	10.52	0.707	13.41
169	140 x 80	-	3.6	0.142	11.76	0.791	14.99
170	140 x 80	-	4.0	0.157	12.99	0.873	16.55
171	140 x 80	-	4.5	0.177	14.50	0.974	18.47
172	140 x 80	-	4.8	0.189	15.39	1.034	19.60
173	140 x 80	-	5.4	0.213	17.15	1.152	21.84
174	140 x 80	-	6.0	0.236	18.86	1.268	24.03
175	140 x 80	-	6.35	0.250	19.85	1.334	25.29
176	140 x 80	-	7.1	0.280	21.92	1.473	27.92
177	140 x 80	-	7.6	0.299	23.27	1.563	29.64
178	140 x 80	-	8.0	0.315	24.33	1.635	30.99
179	145 x 82	-	3.2	0.126	10.88	0.731	13.85
180	145 x 82	-	3.6	0.142	12.16	0.817	15.49
181	145 x 82	-	4.0	0.157	13.43	0.902	17.11
182	145 x 82	-	4.5	0.177	14.99	1.007	19.10
183	145 x 82	-	4.8	0.189	15.92	1.070	20.28
184	145 x 82	-	5.4	0.213	17.74	1.192	22.60
185	145 x 82	-	5.6	0.220	18.34	1.232	23.36
186	145 x 82	-	6.0	0.236	19.52	1.312	24.87
187	145 x 82	-	6.35	0.250	20.55	1.381	26.18
188	145 x 82	-	7.1	0.280	22.70	1.525	28.92
189	145 x 82	-	7.6	0.299	24.10	1.620	30.70
190	145 x 82	-	8.0	0.315	25.21	1.694	32.11

MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
423.2	223.82	4.31	3.14	70.54	55.96	88.17	66.47
457.9	241.46	4.27	3.10	76.32	60.36	96.24	72.46
479.4	252.30	4.25	3.08	79.91	63.07	101.35	76.24
175.74	60.09	4.40	2.57	28.81	19.70	35.62	22.05
193.40	65.95	4.38	2.56	31.70	21.62	39.34	24.32
210.54	71.60	4.37	2.55	34.51	23.48	42.98	26.55
232.59	78.82	4.34	2.53	38.13	25.84	47.71	29.42
253.74	85.69	4.32	2.51	41.60	28.09	52.30	32.21
278.91	93.78	4.29	2.49	45.72	30.75	57.84	35.55
293.36	98.38	4.28	2.48	48.09	32.25	61.07	37.49
320.80	107.02	4.24	2.45	52.59	35.09	67.28	41.22
329.51	109.74	4.23	2.44	54.02	35.98	69.29	42.41
346.32	114.94	4.20	2.42	56.77	37.69	73.20	44.74
360.34	119.25	4.18	2.41	59.07	39.10	76.51	46.70
388.28	127.69	4.14	2.37	63.65	41.87	83.26	50.67
354.0	149.36	5.14	3.34	50.58	37.34	61.75	42.03
392.4	165.19	5.12	3.32	56.06	41.30	68.71	46.73
429.6	180.41	5.10	3.30	61.37	45.10	75.51	51.31
474.2	198.62	5.07	3.28	67.75	49.65	83.78	56.86
500.1	209.11	5.05	3.27	71.45	52.28	88.62	60.11
549.9	229.15	5.02	3.24	78.55	57.29	98.03	66.40
596.9	247.95	4.98	3.21	85.28	61.99	107.08	72.42
623.2	258.35	4.96	3.20	89.03	64.59	112.19	75.82
676.4	279.31	4.92	3.16	96.64	69.83	122.74	82.81
709.8	292.28	4.89	3.14	101.39	73.07	129.47	87.25
735.1	302.10	4.87	3.12	105.02	75.53	134.68	90.67
392.20	162.88	5.32	3.43	54.10	39.73	66.05	44.64
434.93	180.22	5.30	3.41	59.99	43.96	73.52	49.65
476.32	196.93	5.28	3.39	65.70	48.03	80.82	54.53
526.19	216.94	5.25	3.37	72.58	52.91	89.72	60.46
555.12	228.49	5.23	3.36	76.57	55.73	94.93	63.93
610.80	250.58	5.20	3.33	84.25	61.12	105.06	70.66
628.71	257.65	5.19	3.32	86.72	62.84	108.36	72.84
663.60	271.35	5.17	3.30	91.53	66.18	114.83	77.12
693.09	282.88	5.15	3.29	95.60	68.99	120.35	80.76
753.09	306.14	5.10	3.25	103.88	74.67	131.77	88.27
790.72	320.58	5.07	3.23	109.06	78.19	139.06	93.05
819.47	331.54	5.05	3.21	113.03	80.86	144.72	96.75

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
191	150 x 75	6 x 3	3.2	0.126	10.78	0.724	13.73	402.0	137.43	5.41	3.16	53.59	36.65	66.26	41.02
192	150 x 75	6 x 3	3.6	0.142	12.05	0.810	15.35	445.7	151.93	5.39	3.15	59.42	40.52	73.75	45.60
193	150 x 75	6 x 3	4.0	0.157	13.30	0.894	16.95	488.0	165.88	5.37	3.13	65.06	44.23	81.06	50.06
194	150 x 75	6 x 3	4.5	0.177	14.85	0.998	18.92	538.9	182.53	5.34	3.11	71.85	48.67	89.97	55.47
195	150 x 75	6 x 3	4.8	0.189	15.77	1.059	20.08	568.4	192.12	5.32	3.09	75.79	51.23	95.18	58.63
196	150 x 75	6 x 3	5.4	0.213	17.57	1.181	22.38	625.2	210.41	5.29	3.07	83.36	56.11	105.32	64.76
197	150 x 75	6 x 3	5.6	0.220	18.16	1.220	23.14	643.5	216.25	5.27	3.06	85.80	57.67	108.61	66.75
198	150 x 75	6 x 3	6.0	0.236	19.34	1.299	24.63	679.0	227.54	5.25	3.04	90.53	60.68	115.07	70.63
199	150 x 75	6 x 3	6.35	0.250	20.35	1.367	25.92	709.0	237.02	5.23	3.02	94.54	63.20	120.59	73.94
200	150 x 75	6 x 3	7.1	0.280	22.48	1.510	28.63	770.0	256.06	5.19	2.99	102.67	68.28	131.98	80.74
201	150 x 75	6 x 3	7.6	0.299	23.86	1.604	30.40	808.2	267.83	5.16	2.97	107.76	71.42	139.26	85.05
202	150 x 75	6 x 3	8.0	0.315	24.95	1.677	31.79	837.3	276.73	5.13	2.95	111.64	73.79	144.89	88.38
203	150 x 100	6 x 4	3.2	0.126	12.03	0.808	15.33	488.2	262.26	5.64	4.14	65.09	52.45	78.00	59.18
204	150 x 100	6 x 4	3.6	0.142	13.46	0.905	17.15	542.1	290.85	5.62	4.12	72.28	58.17	86.92	65.91
205	150 x 100	6 x 4	4.0	0.157	14.87	0.999	18.95	594.6	318.55	5.60	4.10	79.28	63.71	95.66	72.50
206	150 x 100	6 x 4	4.5	0.177	16.62	1.117	21.17	658.0	351.95	5.58	4.08	87.74	70.39	106.33	80.53
207	150 x 100	6 x 4	4.8	0.189	17.65	1.186	22.48	695.0	371.34	5.56	4.06	92.66	74.27	112.60	85.24
208	150 x 100	6 x 4	5.4	0.213	19.69	1.323	25.08	766.4	408.69	5.53	4.04	102.19	81.74	124.84	94.42
209	150 x 100	6 x 4	5.6	0.220	20.36	1.368	25.94	789.5	420.72	5.52	4.03	105.27	84.14	128.83	97.42
210	150 x 100	6 x 4	6.0	0.236	21.69	1.458	27.63	834.6	444.17	5.50	4.01	111.28	88.83	136.67	103.29
211	150 x 100	6 x 4	6.3	0.248	22.68	1.524	28.89	867.5	461.22	5.48	4.00	115.67	92.24	142.44	107.61
212	150 x 100	6 x 4	7.1	0.280	25.26	1.698	32.18	951.4	504.49	5.44	3.96	126.85	100.90	157.35	118.75
213	150 x 100	6 x 4	7.6	0.299	26.85	1.804	34.20	1001.0	529.94	5.41	3.94	133.47	105.99	166.31	125.43
214	150 x 100	6 x 4	8.0	0.315	28.09	1.888	35.79	1039.2	549.44	5.39	3.92	138.56	109.89	173.29	130.62
215	160 x 80	-	3.2	0.126	11.53	0.775	14.69	491.4	168.25	5.78	3.38	61.42	42.06	75.79	46.95
216	160 x 80	-	3.6	0.142	12.90	0.867	16.43	545.3	186.21	5.76	3.37	68.17	46.55	84.42	52.23
217	160 x 80	-	4.0	0.157	14.25	0.957	18.15	597.7	203.54	5.74	3.35	74.71	50.88	92.86	57.39
218	160 x 80		4.5	0.177	15.91	1.069	20.27	660.9	224.30	5.71	3.33	82.61	56.08	103.15	63.66
219	160 x 80	-	4.8	0.189	16.90	1.135	21.52	697.6	236.29	5.69	3.31	87.20	59.07	109.18	67.33
220	160 x 80	-	5.4	0.213	18.84	1.266	24.00	768.5	259.25	5.66	3.29	96.06	64.81	120.95	74.45
221	160 x 80	-	5.6	0.220	19.48	1.309	24.82	791.4	266.61	5.65	3.28	98.92	66.65	124.78	76.77
222	160 x 80	-	6.0	0.236	20.75	1.394	26.43	835.9	280.87	5.62	3.26	104.49	70.22	132.31	81.30
223	160 x 80	-	6.35	0.250	21.84	1.468	27.83	873.7	292.88	5.60	3.24	109.21	73.22	138.75	85.17
224	160 x 80	-	7.1	0.280	24.15	1.623	30.76	950.8	317.16	5.56	3.21	118.85	79.29	152.08	93.16
225	160 x 80	-	7.6	0.299	25.65	1.724	32.68	999.3	332.27	5.53	3.19	124.92	83.07	160.63	98.25
226	160 x 80	-	8.0	0.315	26.84	1.803	34.19	1036.6	343.75	5.51	3.17	129.57	85.94	167.27	102.19
227	172 x 92	-	3.2	0.126	12.73	0.856	16.22	642.42	245.11	6.29	3.89	74.70	53.29	91.32	59.40
228	172 x 92	-	3.6	0.142	14.25	0.958	18.16	713.91	271.80	6.27	3.87	83.01	59.09	101.81	66.17

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2
229	172 × 92	-	4.0	0.157	15.75	1.059	20.07
230	172 × 92	-	4.5	0.177	17.61	1.183	22.43
231	172 × 92	-	4.8	0.189	18.70	1.257	23.83
232	172 × 92	-	5.4	0.213	20.88	1.403	26.59
233	172 × 92	-	5.6	0.220	21.59	1.451	27.50
234	172 × 92	-	6.0	0.236	23.01	1.546	29.31
235	172 × 92	-	6.35	0.250	24.24	1.629	30.87
236	172 × 92	-	7.1	0.280	26.82	1.803	34.17
237	172 × 92	-	7.6	0.299	28.52	1.916	36.33
238	172 × 92	-	8.0	0.315	29.85	2.006	38.03
239	180 x 100	-	3.2	0.126	13.54	0.910	17.25
240	180 x 100	-	3.6	0.142	15.16	1.018	19.31
241	180 x 100	-	4.0	0.157	16.76	1.126	21.35
242	180 x 100	-	4.5	0.177	18.74	1.259	23.87
243	180 x 100	-	4.8	0.189	19.91	1.338	25.36
244	180 x 100	-	5.4	0.213	22.23	1.494	28.32
245	180 x 100	-	5.6	0.220	23.00	1.545	29.30
246	180 x 100	-	6.0	0.236	24.52	1.647	31.23
247	180 x 100	-	6.3	0.248	25.64	1.723	32.67
248	180 x 100	-	7.1	0.280	28.61	1.922	36.44
249	180 x 100	-	7.6	0.299	30.43	2.045	38.76
250	180 x 100	-	8.0	0.315	31.86	2.141	40.59
251	180 x 100	-	9.5	0.374	37.10	2.493	47.26
252	200 × 100	8 x 4	3.6	0.142	16.29	1.094	20.75
253	200 × 100	8 x 4	4.0	0.157	18.01	1.210	22.95
254	200 × 100	8 x 4	4.5	0.177	20.15	1.354	25.67
255	200 × 100	8 x 4	4.8	0.189	21.42	1.439	27.28
256	200 × 100	8 x 4	5.0	0.197	22.26	1.496	28.36
257	200 × 100	8 x 4	5.4	0.213	23.93	1.608	30.48
258	200 × 100	8 x 4	5.6	0.220	24.76	1.664	31.54
259	200 × 100	8 x 4	6.0	0.236	26.40	1.774	33.63
260	200 × 100	8 x 4	6.3	0.248	27.62	1.856	35.19
261	200 × 100	8 x 4	7.1	0.280	30.84	2.072	39.28
262	200 × 100	8 x 4	7.6	0.299	32.81	2.205	41.80
263	200 × 100	8 x 4	8.0	0.315	34.37	2.310	43.79
264	200 x 120	-	3.2	0.126	15.55	1.045	19.81
265	200 x 120	-	3.6	0.142	17.42	1.170	22.19
266	200 x 120	-	4.0	0.157	19.27	1.295	24.55

MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
783.50	297.65	6.25	3.85	91.10	64.71	112.10	72.79
867.85	328.81	6.22	3.83	100.91	71.48	124.68	80.87
917.06	346.89	6.20	3.82	106.64	75.41	132.07	85.61
1012.39	381.72	6.17	3.79	117.72	82.98	146.54	94.85
1043.26	392.94	6.16	3.78	121.31	85.42	151.26	97.87
1103.63	414.80	6.14	3.76	128.33	90.17	160.55	103.79
1154.99	433.29	6.12	3.75	134.30	94.19	168.52	108.85
1260.49	471.01	6.07	3.71	146.57	102.39	185.10	119.36
1327.41	494.72	6.04	3.69	154.35	107.55	195.78	126.10
1379.02	512.88	6.02	3.67	160.35	111.50	204.10	131.35
758.1	307.25	6.63	4.22	84.23	61.45	102.43	68.47
843.1	341.06	6.61	4.20	93.68	68.21	114.27	76.32
926.0	373.88	6.59	4.18	102.89	74.78	125.88	84.02
1026.7	413.55	6.56	4.16	114.07	82.71	140.11	93.42
1085.5	436.65	6.54	4.15	120.61	87.33	148.49	98.95
1199.8	481.26	6.51	4.12	133.31	96.25	164.89	109.75
1236.9	495.67	6.50	4.11	137.43	99.13	170.25	113.28
1309.5	523.80	6.48	4.10	145.50	104.76	180.82	120.21
1362.7	544.31	6.46	4.08	151.41	108.86	188.61	125.32
1499.0	596.58	6.41	4.05	166.56	119.32	208.82	138.53
1580.3	627.49	6.39	4.02	175.59	125.50	221.03	146.49
1643.2	651.27	6.36	4.01	182.58	130.25	230.58	152.70
1862.1	733.10	6.28	3.94	206.90	146.62	264.57	174.70
1091.42	374.53	7.25	4.25	109.14	74.91	134.29	83.26
1199.64	410.76	7.23	4.23	119.96	82.15	148.03	91.70
1331.36	454.63	7.20	4.21	133.14	90.93	164.88	102.01
1408.50	480.19	7.18	4.20	140.85	96.04	174.81	108.09
1459.16	496.92	7.17	4.19	145.92	99.38	181.36	112.09
1558.61	529.63	7.15	4.17	155.86	105.93	194.29	119.97
1607.41	545.63	7.14	4.16	160.74	109.13	200.67	123.85
1703.17	576.89	7.12	4.14	170.32	115.38	213.25	131.49
1773.40	599.71	7.10	4.13	177.34	119.94	222.54	137.13
1954.07	657.98	7.05	4.09	195.41	131.60	246.68	151.73
2062.17	692.53	7.02	4.07	206.22	138.51	261.31	160.54
2146.00	719.15	7.00	4.05	214.60	143.83	272.76	167.42
1104.6	505.53	7.47	5.05	110.46	84.26	132.91	93.83
1230.3	562.27	7.45	5.03	123.03	93.71	148.43	104.73
1353.3	617.64	7.43	5.02	135.33	102.94	163.71	115.44

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S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2
267	200 x 120	-	4.5	0.177	21.56	1.449	27.47
268	200 x 120	-	4.8	0.189	22.93	1.540	29.20
269	200 x 120	-	5.4	0.213	25.62	1.722	32.64
270	200 x 120	-	5.6	0.220	26.51	1.782	33.78
271	200 x 120	-	6.0	0.236	28.28	1.901	36.03
272	200 x 120	-	6.3	0.248	29.60	1.989	37.71
273	200 x 120	-	7.1	0.280	33.07	2.222	42.12
274	200 x 120	-	7.6	0.299	35.20	2.365	44.84
275	200 x 120	-	8.0	0.315	36.89	2.479	46.99
276	200 x 150	8 X 6	3.6	0.157	16.29	1.094	20.75
277	200 x 150	8 X 6	4.0	0.157	18.01	1.210	22.95
278	200 x 150	8 X 6	4.5	0.177	20.15	1.354	25.67
279	200 x 150	8 X 6	4.8	0.189	21.42	1.439	27.28
280	200 x 150	8 X 6	5.0	0.197	22.26	1.496	28.36
281	200 x 150	8 X 6	5.4	0.213	23.93	1.608	30.48
282	200 x 150	8 X 6	5.6	0.220	24.76	1.664	31.54
283	200 x 150	8 X 6	6.0	0.236	26.40	1.774	33.63
284	200 x 150	8 X 6	6.3	0.248	27.62	1.856	35.19
285	200 x 150	8 X 6	7.1	0.280	30.84	2.072	39.28
286	200 x 150	8 X 6	7.6	0.299	32.81	2.205	41.80
287	200 x 150	8 X 6	8.0	0.315	34.37	2.310	43.79
288	200 x 150	8 X 6	8.4	0.331	35.92	2.414	45.76
289	200 x 150	8 X 6	8.7	0.343	37.07	2.491	47.22
290	200 x 150	8 X 6	9.0	0.354	38.21	2.567	48.67
291	200 x 150	8 X 6	9.3	0.366	39.34	2.643	50.11
292	200 x 150	8 X 6	9.5	0.374	40.08	2.693	51.06
293	200 x 150	8 X 6	10.0	0.394	41.93	2.818	53.42
294	220 x 140	-	3.2	0.126	17.56	1.180	22.37
295	220 x 140	-	3.6	0.142	19.68	1.322	25.07
296	220 x 140	-	4.0	0.157	21.78	1.464	27.75
297	220 x 140	-	4.5	0.177	24.39	1.639	31.07
298	220 x 140	-	4.8	0.189	25.94	1.743	33.04
299	220 x 140	-	5.0	0.197	26.97	1.812	34.36
300	220 x 140	-	5.4	0.213	29.01	1.950	36.96
301	220 x 140	-	5.6	0.220	30.03	2.018	38.26
302	220 x 140	-	6.0	0.236	32.05	2.154	40.83
303	220 x 140	-	6.3	0.248	33.56	2.255	42.75
304	220 x 140	-	7.1	0.280	37.53	2.522	47.80

MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
1503.4	684.92	7.40	4.99	150.34	114.15	182.47	128.58
1591.4	724.29	7.38	4.98	159.14	120.71	193.55	136.33
1763.2	800.77	7.35	4.95	176.32	133.46	215.31	151.53
1819.1	825.61	7.34	4.94	181.91	137.60	222.44	156.50
1929.1	874.31	7.32	4.93	192.91	145.72	236.53	166.33
2009.9	909.99	7.30	4.91	200.99	151.67	246.94	173.58
2218.4	1001.66	7.26	4.88	221.84	166.94	274.07	192.43
2343.6	1056.42	7.23	4.85	234.36	176.07	290.56	203.86
2441.1	1098.85	7.21	4.84	244.11	183.14	303.48	212.81
1091.42	374.53	7.25	4.25	109.14	74.91	134.29	83.26
1199.64	410.76	7.23	4.23	119.96	82.15	148.03	91.70
1331.36	454.63	7.20	4.21	133.14	90.93	164.88	102.01
1408.50	480.19	7.18	4.20	140.85	96.04	174.81	108.09
1459.16	496.92	7.17	4.19	145.92	99.38	181.36	112.09
1558.61	529.63	7.15	4.17	155.86	105.93	194.29	119.97
1607.41	545.63	7.14	4.16	160.74	109.13	200.67	123.85
1703.17	576.89	7.12	4.14	170.32	115.38	213.25	131.49
1773.40	599.71	7.10	4.13	177.34	119.94	222.54	137.13
1954.07	657.98	7.05	4.09	195.41	131.60	246.68	151.73
2062.17	692.53	7.02	4.07	206.22	138.51	261.31	160.54
2146.00	719.15	7.00	4.05	214.60	143.83	272.76	167.42
2227.50	744.89	6.98	4.03	222.75	148.98	283.99	174.15
2287.11	763.61	6.96	4.02	228.71	152.72	292.27	179.10
2345.44	781.86	6.94	4.01	234.54	156.37	300.42	183.97
2402.48	799.62	6.92	3.99	240.25	159.92	308.45	188.75
2439.81	811.19	6.91	3.99	243.98	162.24	313.73	191.90
2530.65	839.22	6.88	3.96	253.07	167.84	326.69	199.59
1541.08	773.32	8.30	5.88	140.10	110.47	167.24	123.03
1718.43	861.39	8.28	5.86	156.22	123.06	186.92	137.46
1892.47	947.61	8.26	5.84	172.04	135.37	206.34	151.67
2105.40	1052.81	8.23	5.82	191.40	150.40	230.24	169.15
2230.71	1114.57	8.22	5.81	202.79	159.22	244.37	179.47
2313.24	1155.18	8.21	5.80	210.29	165.03	253.72	186.30
2475.87	1235.07	8.18	5.78	225.08	176.44	272.20	199.79
2555.98	1274.35	8.17	5.77	232.36	182.05	281.35	206.45
2713.80	1351.60	8.15	5.75	246.71	193.09	299.44	219.64
2830.09	1408.39	8.14	5.74	257.28	201.20	312.84	229.39
3131.54	1555.11	8.09	5.70	284.69	222.16	347.85	254.84

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S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
305	220 × 140	-	7.6	0.299	39.97	2.686	50.92	3313.62	1643.36	8.07	5.68	301.24	234.77	369.20	270.34
306	220 × 140	-	8.0	0.315	41.91	2.816	53.39	3455.83	1712.08	8.05	5.66	314.17	244.58	385.99	282.52
307	220 × 140	-	8.4	0.331	43.83	2.945	55.84	3594.97	1779.15	8.02	5.64	326.82	254.16	402.53	294.49
308	220 × 140	-	8.7	0.343	45.26	3.042	57.66	3697.34	1828.39	8.01	5.63	336.12	261.20	414.76	303.35
309	220 × 140	-	9.0	0.354	46.68	3.137	59.47	3798.01	1876.70	7.99	5.62	345.27	268.10	426.85	312.09
310	220 × 140	-	9.3	0.366	48.10	3.232	61.27	3897.00	1924.12	7.98	5.60	354.27	274.87	438.80	320.72
311	220 × 140	-	9.5	0.374	49.03	3.295	62.46	3962.06	1955.23	7.96	5.59	360.19	279.32	446.68	326.41
312	220 × 140	-	10.0	0.394	51.35	3.451	65.42	4121.46	2031.27	7.94	5.57	374.68	290.18	466.11	340.43
313	240 × 120	-	3.6	0.142	19.68	1.322	25.07	1916.62	659.86	8.74	5.13	159.72	109.98	195.69	121.49
314	240 × 120	-	4.0	0.157	21.78	1.464	27.75	2110.63	725.33	8.72	5.11	175.89	120.89	216.01	134.00
315	240 × 120	-	4.5	0.177	24.39	1.639	31.07	2347.94	805.05	8.69	5.09	195.66	134.17	241.01	149.37
316	240 × 120	-	4.8	0.189	25.94	1.743	33.04	2487.57	851.76	8.68	5.08	207.30	141.96	255.80	158.45
317	240 × 120	-	5.0	0.197	26.97	1.812	34.36	2579.52	882.44	8.67	5.07	214.96	147.07	265.57	164.44
318	240 × 120	-	5.4	0.213	29.01	1.950	36.96	2760.70	942.71	8.64	5.05	230.06	157.12	284.91	176.28
319	240 × 120	-	5.6	0.220	30.03	2.018	38.26	2849.94	972.30	8.63	5.04	237.49	162.05	294.47	182.13
320	240 × 120	-	6.0	0.236	32.05	2.154	40.83	3025.71	1030.40	8.61	5.02	252.14	171.73	313.39	193.69
321	240 × 120	-	6.3	0.248	33.56	2.255	42.75	3155.19	1073.05	8.59	5.01	262.93	178.84	327.40	202.23
322	240 × 120	-	7.1	0.280	37.53	2.522	47.80	3490.75	1182.90	8.55	4.97	290.90	197.15	364.00	224.49
323	240 × 120	-	7.6	0.299	39.97	2.686	50.92	3693.34	1248.74	8.52	4.95	307.78	208.12	386.32	238.03
324	240 × 120	-	8.0	0.315	41.91	2.816	53.39	3851.50	1299.89	8.49	4.93	320.96	216.65	403.86	248.65
325	240 × 120	-	8.4	0.331	43.83	2.945	55.84	4006.22	1349.70	8.47	4.92	333.85	224.95	421.14	259.09
326	240 × 120	-	8.7	0.343	45.26	3.042	57.66	4120.01	1386.18	8.45	4.90	343.33	231.03	433.91	266.79
327	240 × 120	-	9.0	0.354	46.68	3.137	59.47	4231.89	1421.93	8.44	4.89	352.66	236.99	446.54	274.40
328	240 × 120	-	9.3	0.366	48.10	3.232	61.27	4341.86	1456.94	8.42	4.88	361.82	242.82	459.01	281.90
329	240 × 120	-	9.5	0.374	49.03	3.295	62.46	4414.12	1479.88	8.41	4.87	367.84	246.65	467.25	286.85
330	250 x 150	10 x 6	3.6	0.142	21.94	1.474	27.95	2446.5	1120.93	9.36	6.33	195.72	149.46	235.01	165.98
331	250 x 150	10 x 6	4.0	0.157	24.29	1.632	30.95	2696.8	1234.21	9.33	6.32	215.74	164.56	259.60	183.26
332	250 x 150	10 x 6	4.5	0.177	27.21	1.829	34.67	3003.7	1372.74	9.31	6.29	240.29	183.03	289.91	204.55
333	250 x 150	10 x 6	4.8	0.189	28.95	1.946	36.88	3184.7	1454.24	9.29	6.28	254.77	193.90	307.87	217.15
334	250 x 150	10 x 6	5.0	0.197	30.11	2.023	38.36	3304.0	1507.90	9.28	6.27	264.32	201.05	319.75	225.47
335	250 x 150	10 x 6	5.4	0.213	32.41	2.178	41.28	3539.6	1613.63	9.26	6.25	283.17	215.15	343.28	241.96
336	250 x 150	10 x 6	5.6	0.220	33.55	2.254	42.74	3655.9	1665.70	9.25	6.24	292.47	222.09	354.94	250.12
337	250 x 150	10 x 6	6.0	0.236	35.82	2.407	45.63	3885.3	1768.28	9.23	6.23	310.83	235.77	378.03	266.27
338	250 x 150	10 x 6	6.3	0.248	37.51	2.521	47.79	4054.7	1843.84	9.21	6.21	324.38	245.85	395.15	278.24
339	250 x 150	10 x 6	7.1	0.280	41.98	2.821	53.48	4495.3	2039.68	9.17	6.18	359.63	271.96	439.99	309.54
340	250 x 150	10 x 6	7.6	0.299	44.74	3.007	57.00	4762.6	2157.95	9.14	6.15	381.01	287.73	467.42	328.65
341	250 x 150	10 x 6	8.0	0.315	46.93	3.154	59.79	4971.9	2250.31	9.12	6.13	397.75	300.04	489.04	343.69
342	250 x 150	10 x 6	8.4	0.331	49.11	3.300	62.56	5177.2	2340.68	9.10	6.12	414.18	312.09	510.36	358.52

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
343	250 x 150	10 x 6	8.7	0.343	50.73	3.409	64.62	5328.7	2407.17	9.08	6.10	426.29	320.96	526.16	369.49
344	250 x 150	10 x 6	9.0	0.354	52.34	3.517	66.67	5477.9	2472.57	9.06	6.09	438.23	329.68	541.80	380.34
345	250 x 150	10 x 6	9.3	0.366	53.94	3.624	68.71	5625.0	2536.87	9.05	6.08	450.00	338.25	557.27	391.08
346	250 x 150	10 x 6	9.5	0.374	55.00	3.696	70.06	5721.8	2579.14	9.04	6.07	457.74	343.89	567.49	398.16
347	250 x 150	10 x 6	10.0	0.394	57.63	3.873	73.42	5959.7	2682.73	9.01	6.04	476.77	357.70	592.74	415.64
348	250 x 200	10 x 8	3.6	0.142	24.76	1.664	31.55	2992.96	2133.01	9.74	8.22	239.44	213.30	279.36	240.35
349	250 x 200	10 x 8	4.0	0.157	27.43	1.843	34.95	3301.98	2352.28	9.72	8.20	264.16	235.23	308.80	265.63
350	250 x 200	10 x 8	4.5	0.177	30.75	2.066	39.17	3681.78	2621.52	9.70	8.18	294.54	262.15	345.15	296.84
351	250 x 200	10 x 8	4.8	0.189	32.72	2.199	41.68	3906.22	2780.49	9.68	8.17	312.50	278.05	366.72	315.36
352	250 x 200	10 x 8	5.0	0.197	34.03	2.287	43.36	4054.43	2885.41	9.67	8.16	324.35	288.54	381.00	327.61
353	250 x 200	10 x 8	5.4	0.213	36.64	2.462	46.68	4347.46	3092.70	9.65	8.14	347.80	309.27	409.33	351.92
354	250 x 200	10 x 8	5.6	0.220	37.94	2.550	48.34	4492.28	3195.08	9.64	8.13	359.38	319.51	423.37	363.96
355	250 x 200	10 x 8	6.0	0.236	40.53	2.724	51.63	4778.56	3397.33	9.62	8.11	382.28	339.73	451.23	387.85
356	250 x 200	10 x 8	6.3	0.248	42.46	2.853	54.09	4990.34	3546.84	9.61	8.10	399.23	354.68	471.92	405.58
357	250 x 200	10 x 8	7.1	0.280	47.56	3.196	60.58	5542.90	3936.42	9.57	8.06	443.43	393.64	526.22	452.12
358	250 x 200	10 x 8	7.6	0.299	50.71	3.408	64.60	5879.33	4173.27	9.54	8.04	470.35	417.33	559.53	480.65
359	250 x 200	10 x 8	8.0	0.315	53.21	3.576	67.79	6143.58	4359.12	9.52	8.02	491.49	435.91	585.84	503.16
360	250 x 200	10 x 8	8.4	0.331	55.70	3.743	70.96	6403.50	4541.75	9.50	8.00	512.28	454.17	611.83	525.41
361	250 x 200	10 x 8	8.7	0.343	57.56	3.868	73.32	6595.62	4676.63	9.48	7.99	527.65	467.66	631.12	541.92
362	250 x 200	10 x 8	9.0	0.354	59.40	3.992	75.67	6785.33	4809.73	9.47	7.97	542.83	480.97	650.25	558.27
363	250 x 200	10 x 8	9.3	0.366	61.24	4.115	78.01	6972.66	4941.06	9.45	7.96	557.81	494.11	669.19	574.47
364	250 x 200	10 x 8	9.5	0.374	62.46	4.197	79.56	7096.21	5027.63	9.44	7.95	567.70	502.76	681.73	585.19
365	250 x 200	10 x 8	10.0	0.394	65.48	4.400	83.42	7400.50	5240.65	9.42	7.93	592.04	524.07	712.74	611.69
366	260 x 180	-	3.6	0.142	24.20	1.626	30.83	3043.59	1739.40	9.94	7.51	234.12	193.27	276.86	215.87
367	260 x 180	-	4.0	0.157	26.81	1.801	34.15	3357.42	1917.39	9.92	7.49	258.26	213.04	305.99	238.52
368	260 x 180	-	4.5	0.177	30.04	2.019	38.27	3743.00	2135.72	9.89	7.47	287.92	237.30	341.96	266.47
369	260 x 180	-	4.8	0.189	31.97	2.148	40.72	3970.80	2264.51	9.87	7.46	305.45	251.61	363.30	283.04
370	260 x 180	-	5.0	0.197	33.25	2.234	42.36	4121.19	2349.46	9.86	7.45	317.01	261.05	377.43	294.01
371	260 x 180	-	5.4	0.213	35.80	2.405	45.60	4418.46	2517.17	9.84	7.43	339.88	279.69	405.44	315.74
372	260 x 180	-	5.6	0.220	37.06	2.491	47.22	4565.35	2599.94	9.83	7.42	351.18	288.88	419.33	326.51
373	260 x 180	-	6.0	0.236	39.59	2.660	50.43	4855.63	2763.33	9.81	7.40	373.51	307.04	446.86	347.86
374	260 x 180	-	6.3	0.248	41.47	2.787	52.83	5070.31	2884.00	9.80	7.39	390.02	320.44	467.31	363.70
375	260 x 180	-	7.1	0.280	46.44	3.121	59.16	5630.17	3198.00	9.76	7.35	433.09	355.33	520.96	405.23
376	260 x 180	-	7.6	0.299	49.52	3.327	63.08	5970.83	3388.58	9.73	7.33	459.29	376.51	553.85	430.67
377	260 x 180	-	8.0	0.315	51.96	3.491	66.19	6238.29	3537.93	9.71	7.31	479.87	393.10	579.81	450.74
378	260 x 180	-	8.4	0.331	54.38	3.654	69.28	6501.27	3684.54	9.69	7.29	500.10	409.39	605.46	470.55
379	260 x 180	-	8.7	0.343	56.19	3.776	71.58	6695.58	3792.71	9.67	7.28	515.04	421.41	624.49	485.24
380	260 x 180	-	9.0	0.354	57.99	3.897	73.87	6887.40	3899.36	9.66	7.27	529.80	433.26	643.35	499.79

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION	MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
								X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2	CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
381	260 x 180	-	9.3	0.366	59.78	4.017	76.15	7076.73	4004.51	9.64	7.25	544.36	444.95	662.03	514.20
382	260 x 180	-	9.5	0.374	60.96	4.097	77.66	7201.58	4073.77	9.63	7.24	553.97	452.64	674.39	523.73
383	260 x 180	-	10.0	0.394	63.91	4.295	81.42	7508.93	4244.02	9.60	7.22	577.61	471.56	704.95	547.27
384	300 x 100	12 x 4	3.6	0.142	21.94	1.474	27.95	3013.03	541.88	10.38	4.40	200.87	108.38	256.03	117.96
385	300 x 100	12 x 4	4.0	0.157	24.29	1.632	30.95	3320.30	595.19	10.36	4.39	221.35	119.04	282.77	130.10
386	300 x 100	12 x 4	4.5	0.177	27.21	1.829	34.67	3696.82	659.98	10.33	4.36	246.45	132.00	315.72	144.99
387	300 x 100	12 x 4	4.8	0.189	28.95	1.946	36.88	3918.72	697.88	10.31	4.35	261.25	139.58	335.23	153.78
388	300 x 100	12 x 4	5.0	0.197	30.11	2.023	38.36	4064.98	722.75	10.29	4.34	271.00	144.55	348.14	159.59
389	300 x 100	12 x 4	5.4	0.213	32.41	2.178	41.28	4353.53	771.52	10.27	4.32	290.24	154.30	373.70	171.05
390	300 x 100	12 x 4	5.6	0.220	33.55	2.254	42.74	4495.82	795.44	10.26	4.31	299.72	159.09	386.35	176.71
391	300 x 100	12 x 4	6.0	0.236	35.82	2.407	45.63	4776.46	842.33	10.23	4.30	318.43	168.47	411.41	187.89
392	300 x 100	12 x 4	6.3	0.248	37.51	2.521	47.79	4983.50	876.68	10.21	4.28	332.23	175.34	429.98	196.16
393	300 x 100	12 x 4	7.1	0.280	41.98	2.821	53.48	5521.30	964.95	10.16	4.25	368.09	192.99	478.60	217.68
394	300 x 100	12 x 4	7.6	0.299	44.74	3.007	57.00	5846.94	1017.69	10.13	4.23	389.80	203.54	508.31	230.76
395	300 x 100	12 x 4	8.0	0.315	46.93	3.154	59.79	6101.69	1058.56	10.10	4.21	406.78	211.71	531.71	241.02
396	300 x 150	12 x 6	3.6	0.142	24.76	1.664	31.55	3803.74	1313.87	10.98	6.45	253.58	175.18	309.38	192.33
397	300 x 150	12 x 6	4.0	0.157	27.43	1.843	34.95	4196.52	1447.42	10.96	6.44	279.77	192.99	341.97	212.46
398	300 x 150	12 x 6	4.5	0.177	30.75	2.066	39.17	4679.25	1610.98	10.93	6.41	311.95	214.80	382.20	237.28
399	300 x 150	12 x 6	4.8	0.189	32.72	2.199	41.68	4964.53	1707.33	10.91	6.40	330.97	227.64	406.08	251.99
400	300 x 150	12 x 6	5.0	0.197	34.03	2.287	43.36	5152.90	1770.82	10.90	6.39	343.53	236.11	421.89	261.72
401	300 x 150	12 x 6	5.4	0.213	36.64	2.462	46.68	5525.32	1896.04	10.88	6.37	368.35	252.80	453.24	281.00
402	300 x 150	12 x 6	5.6	0.220	37.94	2.550	48.34	5709.37	1957.77	10.87	6.36	380.62	261.04	468.78	290.55
403	300 x 150	12 x 6	6.0	0.236	40.53	2.724	51.63	6073.18	2079.50	10.85	6.35	404.88	277.27	499.61	309.47
404	300 x 150	12 x 6	6.3	0.248	42.46	2.853	54.09	6342.30	2169.28	10.83	6.33	422.82	289.24	522.50	323.50
405	300 x 150	12 x 6	7.1	0.280	47.56	3.196	60.58	7044.38	2402.44	10.78	6.30	469.63	320.32	582.58	360.27
406	300 x 150	12 x 6	7.6	0.299	50.71	3.408	64.60	7471.76	2543.59	10.75	6.27	498.12	339.15	619.42	382.76
407	300 x 150	12 x 6	8.0	0.315	53.21	3.576	67.79	7807.40	2654.01	10.73	6.26	520.49	353.87	648.51	400.49
408	300 x 150	12 x 6	8.4	0.331	55.70	3.743	70.96	8137.50	2762.24	10.71	6.24	542.50	368.30	677.25	417.99
409	300 x 150	12 x 6	8.7	0.343	57.56	3.868	73.32	8381.45	2841.98	10.69	6.23	558.76	378.93	698.58	430.96
410	300 x 150	12 x 6	9.0	0.354	59.40	3.992	75.67	8622.32	2920.50	10.67	6.21	574.82	389.40	719.72	443.79
411	300 x 150	12 x 6	9.3	0.366	61.24	4.115	78.01	8860.11	2997.81	10.66	6.20	590.67	399.71	740.67	456.50
412	300 x 150	12 x 6	9.5	0.374	62.46	4.197	79.56	9016.94	3048.69	10.65	6.19	601.13	406.49	754.52	464.90
413	300 x 150	12 x 6	10.0	0.394	65.48	4.400	83.42	9403.09	3173.56	10.62	6.17	626.87	423.14	788.79	485.64
414	300 x 200	12 x 8	3.6	0.142	27.59	1.854	35.15	4594.46	2480.20	11.43	8.40	306.30	248.02	362.73	275.70
415	300 x 200	12 x 8	4.0	0.157	30.57	2.054	38.95	5072.73	2736.49	11.41	8.38	338.18	273.65	401.17	304.83
416	300 x 200	12 x 8	4.5	0.177	34.28	2.303	43.67	5661.68	3051.57	11.39	8.36	377.45	305.16	448.69	340.83
417	300 x 200	12 x 8	4.8	0.189	36.49	2.452	46.48	6010.34	3237.82	11.37	8.35	400.69	323.78	476.93	362.20
418	300 x 200	12 x 8	5.0	0.197	37.96	2.551	48.36	6240.82	3360.82	11.36	8.34	416.05	336.08	495.64	376.36

RECTANGULAR HOLLOW SECTION (RHS) IS 4923:2017/EN 10219/ ASTM A500/ISO 10799

S. No.	SIZE (DEPTH X WIDTH)		THICKNESS		MASS PER UNIT LENGTH		AREA OF SECTION
	MM	INCH	MM	INCH	KG/M	LB/FT	CM^2
419	300 x 200	12 x 8	5.4	0.213	40.88	2.747	52.08
420	300 x 200	12 x 8	5.6	0.220	42.34	2.845	53.94
421	300 x 200	12 x 8	6.0	0.236	45.24	3.040	57.63
422	300 x 200	12 x 8	6.3	0.248	47.40	3.185	60.39
423	300 x 200	12 x 8	7.1	0.280	53.13	3.570	67.68
424	300 x 200	12 x 8	7.6	0.299	56.68	3.808	72.20
425	300 x 200	12 x 8	8.0	0.315	59.49	3.998	75.79
426	300 x 200	12 x 8	8.4	0.331	62.30	4.186	79.36
427	300 x 200	12 x 8	8.7	0.343	64.39	4.326	82.02
428	300 x 200	12 x 8	9.0	0.354	66.47	4.466	84.67
429	300 x 200	12 x 8	9.3	0.366	68.54	4.606	87.31
430	300 x 200	12 x 8	9.5	0.374	69.91	4.698	89.06
431	300 x 200	12 x 8	10.0	0.394	73.33	4.928	93.42

Note :

1. "mm" Dimension for IS 4923 & EN 10219.
2. "Inch" Dimension for ASTM A500

MOMENT OF INERTIA ABOUT		RADIUS OF GYRATION ABOUT		ELASTIC MODULUS ABOUT		PLASTIC MODULUS ABOUT	
X-X	Y-Y	X-X	Y-Y	X-X	Y-Y	X-X	Y-Y
CM^4	CM^4	CM	CM	CM^3	CM^3	CM^3	CM^3
6697.10	3604.07	11.34	8.32	446.47	360.41	532.78	404.46
6922.91	3724.31	11.33	8.31	461.53	372.43	551.21	418.39
7369.90	3962.05	11.31	8.29	491.33	396.21	587.81	446.05
7701.10	4137.98	11.29	8.28	513.41	413.80	615.01	466.60
8567.46	4597.21	11.25	8.24	571.16	459.72	686.56	520.60
9096.59	4876.98	11.22	8.22	606.44	487.70	730.53	553.76
9513.11	5096.82	11.20	8.20	634.21	509.68	765.31	579.96
9923.63	5313.16	11.18	8.18	661.58	531.32	799.72	605.88
10227.61	5473.13	11.17	8.17	681.84	547.31	825.30	625.13
10528.25	5631.16	11.15	8.16	701.88	563.12	850.67	644.22
10825.56	5787.25	11.14	8.14	721.70	578.72	875.84	663.15
11021.93	5890.24	11.12	8.13	734.80	589.02	892.51	675.68
11506.42	6143.99	11.10	8.11	767.09	614.40	933.79	706.69

DIMENSION & WEIGHT TOLERANCE

SPECIFICATION	OUTSIDE DIMENSIONS	WALL THICKNESS
IS 4923:2017	± 1 % with a minimum of ± 0.5 mm	"± 7.5 % Excluded Weld The height of the internal weld fin shall not exceed 60% of the wall thickness "
ASTM A500	Under or Equal to 65mm = ±0.5 mm "Over 65 to 90 mm = ±0.6 mm Over 90 to 140 mm = ±0.8 mm Over 140 mm = ±1% of large Dimension "	±10% of Specified Wall Thickness
EN 10219 / ISO 10799	±1% with a minimum of ±0.5 mm For <100mm ±0.8% For ≤ 200 mm ±0.6% For > 200 mm	T ≤ 5 mm ± 10% T > 5 mm ± 0.5 mm

DIMENSION & WEIGHT TOLERANCE

WEIGHT	LENGTH
"- 8% & +10% of nominal weight. ± 7% on lots of 10 tonnes."	"Exact Length: ± 6 mm Random Length as per Customer agreed"
"- 8% & +10% of nominal weight. ± 7% on lots of 10 tonnes."	"Length ≤ 6.5 mtr: -6/+13 mm Length > 6.5 mtr: -6/+19 mm"
±6% of Nominal Weight	"Random length 4 to16 mtr Approximate Length: -0/+50 mm Exact Length: <6 mtr +5/-0 mm ≥ 6 ≤10 mtr: +15/-0 mm >10 mtr: +5/-0 mm +1 mm/mtr"

CHEMICAL & MECHANICAL PROPERTIES IS4923:2017/ EN 10219/ASTM A500

SPECIFICATION	GRADE	CHEMICAL COMPOSITION(%)					MECHANICAL PROPERTIES(MPA)		
							YIELD STRENGTH	TENSILE STRENGTH	% EL
	INCH	C MAX	MN MAX	P MAX	S MAX	CE	MIN	MIN	MIN
IS 4923:2017	YST 210	0.120	0.600	0.040	0.040	-	210	330	20
	YST 240	0.160	1.200	0.040	0.040	0.450	240	410	15
	YST 310	0.250	1.300	0.040	0.040	0.450	310	450	10
	YST 355	0.250	1.500	0.040	0.040	0.450	355	490	10
ASTM A500	A	0.300	1.400	0.045	0.045	-	270	310	25
	B	0.300	1.400	0.045	0.045	-	315	400	23
	C	0.270	1.400	0.045	0.045	-	345	425	21
	D	0.300	1.400	0.045	0.045	-	250	400	23

SPEC.	GRADE	C MAX	MN MAX	P MAX	S MAX	SI MAX	V MAX	NB MAX	TI MAX	CEIIW	YIELD STRENGTH	TENSILE STRENGTH		% EL
											MIN	MIN	MAX	MAX
EN 10219	S235JRH	0.170	1.400	0.040	0.040	-	-	-	-	0.350	235	360	510	24
												Impact Test at Temp 20°C = 27J Min		
	S275J0H	0.200	1.500	0.035	0.035	-	-	-	-	0.400	275	410	560	20
												Impact Test at Temp 0°C = 27J Min		
	S275J2H	0.200	1.500	0.030	0.030		-	-	-	0.400	275	410	560	20
												Impact Test at Temp -20°C = 27J Min		
	S355J0H	0.220	1.600	0.035	0.035	0.550	-	-	-	0.450	355	470	630	20
												Impact Test at Temp 0°C = 27J Min		
	S355J2H	0.220	1.600	0.030	0.030	0.550	-	-	-	0.450	355	470	630	20
												Impact Test at Temp -20°C = 27J Min		
	S355K2H	0.220	1.600	0.030	0.030	0.550	-	-	-	0.450	355	470	630	20
												Impact Test at Temp -20°C = 40J Min		
	S275MH	0.130	1.500	0.035	0.030	0.500	0.080	0.050	0.050	0.340	275	360	510	24
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -20°C = 40J Min		
	S275MLH	0.130	1.500	0.030	0.025	0.500	0.080	0.050	0.050	0.340	275	360	510	24
		N- 0.020, Ni- 0.30,Mo-0.20, Al - 0.020										Impact Test at Temp -50°C = 27J Min		
	S355MH	0.140	1.500	0.035	0.030	0.500	0.100	0.050	0.050	0.390	355	450	610	22
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -20°C = 40J Min		
	S355MLH	0.140	1.500	0.030	0.025	0.500	0.100	0.050	0.050	0.390	355	450	610	22
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -50OC = 27J Min		
	S420MH	0.160	1.700	0.035	0.030	0.500	0.120	0.050	0.050	0.430	420	500	660	19
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -20°C = 40J Min		
	S420MLH	0.160	1.700	0.030	0.025	0.500	0.120	0.050	0.050	0.430	420	500	660	19
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -50°C = 27J Min		
	S460MH	0.160	1.700	0.035	0.030	0.600	0.120	0.050	0.050	0.460	460	530	720	17
		N- 0.025, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -20°C = 40J Min		
	S460MLH	0.160	1.700	0.030	0.025	0.500	0.120	0.050	0.050	0.460	460	530	720	17
		N- 0.025, Ni- 0.30, Mo-0.20, Al - 0.020										Impact Test at Temp -50°C = 27J Min		

ASTM/ASME-B-36.10 M DIMENSION TABLE

SIZE			SCHEDULE WALL THICKNESS (MM)/ WEIGHT (KG/MTR)								
NB		OD (MM)		SCH 5	SCH 10	SCH 20	SCH 30	STD	SCH 40	SCH 60	SCH 80
INCH	MM										
½	15	21.3	THICK.	1.65	2.11	-	-	2.77	2.77	-	-
			KG/MTR	0.80	1.00	-	-	1.27	1.27	-	-
¾	20	26.7	THICK.	1.65	2.11	-	-	2.87	2.87	-	-
			KG/MTR	1.03	1.28	-	-	1.69	1.69	-	-
1	25	33.4	THICK.	1.65	2.77	-	-	3.38	3.38	-	-
			KG/MTR	1.29	2.09	-	-	2.50	2.50	-	-
1¼	32	42.2	THICK.	1.65	2.77	-	-	3.56	3.56	-	-
			KG/MTR	1.65	2.69	-	-	3.39	3.39	-	-
1½	40	48.3	THICK.	1.65	2.77	-	-	3.68	3.68	-	-
			KG/MTR	1.90	3.11	-	-	4.05	4.05	-	-
2	50	60.3	THICK.	1.65	2.77	-	-	3.91	3.91	-	-
			KG/MTR	2.39	3.93	-	-	5.44	5.44	-	-
2½	65	73.0	THICK.	2.11	3.05	-	-	5.16	5.16	-	-
			KG/MTR	3.69	5.26	-	-	8.63	8.63	-	-
3	80	88.9	THICK.	2.11	3.05	-	-	5.49	5.49	-	-
			KG/MTR	4.52	6.46	-	-	11.29	11.29	-	-
3½	90	101.6	THICK.	2.11	3.05	-	-	5.74	5.74	-	-
			KG/MTR	5.18	7.41	-	-	13.57	13.57	-	-
4	100	114.3	THICK.	2.11	3.05	-	-	6.02	6.02	-	-
			KG/MTR	5.84	8.37	-	-	16.07	16.07	-	-
5	125	141.3	THICK.	2.77	3.40	-	-	6.55	6.55	-	-
			KG/MTR	9.46	11.56	-	-	21.77	21.77	-	-
6	150	168.3	THICK.	2.77	3.40	-	-	7.11	7.11	-	-
			KG/MTR	11.31	13.83	-	-	28.26	28.26	-	-
8	200	219.1	THICK.	-	-	6.35	7.04	8.18	8.18	10.31	12.70
			KG/MTR	-	-	33.31	36.31	42.55	42.55	53.08	64.64
10	250	273.0	THICK.	3.40	4.19	6.35	7.80	9.27	9.27	12.70	-
			KG/MTR	22.61	27.78	41.75	51.01	60.29	60.29	81.52	-
12	300	323.8	THICK.	-	-	6.35	8.38	9.52	10.31	-	-
			KG/MTR	-	-	49.71	65.18	73.78	79.70	-	-

TECHNICAL DATA SHEET FOR SPECIFICATION ASTM A53/A795

DIMENSIONS, WEIGHTS (MASSES) PER UNIT LENGTH, AND TEST PRESSURES FOR PLAIN-END PIPE					
NOMINAL BORE		SPECIFIED OUTSIDE DIAMETER		SPECIFIED WALL THICKNESS	
INCH	MM	INCH	MM	INCH	MM
1/2	15	0.840	21.3	0.109	2.77
3/4	20	0.050	26.7	0.113	2.87
1	25	1.315	33.4	0.133	3.38
1 1/4	32	1.660	42.2	0.140	3.56
1 1/2	40	1.900	48.3	0.145	3.68
2	50	2.375	60.3	0.154	3.91
2 1/2	65	2.875	73.0	0.203	5.16
3	80	3.500	88.9	0.125	3.18
				0.156	3.96
				0.188	4.78
				0.216	5.49
-	90	4.000	101.6	0.125	3.18
				0.156	3.96
				0.188	4.78
				0.226	5.74
				0.250	6.35
4	100	4.500	114.3	0.125	3.18
				0.156	3.96
				0.188	4.78
				0.219	5.56
				0.237	6.02
				0.250	6.35
				0.281	7.14
5	125	5.563	141.3	0.156	3.96
				0.188	4.78
				0.219	5.56
				0.258	6.55
				0.281	7.14
				0.312	7.92
6	150	6.625	168.3	0.188	4.78
				0.219	5.56
				0.250	6.35
				0.280	7.11

DIMENSIONS, WEIGHTS (MASSES) PER UNIT LENGTH, AND TEST PRESSURES FOR PLAIN-END PIPE							
NOMINAL WEIGHT (MASS)		WEIGHT CLASS	SCHEDULE NO.	TEST PRESSURE			
				GRADE A		GRADE B	
LB/FT	KG/M			PSI	KPA	PSI	KPA
0.85	1.27	STD	40	700	4800	700	4800
1.13	1.69	STD	40	700	4800	700	4800
1.68	2.50	STD	40	700	4800	700	4800
2.27	3.39	STD	40	1200	8300	1300	9000
2.72	4.05	STD	40	1200	8300	1300	9000
3.66	5.44	STD	40	2300	15 900	2500	17 200
5.80	8.63	STD	40	2500	17 200	2500	17 200
4.51	6.72			1290	8900	1500	1000
5.58	8.29			1600	11 000	1870	12 900
6.66	9.92			1930	13 330	2260	15 600
7.58	11.29	STD	40	2220	15 300	2500	17 200
5.18	7.72			1120	7700	1310	19 000
6.41	9.53			1400	6700	1640	11 300
7.66	11.41			1690	11 700	1970	13 600
9.12	13.57	STD	40	2030	14 000	2370	16 300
10.02	14.92			2250	15 500	2500	17 200
5.85	8.71			1000	6900	1170	8100
7.24	10.78			1250	8600	1460	10 100
8.67	12.91			1500	10 300	1750	12 100
10.02	14.91			1750	12 100	2040	14 100
10.80	16.07	STD	40	1900	13 100	2210	15 200
11.36	16.90			2000	13 800	2330	16 100
12.67	18.87			2250	15 100	2620	18 100
9.02	13.41			1010	7000	1180	8100
10.80	16.09			1220	8400	1420	9800
12.51	18.61			1420	9800	1650	11 400
14.63	21.77	STD	40	1670	11 500	1950	13 400
15.87	23.62			1820	12 500	2120	14 600
17.51	26.05			2020	13 900	2360	16 300
12.94	19.27			1020	7000	1190	8200
15.00	22.31			1190	8200	1390	9600
17.04	25.36			1360	9400	1580	10 900
18.99	28.26	STD	40	1520	10 500	1780	12 300

TECHNICAL DATA SHEET FOR SPECIFICATION ASTM A53/A795

DIMENSIONS, WEIGHTS (MASSES) PER UNIT LENGTH, AND TEST PRESSURES FOR PLAIN-END PIPE

NOMINAL BORE		SPECIFIED OUTSIDE DIAMETER		SPECIFIED WALL THICKNESS		NOMINAL WEIGHT (MASS)		WEIGHT CLASS	SCHEDULE NO.	TEST PRESSURE			
										GRADE A		GRADE B	
INCH	MM	INCH	MM	INCH	MM	LB/FT	KG/M			PSI	KPA	PSI	KPA
6	150	6.625	168.3	0.312	7.92	21.06	31.32			1700	11 700	1980	13 700
				0.344	8.74	23.10	34.39			1870	12 900	2180	15 000
				0.375	9.52	25.05	37.28			2040	14 100	2380	16 400
8	200	8.625	219.1	0.188	4.78	16.96	25.26			780	5400	920	6300
				0.203	5.16	18.28	27.22			850	5900	1000	6900
				0.219	5.56	19.68	29.28			910	6300	1070	7400
				0.250	6.35	22.38	33.31		20	1040	7200	1220	8400
				0.277	7.04	24.72	36.31		30	1160	7800	1350	9300
				0.312	7.92	27.73	41.24			1300	9000	1520	10 500
				0.322	8.18	28.58	42.55	STD	40	1340	9200	1570	10 800
				0.344	8.74	30.45	45.34			1440	9900	1680	11 600
				0.375	9.52	33.07	49.20			1570	10 800	1830	12 600
				0.406	10.31	35.67	53.08		60	1700	11 700	2000	13 800
				0.438	11.13	38.33	57.08			1830	12 600	2130	14 700
				0.500	12.70	43.43	64.64	XS	80	2090	14 400	2430	16 800
10	250	10.750	273.0	0.188	4.78	21.23	31.62			630	4300	730	5000
				0.203	5.16	22.89	34.08			680	4700	800	5500
				0.219	5.56	24.65	36.67			730	5000	860	5900
				0.250	6.35	28.06	41.75		20	840	5800	980	6800
				0.279	7.09	31.23	46.49			930	6400	1090	7500
				0.307	7.80	34.27	51.01		30	1030	7100	1200	8300
				0.344	8.74	38.27	56.96			1150	7900	1340	9200
				0.365	9.27	40.52	60.29	STD	40	1220	8400	1430	9900
				0.438	11.13	48.28	71.87			1470	10 100	1710	11 800
				0.500	12.70	54.79	81.52	XS	60	1670	11500	1950	13 400
12	300	12.750	323.8	0.203	5.16	27.23	40.55			570	3900	670	4600
				0.219	5.56	29.34	43.63			620	4300	720	5000
				0.250	6.35	33.41	49.71		20	710	4900	820	5700
				0.281	7.14	37.46	55.75			790	5400	930	6400
				0.312	7.92	41.48	61.69			880	6100	1030	7100
				0.330	8.38	43.81	65.18		30	930	6400	1090	7500
				0.344	8.74	45.62	67.90			970	6700	1130	7800
				0.375	9.52	49.61	73.78	STD		1060	7300	1240	8500

TECHNICAL DATA SHEET FOR SPECIFICATION ASTM A53/A795

DIMENSIONS, WEIGHTS (MASSES) PER UNIT LENGTH, AND TEST PRESSURES FOR PLAIN-END PIPE					
NOMINAL BORE		SPECIFIED OUTSIDE DIAMETER		SPECIFIED WALL THICKNESS	
INCH	MM	INCH	MM	INCH	MM
12	300	12.750	323.8	0.406	10.31
				0.438	11.13
				0.500	12.70

The minimum test pressure for outside diameters and wall thicknesses not listed shall be computed by the formula given below.
The computed test pressure shall be used in all cases, except as follows:
(a) For specified wall thicknesses greater than the heaviest specified wall thickness listed in this table for the applicable specified outside diameter, the test pressure shall be the highest value listed for the applicable specified outside diameter and grade.
(b) For pipe smaller than 50NB (mm) with a specified wall thickness less than the lightest specified wall thickness listed in this table for the applicable specified outside diameter and grade.
(c) For all sizes of Grade A and B pipe smaller than 50NB (mm), the test pressures were assigned arbitrarily. Test pressures for intermediate specified outside diameters need not exceed those given in this table for the next larger listed size.
P=2 St/D
Where:
P minimum hydrostatic test pressure, psi [kPa],
S 0.60 times the specified minimum yield strength, psi [kPa],
T specified wall thickness, in. [mm], and
D specified outside diameter, in. [mm].

DIMENSION & WEIGHT TOLERANCE		
SPECIFICATION	OUTSIDE DIAMETER	WALL THICKNESS
ASTM A53	"For size OD ≤40 NB = ±0.4 mm size ≥50 NB = ± 1% of OD"	"-12.7% of Wall Thickness + not specified"

CHEMICAL COMPOSITION(%)					
SPECIFICATION	GRADE	C Max	MN MAX	P MAX	S MAX
ASTM A53	A	0.250	0.950	0.050	0.045
	B	0.300	1.200	0.050	0.045
		Heat Treatment- Weld Seam Normalized, Metallographic- No untempared martensite remains, UT- As per ASTM A53 for weld seam			

DIMENSIONS, WEIGHTS (MASSES) PER UNIT LENGTH, AND TEST PRESSURES FOR PLAIN-END PIPE							
NOMINAL WEIGHT (MASS)		WEIGHT CLASS	SCHEDULE NO.	TEST PRESSURE			
				GRADE A		GRADE B	
LB/FT	KG/M			PSI	KPA	PSI	KPA
53.57	79.70		40	1150	7900	1340	9200
57.65	85.82			1240	8500	1440	9900
65.48	97.43	40		1410	9700	1650	11 400

DIMENSION & WEIGHT TOLERANCE	
WEIGHT	LENGTH
±10 % of specified weight (mass)	Single Random Length or Double random length or as per customer agreed

MECHANICAL PROPERTIES(MPA)					
V MAX	OTHER ELEMENT MAX	YS BODY	UTS BODY	UTS WELD	EL (MIN %) FOR GAUGE LENGTH 2" E
0.080	"Cu-0.40, Ni- 0.40, Cr- 0.40, Mo- 0.15,	205	330	330	e=1940x
0.080	Cu+Ni+Cr+Mo+V - 1	240	415	415	A0.2/U0.9

TECHNICAL DATA SHEET FOR IS 1161:2014/IS 3601:2006/ IS 9295:1983/ISO 4200/ASTM A513

NB	OD	THK	MASS	AREA OF CROSS-SECTION	INTERNAL VOLUME	SURFACE		MOMENT OF INERTIA	MODULUS OF SECTION	RADIUS OF GYRATION	SQUARE OF RADIS OF GYRATION
MM	MM	MM	KG/M	CM^2	CM^3/M	EXTERNAL CM^3/M	INTERNAL CM^3/M	CM^4/M	CM^3	CM	CM^2
15	21.3	2.0	0.952	1.21	235	669	543	0.57	0.54	0.69	0.47
		2.6	1.20	1.53	204	669	506	0.68	0.64	0.67	0.45
		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
		2.6	1.56	1.98	370	845	682	1.48	1.10	0.86	0.75
		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	1059	895	3.09	1.84	1.10	1.22
		3.2	2.41	3.07	585	1059	858	3.60	2.14	1.08	1.18
		4.0	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	4.46	3.05	1.41	1.99
		3.2	3.09	3.94	1018	1332	1131	7.62	3.59	1.39	1.93
		4.0	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
		3.2	3.56	4.53	1379	1517	1316	11.59	4.80	1.60	2.56
		4.0	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
		3.6	5.03	6.41	2215	1894	1668	25.87	8.58	2.01	4.03
		4.5	6.19	7.89	2067	1894	1612	30.90	10.25	1.98	3.92
-	63.5	3.65	5.39	6.42	2335	1994	1750	27.30	9.15	2.19	4.28
		4.5	6.55	7.67	2176	1994	1697	32.53	10.79	2.08	4.12
65	76.1	2.9	5.24	6.67	3882	2391	2209	44.74	11.76	2.59	6.71
		3.6	6.44	8.20	3728	2391	2165	54.01	14.19	2.57	6.59
		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
		4.0	8.38	10.67	5140	2793	2542	96.34	21.67	3.00	9.03
		4.8	9.96	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
		4.0	9.63	12.26	6881	3192	2941	146.28	28.80	3.54	11.93
		4.8	11.46	14.60	6648	3192	2890	171.39	33.74	3.43	11.74

TECHNICAL DATA SHEET FOR IS 1161:2014/IS 3601:2006/ IS 9295:1983/ISO 4200/ASTM A513

NB	OD	THK	MASS	AREA OF CROSS-SECTION	INTERNAL VOLUME	SURFACE		MOMENT OF INERTIA	MODULUS OF SECTION	RADIUS OF GYRATION	SQUARE OF RADIS OF GYRATION
MM	MM	MM	KG/M	CM^2	CM^3/M	EXTERNAL CM^3/M	INTERNAL CM^3/M	CM^4/M	CM^3	CM	CM^2
100	114.3	3.6	9.83	12.52	9009	3591	2265	191.98	33.59	3.92	15.33
		4.5	12.19	15.52	8709	3591	3308	234.32	41.00	3.89	15.10
		5.4	14.50	18.47	8413	3591	3252	274.54	48.04	3.85	14.86
110	127	4.5	13.59	17.32	10936	3990	3707	325.29	51.23	4.33	18.78
		4.8	14.47	18.43	10825	3990	3688	344.50	54.25	4.32	18.69
		5.4	16.19	20.63	10605	3990	3651	382.04	60.16	4.30	18.52
125	139.7	4.5	15.00	19.11	13417	4389	4106	437.20	62.59	4.78	22.87
		4.8	15.97	20.34	13295	4389	4087	463.33	66.33	4.77	22.78
		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
		4.8	17.47	22.26	16016	4788	4486	606.76	79.63	5.22	23.26
		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	732.59	88.74	5.68	32.27
		4.8	18.98	24.17	18991	5187	4885	777.13	94.14	5.67	32.15
		5.4	21.27	27.09	18699	5187	4847	864.70	104.75	5.65	31.92
		5.9	23.20	29.50	18465	5187	4818	970.00	113.40	5.63	31.72
		6.3	24.67	31.43	18265	5187	4791	992.28	120.20	5.62	31.75
		8.0	30.99	39.48	17460	5187	4684	1221.25	147.94	5.56	30.93
150	168.3	4.5	18.18	23.16	19931	5287	5005	777.22	92.36	5.79	33.56
		4.8	19.35	24.66	19781	5287	4986	824.57	97.99	5.78	33.44
		5.4	21.69	27.64	19483	5287	4948	917.69	109.05	5.76	33.21
		6.3	25.17	32.06	19040	5287	4891	1053.42	125.18	5.73	32.85
		8.0	31.63	40.29	18218	5287	4785	1297.27	154.16	5.67	32.20
		10.0	39.04	49.73	17273	5287	4659	1563.98	185.86	5.61	31.45
175	193.7	4.8	22.36	28.49	26619	6085	5784	1271.39	131.27	6.68	44.63
		5.4	25.08	31.94	26273	6085	5746	1416.97	146.31	6.66	44.36
		5.9	27.33	34.81	25987	6085	5715	1536.13	158.61	6.64	44.13
		6.3	29.12	37.09	25759	6085	5689	1630.05	168.31	6.63	43.95.
		A	36.64	46.67	24801	6085	5583	2015.54	208.11	6.57	43.19

TECHNICAL DATA SHEET FOR IS 1161:2014/IS 3601:2006/ IS 9295:1983/ISO 4200/ASTM A513

S. No.	OD	THK	MASS	AREA OF CROSS-SECTION	INTERNAL VOLUME	SURFACE		MOMENT OF INERTIA	MODULUS OF SECTION	RADIUS OF GYRATION	SQUARE OF RADIS OF GYRATION
						EXTERNAL	INTERNAL				
MM	MM	MM	KG/M	CM²	CM³/M	CM³/M	CM³/M	CM⁴/M	CM³	CM	CM²
175	193.7	10.0	45.30	57.71	23697	6085	5457	2441.59	252.10	6.50	42.31
		12.0	53.77	68.50	22618	6085	5331	2839.20	293.15	6.44	41.45
200	219.1	4.8	25.37	32.32	34471	6883	6582	1856.03	169.42	7.58	56.43
		5.6	29.49	37.56	33947	6883	6531	2141.61	195.49	7.55	57.02
		5.9	31.02	39.52	33751	6883	6513	2247.01	205.11	7.54	56.86
		6.3	33.06	42.12	33491	6883	6487	2386.14	217.81	7.53	56.65
		8.0	41.65	53.06	32397	6883	6381	2959.63	270.16	7.47	55.78
		10.0	51.57	63.69	31134	6883	6255	3598.44	328.47	7.40	54.78
		12.0	61.29	78.06	29895	6883	6129	4199.88	383.38	7.33	53.79
225	244.5	5.9	34.72	42.23	42529	7681	7310	3149.12	257.60	8.44	71.21
		6.3	37.01	47.14	42237	7681	7285	3346.03	273.70	8.42	70.97
		8.0	46.66	49.44	41007	7681	7179	4160.45	340.32	8.37	70.00
		10.0	57.83	73.67	39584	7681	7053	5070.15	414.98	8.30	68.86
250	273	5.9	38.86	49.51	53584	8577	8206	4417.18	323.60	9.45	89.22
		6.3	41.44	52.79	53256	8577	8181	4695.82	344.02	9.43	88.96
		8.0	52.28	66.60	51875	8577	8074	5851.71	428.70	9.37	87.86
		10.0	64.86	82.62	50273	8577	7948	7154.09	524.11	9.31	86.59
		12.0	77.24	98.39	48695	8577	7823	8396.14	615.10	9.24	85.33
300	323.9	6.3	49.34	62.86	76111	10176	9780	7928.90	489.59	11.23	126.14
		8.0	62.32	79.39	74458	10176	9673	9910.08	611.92	11.17	124.82
		10.0	77.41	98.61	72536	10176	9547	12158.34	750.75	11.10	123.29
		12.0	92.30	117.58	70639	10176	9422	14319.56	884.20	11.04	121.78

Note : Specification IS 1161 for Structural, IS 3601 for General Engineering Purpose & IS 9295 Idlers Belt Conveyors purpose.

Standard size and mass of tube for structural purpose as per above table & thickness higher than specified, they may be supplied as per mutual agreement with customer. Size range for IS 9295:1983 is 60.3 to 323.9 mm OD

CHEMICAL & MECHANICAL PROPERTIES

SPECIFICATION	GRADE	CHEMICAL COMPOSITION (%)					MECHANICAL PROPERTIES (MPa)		
		C MAX	MN MAX	P MAX	S MAX	CE	YIELD STRENGTH	TENSILE STRENGTH	% ELONGATION
							MIN	MIN	MIN
IS 1161:2014	YST 210	0.120	0.600	0.040	0.040	-	210	330	20
	YST 240	0.160	1.200	0.040	0.040	0.450	240	410	17
	YST 310	0.250	1.300	0.040	0.040	0.450	310	450	14
	YST 355	0.250	1.500	0.040	0.040	0.450	355	490	10
S 3601:2006	WT 160	0.100	0.500	0.040	0.040	-	160	310	22
	WT 210	0.120	0.600	0.040	0.040	-	210	330	20
	WT 240	0.160	1.200	0.040	0.040	0.450	240	410	15
	WT 310	0.250	1.300	0.040	0.040	0.450	310	450	10
IS 9295:1983	ERW 210	-	-	0.060	0.060	-	210	330	20
	ERW 240	-	-	0.060	0.060	-	240	410	18
	ERW 310	-	-	0.060	0.060	-	310	450	15

DIMENSION & WEIGHT TOLERANCE

SPECIFICATION	OUTSIDE DIAMETER	WALL THICKNESS	WEIGHT	LENGTH
IS 1161:2014	Upto size 48.3 mm +0.4/-0.8 mm & size over 48.3 mm ± 1 % of nominal OD	± 10 % of nominal thickness	"For single tube = ± 10 % of nominal weight. 10 tone (min) lots = ± 7.5% of nominal weight"	"Random Length: 4 to 7 mtr Exact Length as per Customer agreed"
IS 3601:2006	"Upto & including 40 mm OD + 0.5 / -1.0 mm over 40 mm OD ± 1 % of nominal OD".	±10 % of nominal wall thickness	Mass Kg/mtr as per annex B of IS 3601	"Random Length: 4 to 7 mtr Exact Length as per Customer agreed"
IS 9295:1983	± 0.8% of nominal OD	± 10 % of nominal thickness.	"For single tube ± 10% For load of 10 tonnes ± 7.5%"	"Exact Length: +6 mm/-0 Random Length: 4 to 7 mtr"
	"Eccentricity - maximum 5% at any cross-section area.			
	calculated by formula: - (Thick (max.) - thick.(min.) / 2 x specified thick.) x 100"			

TECHNICAL DATA SHEET FOR SPECIFICATION EN 10255/ IS 1239 (PART 1)/AS 1074/ISO 65

DIMENSIONS, DIAMETER TOLERANCE AND MASS PER UNIT LENGTH								
SIZE				OUTSIDE DIAMETER			MASS PER UNIT LENGTH OF BARE TUBE	
NOMINAL DIAMETER DN	SPECIFIED OD	THREAD SIZE	A	MAX	MIN	WALL THICKNESS	PLAIN END	SOCKETED
MM	MM	INCH	-	MM	MM	MM	KG/M	KG/M
15	21.3	1/2	L	21.7	21.0	2.3	1.08	1.09
20	26.9	3/4	L	27.1	26.4	2.3	1.40	1.41
25	33.7	1	L	34.0	33.2	2.9	2.20	2.22
32	42.4	1 1/4	L	42.7	41.9	2.9	2.82	2.85
40	48.3	1 1/2	L	48.6	47.8	2.9	3.25	3.29
50	60.3	2	L	60.7	59.6	3.2	4.51	4.58
65	76.1	2 1/2	L	76.0	75.2	3.2	5.75	5.87
80	88.9	3	L	88.7	87.9	3.2	6.76	6.93
90	101.6	3 1/2	L	101.2	100.3	3.6	8.70	8.88
100	114.3	4	L	113.9	113.0	3.6	9.83	10.10
125	139.7	5	L	140.8	138.5	4.5	15.00	15.50
150	165.1	6	L	166.5	163.9	4.5	17.80	18.40
15	21.3	1/2	L1	21.7	21.0	2.3	1.08	1.09
20	26.9	3/4	L1	27.1	26.4	2.3	1.39	1.40
25	33.7	1	L1	34.0	33.2	2.9	2.20	2.22
32	42.4	1 1/4	L1	42.7	41.9	2.9	2.82	2.85
40	48.3	1 1/2	L1	48.6	47.8	2.9	3.24	3.28
50	60.3	2	L1	60.7	59.6	3.2	4.49	4.56
65	76.1	2 1/2	L1	76.3	75.2	3.2	5.73	5.85
80	88.9	3	L1	89.4	87.9	3.6	7.55	7.72
100	114.3	4	L1	114.9	113.0	4.0	10.80	11.10
15	21.3	1/2	Light/ L2	21.4	21.0	2.0	0.95	0.96
20	26.9	3/4	Light/ L2	26.9	26.4	2.3	1.38	1.39
25	33.7	1	Light/ L2	33.8	33.2	2.6	1.98	2.00
32	42.4	1 1/4	Light/ L2	42.5	41.9	2.6	2.54	2.57
40	48.3	1 1/2	Light/ L2	48.4	47.8	2.9	3.23	3.27
50	60.3	2	Light/ L2	60.2	59.6	2.9	4.08	4.15
65	76.1	2 1/2	Light/ L2	76.0	75.2	3.2	5.71	5.83
80	88.9	3	Light/ L2	88.7	87.9	3.2	6.72	6.89
100	114.3	4	Light/ L2	113.9	113.0	3.6	9.75	10.00
15	21.3	1/2	Medium/ M	21.8	21.0	2.6	1.21	1.22
20	26.9	3/4	Medium/ M	27.3	26.5	2.6	1.56	1.57
25	33.7	1	Medium/ M	34.2	33.3	3.2	2.41	2.43
32	42.4	1 1/4	Medium/ M	42.9	42.0	3.2	3.10	3.13
40	48.3	1 1/2	Medium/ M	48.8	47.9	3.2	3.56	3.60
50	60.3	2	Medium/ M	60.8	59.7	3.6	5.03	5.10
65	76.1	2 1/2	Medium/ M	76.6	75.3	3.6	6.42	6.54
80	88.9	3	Medium/ M	89.5	88.0	4.0	8.36	8.53

TECHNICAL DATA SHEET FOR SPECIFICATION EN 10255/ IS 1239 (PART 1)/AS 1074/ISO 65

DIMENSIONS, DIAMETER TOLERANCE AND MASS PER UNIT LENGTH								
SIZE				OUTSIDE DIAMETER			MASS PER UNIT LENGTH OF BARE TUBE	
NOMINAL DIAMETER DN	SPECIFIED OD	THREAD SIZE	A	MAX	MIN	WALL THICKNESS	PLAIN END	SOCKETED
MM	MM	INCH	-	MM	MM	MM	KG/M	KG/M
100	114.3	4	Medium/ M	115.0	113.1	4.5	12.20	12.50
125	139.7	5	Medium/ M	140.8	138.5	4.8/5.0	15.9/16.6	16.40/17.1
150	165.1	6	Medium/ M	166.5	163.9	4.8/5.0	18.9/19.8	19.50/20.4
15	21.3	1/2	Heavy/ H	21.8	21.0	3.2	1.44	1.45
20	26.9	3/4	Heavy/ H	27.3	26.5	3.2	1.87	1.88
25	33.7	1	Heavy/ H	34.2	33.3	4.0	2.93	2.95
32	42.4	1 1/4	Heavy/ H	42.9	42.0	4.0	3.79	3.82
40	48.3	1 1/2	Heavy/ H	48.8	47.9	4.0	4.37	4.41
50	60.3	2	Heavy/ H	60.8	59.7	4.5	6.19	6.26
65	76.1	2 1/2	Heavy/ H	76.6	75.3	4.5	7.93	8.05
80	88.9	3	Heavy/ H	89.5	88.0	4.8/5.0	9.90/10.3	10.1/10.5
100	114.3	4	Heavy/ H	115.0	113.1	5.4	14.50	14.80
125	139.7	5	Heavy/ H	140.8	138.5	5.4	17.90	18.40
150	165.1	6	Heavy/ H	166.5	163.9	5.4	21.30	21.90

SPECIFICATION	CHEMICAL COMPOSITION (%)				MECHANICAL PROPERTIES		
	C	MN	P	S	YS	UTS	EL
	MAX	MAX	MAX	MAX	MPA MIN.	MPA MIN	% MIN
EN 10255 (S 195T)	0.200	1.400	0.035	0.030	195	320 to 520	20
IS 1239 (Part 1)	0.12	0.60	0.040	0.040	-	320	Up to size 25 mm - 12 min. & over size 25 mm - 20 min.
AS 1074	-	-	0.045	0.045	195	320 to 460	20

DIMENSION & WEIGHT TOLERANCE				
SPECIFICATION	**OUTSIDE DIAMETER**	**WALL THICKNESS**	**WEIGHT**	**LENGTH**
EN 10255	As per previous page table	For M and H series & Type L ± 10 % For Types L1 and L2 – 8 % with the plus tolerance limited by the mass tolerance.	For M and H series and Type L. ± 7.5 % on bundles of 10 tons or more, For Types L1 and L2. +10%/ -8% on individual tubes"	Standard: 6 or 6.4 mtr Tolerance +150/-50mm Exact: Upto 6 mtr Tolerance +10/-0 mm 6 to 12 mtr Tolerance +15/-0 mm"
IS 1239 (Part 1)	As per previous page Light Medium & Heavy table	"For light: - 8 % /+ no limit For medium & heavy: -10 % /+ no limit"	" Single tube: - 8 % & + 10 % for Light tubes ± 10 % Medium & Heavy tubes for a lot of 10 MT min: +7.5%, -5% for Light tubes ± 7.5% for Medium & Heavy tubes"	"Exact Length: +6 mm/-0 Random Length: 4 to 7 mtr Approximate Length ± 150 mm"
AS 1074	As per previous page Light Medium & Heavy table	"For light: - 8 % /+ no limit For medium & heavy: -10 % /+ no limit"	" Single tube: - 8 % & + 10 % for a Conginment mass for quantities of 150 meter min.: ± 4% "	"Exact Length : +8 mm/-0 Standard Length : 6.50 meter ± 80 mm"
Bend/Ductility Test For tubes upto & including 2"		Black Tube :-Bending angle - 180°, Bending radius - 6 times to the OD of Tube, Weld Position at 90° to the plane of bending Galvanized Tube:- For IS 1239 -Bending angle - 90°, Bending radius - 8 times to the OD of Tube, For AS 1074 - 6 times to the OD of Tube, Weld Position - 90° to the plane of bending & For EN 10255-Bending angle - 90°, Bending radius as specified in EN 10255 table 4.		
Flattening/Ductility Test For Tubes above 2"		"1. Flatten upto 75% of tube dia for weld test (Weld Position at 90°) 2. Flatten upto 60% of tube dia for base metal test"		
Free Bore Test		"For IS 1239 : -A rod 230 mm long and of 11 mm, 16 mm & 21 mm diameter shall be passed through respectively 15NB, 20NB & 25NB of the sample tube to ensure a free bore. For AS 1074:- A rod 230 mm long and of 9.5 mm, 14.3 mm & 20.6 mm diameter shall be passed through respectively 15NB, 20NB & 25NB of the sample tube to ensure a free bore"		
Adhesion Test	"Bend test (For size upto 50 mm NB)"	"Galvanized Tube:- For IS 1239 -Bending angle - 90°, Bending radius - 8 times to the OD of Tube, For AS 1074 - 6 times to the OD of Tube, Weld Position - 90° to the plane of bending & For EN 10255-Bending angle - 90°, Bending radius as specified in EN 10255 table 4."		
	Pivoted Hammer test (For size over 50 mm NB)	The test shall consist of two or more standards blows forming parallel impressions with 6 mm spacing and a common axis. no part of an impression shall be closer than 12 mm to the edge of the member. Removal or lifting of the coating in the area between the impressions shall constitute failure.		
Uniformity test		The clean test pieces shall be five one-minute successive dips, in copper sulphate solution kept at a temperature of 18 ± 2°C.		
Leak Tightness/Hydro Test		100% Hydrotesting at 5 Mpa or online eddy current testing or ultrasonic testing		
Mass of Zinc Coating		360gm/meter² Min. for IS 1239 & 300 gm/meter2 for AS1074		

TECHNICAL DATA SHEET FOR SPECIFICATION EN 10219/ASTM A500/ASTM A252 - CIRCULAR PIPE

SPECIFIED OUTSIDE DIAMETER		SPECIFIED THICKNESS		MASS PER UNIT LENGTH		CROSS-SECTIONAL AREA
mm	Inch	mm	Inch	kg/m	lb/ft	cm2
21.3	0.839	2.00	0.079	0.950	0.638	1.210
21.3	0.839	2.50	0.098	1.160	0.779	1.480
21.3	0.839	3.00	0.118	1.350	0.907	1.720
26.9	1.059	2.00	0.079	1.230	0.827	1.560
26.9	1.059	2.50	0.098	1.500	1.008	1.920
26.9	1.059	3.00	0.118	1.770	1.189	2.250
33.7	1.327	2.00	0.079	1.560	1.048	1.990
33.7	1.327	2.50	0.098	1.920	1.290	2.450
33.7	1.327	3.00	0.118	2.270	1.525	2.890
42.4	1.669	2.00	0.079	1.990	1.337	2.540
42.4	1.669	2.50	0.098	2.460	1.653	3.130
42.4	1.669	3.00	0.118	2.910	1.955	3.710
42.4	1.669	4.00	0.157	3.790	2.547	4.830
48.3	1.902	2.00	0.079	2.280	1.532	2.910
48.3	1.902	2.50	0.098	2.820	1.895	3.600
48.3	1.902	3.00	0.118	3.350	2.251	4.270
48.3	1.902	4.00	0.157	4.370	2.937	5.570
48.3	1.902	5.00	0.197	5.340	3.588	6.800
60.3	2.375	2.00	0.079	2.880	1.935	3.660
60.3	2.375	2.50	0.098	3.560	2.392	4.540
60.3	2.375	3.00	0.118	4.240	2.849	5.400
60.3	2.375	4.00	0.157	5.550	3.729	7.070
60.3	2.375	5.00	0.197	6.820	4.583	8.690
76.1	3.000	2.00	0.079	3.650	2.453	4.660
76.1	3.000	2.50	0.098	4.540	3.051	5.780
76.1	3.000	3.00	0.118	5.410	3.635	6.890
76.1	3.000	4.00	0.157	7.110	4.778	9.060
76.1	3.000	5.00	0.197	8.770	5.893	11.200
76.1	3.000	6.00	0.236	10.400	6.988	13.200
88.9	3.500	2.00	0.079	4.290	2.883	5.460
88.9	3.500	2.50	0.098	5.330	3.582	6.790
88.9	3.500	3.00	0.118	6.360	4.274	8.100
88.9	3.500	4.00	0.157	8.380	5.631	10.700
88.9	3.500	5.00	0.197	10.300	6.921	13.200
88.9	3.500	6.00	0.236	12.300	8.265	15.600

SECOND MOMENT OF AREA	RADIUS OF GYRATION	ELASTIC SECTION MODULUS	PLASTIC SECTION MODULUS	TORSIONAL INERTIA CONSTANT	TORSIONAL MODULUS CONSTANT	SUPER- FICIAL AREA PER METRE LENGTH	NOMINAL LENGTH PER TONNE
cm4	cm	cm3	cm3	cm4	cm3	m2/m	m
0.571	0.686	0.536	0.748	1.14	1.07	0.067	1050
0.664	0.671	0.623	0.889	1.33	1.25	0.067	863
0.741	0.656	0.696	1.010	1.48	1.39	0.067	739
1.22	0.883	0.907	1.240	2.44	1.81	0.085	814
1.44	0.867	1.07	1.49	2.88	2.14	0.085	665
1.63	0.852	1.21	1.72	3.27	2.43	0.085	566
2.51	1.120	1.49	2.01	5.02	2.98	0.106	640
3.00	1.110	1.78	2.44	6.00	3.56	0.106	520
3.44	1.090	2.04	2.84	6.88	4.08	0.106	440
5.19	1.430	2.45	3.27	10.40	4.90	0.133	502
6.26	1.410	2.95	3.99	12.50	5.91	0.133	407
7.25	1.400	3.42	4.67	14.5	6.84	0.133	343
8.99	1.360	4.24	5.92	18.0	8.48	0.133	264
7.81	1.640	3.23	4.29	15.6	6.47	0.152	438
9.46	1.620	3.92	5.25	18.9	7.83	0.152	354
11.00	1.610	4.55	6.17	22.0	9.11	0.152	298
13.80	1.570	5.70	7.87	27.5	11.40	0.152	229
16.20	1.540	6.69	9.42	32.3	13.40	0.152	187
15.60	2.060	5.17	6.80	31.2	10.30	0.189	348
19.00	2.050	6.30	8.36	38.0	12.60	0.189	281
22.20	2.030	7.37	9.86	44.4	14.70	0.189	236
28.20	2.000	9.34	12.70	56.3	18.70	0.189	180
33.50	1.960	11.10	15.30	67.0	22.20	0.189	147
32.00	2.620	8.40	11.00	64.0	16.80	0.239	274
39.20	2.600	10.30	13.50	78.4	20.60	0.239	220
46.10	2.590	12.10	16.00	92.2	24.20	0.239	185
59.10	2.550	15.50	20.80	118.0	31.00	0.239	141
70.90	2.520	18.60	25.30	142.0	37.30	0.239	114
81.80	2.490	21.50	29.60	164.0	43.00	0.239	96.4
51.60	3.070	11.60	15.10	103.0	23.20	0.279	233
63.40	3.060	14.30	18.70	127.0	28.50	0.279	188
74.80	3.040	16.80	22.10	150.0	33.60	0.279	157
96.30	3.000	21.70	28.90	193.0	43.30	0.279	119
116.00	2.970	26.20	35.20	233.0	52.40	0.279	96.7
135.00	2.940	30.40	41.30	270.0	60.70	0.279	81.5

TECHNICAL DATA SHEET FOR SPECIFICATION EN 10219/ASTM A500/ASTM A252 - CIRCULAR PIPE

SPECIFIED OUTSIDE DIAMETER		SPECIFIED THICKNESS		MASS PER UNIT LENGTH		CROSS-SECTIONAL AREA	SECOND MOMENT OF AREA	RADIUS OF GYRATION	ELASTIC SECTION MODULUS	PLASTIC SECTION MODULUS	TORSIONAL INERTIA CONSTANT	TORSIONAL MODULUS CONSTANT	SUPER- FICIAL AREA PER METRE LENGTH	NOMINAL LENGTH PER TONNE
mm	Inch	mm	Inch	kg/m	lb/ft	cm2	cm4	cm	cm3	cm3	cm4	cm3	m2/m	m
88.9	3.500	6.30	0.248	12.800	8.601	16.300	140.00	2.930	31.50	43.10	280.0	63.10	0.279	77.9
101.6	4.000	2.00	0.079	4.910	3.299	6.260	77.60	3.520	15.30	19.80	155.0	30.60	0.319	204
101.6	4.000	2.50	0.098	6.110	4.106	7.780	95.60	3.500	18.80	24.60	191.0	37.60	0.319	164
101.6	4.000	3.00	0.118	7.290	4.899	9.290	113	3.490	22.30	29.20	226.0	44.50	0.319	137
101.6	4.000	4.00	0.157	9.630	6.471	12.300	146	3.450	28.80	38.10	293.0	57.60	0.319	104
101.6	4.000	5.00	0.197	11.900	7.996	15.200	177	3.420	34.90	46.70	355.0	69.90	0.319	84
101.6	4.000	6.00	0.236	14.100	9.475	18.000	207	3.390	40.70	54.90	413.0	81.40	0.319	70.7
101.6	4.000	6.30	0.248	14.800	9.945	18.900	215	3.380	42.30	57.30	430.0	84.70	0.319	67.5
114.3	4.500	2.50	0.098	6.890	4.630	8.780	137	3.950	24.00	31.30	275.0	48.00	0.359	145
114.3	4.500	3.00	0.118	8.230	5.530	10.500	163	3.940	28.40	37.20	325.0	56.90	0.359	121
114.3	4.500	4.00	0.157	10.900	7.324	13.900	211	3.900	36.90	48.70	422.0	73.90	0.359	91.9
114.3	4.500	5.00	0.197	13.500	9.072	17.200	257	3.870	45.00	59.80	514.0	89.90	0.359	74.2
114.3	4.500	6.00	0.236	16.000	10.752	20.400	300	3.830	52.50	70.40	600.0	105.0	0.359	62.4
114.3	4.500	6.30	0.248	16.800	11.289	21.400	313	3.820	54.70	73.60	625.0	109.0	0.359	59.6
114.3	4.500	8.00	0.315	21.000	14.111	26.700	379	3.770	66.40	90.60	759.0	133.0	0.359	47.7
139.7	5.500	3.00	0.118	10.100	6.787	12.900	301	4.830	43.10	56.10	602.0	86.20	0.439	98.9
139.7	5.500	4.00	0.157	13.400	9.004	17.100	393	4.800	56.20	73.70	786	112	0.439	74.7
139.7	5.500	5.00	0.197	16.600	11.155	21.200	481	4.770	68.8	90.8	961	138	0.439	60.2
139.7	5.500	6.00	0.236	19.800	13.305	25.200	564	4.730	80.8	107.0	1129	162	0.439	50.5
139.7	5.500	6.30	0.248	20.700	13.910	26.400	589	4.720	84.3	112.0	1177	169	0.439	48.2
139.7	5.500	8.00	0.315	26.000	17.471	33.100	720	4.660	103.0	139.0	1441	206	0.439	38.5
168.3	6.625	3.00	0.118	12.200	8.198	15.600	532	5.850	63.3	82.0	1065	127	0.529	81.8
168.3	6.625	4.00	0.157	16.200	10.886	20.600	697	5.810	82.8	108.0	1394	166	0.529	61.7
168.3	6.625	5.00	0.197	20.100	13.507	25.700	856	5.780	102.0	133.0	1712	203	0.529	49.7
168.3	6.625	6.00	0.236	24.000	16.127	30.600	1009	5.740	120.0	158.0	2017	240	0.529	41.6
168.3	6.625	6.30	0.248	25.200	16.934	32.100	1053	5.730	125.0	165.0	2107	250	0.529	39.7
168.3	6.625	8.00	0.315	31.600	21.234	40.300	1297	5.670	154.0	206.0	2595	308	0.529	31.6
168.3	6.625	10.00	0.394	39.000	26.207	49.700	1564	5.610	186.0	251.0	3128	372	0.529	25.6
177.8	7.000	4.00	0.157	17.100	11.491	21.800	825	6.150	92.8	121.0	1650	186	0.559	58.3
177.8	7.000	5.00	0.197	21.300	14.313	27.100	1014	6.110	114.0	149.0	2028	228	0.559	46.9
177.8	7.000	6.00	0.236	25.400	17.068	32.400	1196	6.080	135.0	177.0	2392	269	0.559	39.3
177.8	7.000	6.30	0.248	26.600	17.874	33.900	1250	6.070	141.0	185.0	2499	281	0.559	37.5
177.8	7.000	8.00	0.315	33.500	22.511	42.700	1541	6.010	173.0	231.0	3083	347	0.559	29.9
177.8	7.000	10.00	0.394	41.400	27.820	52.700	1862	5.940	209.0	282.0	3724	419	0.559	24.2
193.7	7.626	4.00	0.157	18.700	12.566	23.800	1073	6.710	111.0	144.0	2146	222	0.609	53.4

TECHNICAL DATA SHEET FOR SPECIFICATION EN 10219/ASTM A500/ASTM A252 - CIRCULAR PIPE

SPECIFIED OUTSIDE DIAMETER		SPECIFIED THICKNESS		MASS PER UNIT LENGTH		CROSS-SECTIONAL AREA
mm	Inch	mm	Inch	kg/m	lb/ft	cm2
193.7	7.625	5.00	0.197	23.300	15.657	29.600
193.7	7.625	6.00	0.236	27.800	18.681	35.400
193.7	7.625	6.30	0.248	29.100	19.554	37.100
193.7	7.625	8.00	0.315	36.600	24.594	46.700
193.7	7.625	10.00	0.394	45.300	30.440	57.700
219.1	8.625	4.00	0.157	21.200	14.246	27.000
219.1	8.625	5.00	0.197	26.400	17.740	33.600
219.1	8.625	6.00	0.236	31.500	21.167	40.200
219.1	8.625	6.30	0.248	33.100	22.242	42.100
219.1	8.625	8.00	0.315	41.600	27.954	53.100
219.1	8.625	10.00	0.394	51.600	34.674	65.700
219.1	8.625	12.00	0.472	61.300	41.192	78.100
219.1	8.625	12.50	0.492	63.700	42.804	81.100
273.0	10.750	5.00	0.197	33.000	22.175	42.100
273.0	10.750	6.00	0.236	39.500	26.543	50.300
273.0	10.750	6.30	0.248	41.400	27.820	52.800
273.0	10.750	8.00	0.315	52.300	35.144	66.600
273.0	10.750	10.00	0.394	64.900	43.611	82.600
273.0	10.750	12.00	0.472	77.200	51.876	98.400
273.0	10.750	12.50	0.492	80.300	53.959	102.000
323.9	12.750	5.00	0.197	39.300	26.408	50.100
323.9	12.750	6.00	0.236	47.000	31.583	59.900
323.9	12.750	6.30	0.248	49.300	33.128	62.900
323.9	12.750	8.00	0.315	62.300	41.864	79.400
323.9	12.750	10.00	0.394	77.400	52.010	98.600
323.9	12.750	12.00	0.472	92.300	62.023	118.000
323.9	12.750	12.50	0.492	96.000	64.509	122.000

DIMENSION & WEIGHT TOLERANCE

SPECIFICATION	OUTSIDE DIAMETER	WALL THICKNESS
ASTM A500	±0.75% of Specified OD	±10% of Specified Wall Thickness
ASTM A252	± 1% of Specified OD	+12.5 % & minimum as per ASTM A252 Table X1.1

SECOND MOMENT OF AREA	RADIUS OF GYRATION	ELASTIC SECTION MODULUS	PLASTIC SECTION MODULUS	TORSIONAL INERTIA CONSTANT	TORSIONAL MODULUS CONSTANT	SUPER- FICIAL AREA PER METRE LENGTH	NOMINAL LENGTH PER TONNE
cm4	cm	cm3	cm3	cm4	cm3	m2/m	m
1320	6.670	136.0	178.0	2640	273	0.609	43.0
1560	6.640	161.0	211.0	3119	322	0.609	36.0
1630	6.630	168.0	221.0	3260	337	0.609	34.3
2016	6.570	208.0	276.0	4031	416	0.609	27.3
2442	6.500	252.0	338.0	4883	504	0.609	22.1
1564	7.610	143.0	185.0	3128	286	0.688	47.1
1928	7.570	176.0	229.0	3856	352	0.688	37.9
2282	7.540	208.0	273.0	4564	417	0.688	31.7
2386	7.530	218.0	285.0	4772	436	0.688	30.2
2960	7.470	270.0	357.0	5919	540	0.688	24.0
3598	7.400	328.0	438.0	7197	657	0.688	19.4
4200	7.330	383.0	515.0	8400	767	0.688	16.3
4345	7.320	397.0	534.0	8689	793	0.688	15.7
3781	9.480	277.0	359.0	7562	554	0.858	30.3
4487	9.440	329.0	428.0	8974	657	0.858	25.3
4696	9.430	344.0	448.0	9392	688	0.858	24.1
5852	9.370	429.0	562.0	11700	857	0.858	19.1
7154	9.310	524.0	692.0	14310	1048	0.858	15.4
8396	9.240	615.0	818.0	16790	1230	0.858	12.9
8697	9.220	637.0	849.0	17400	1274	0.858	12.5
6369	11.300	393.0	509.0	12740	787	1.020	25.4
7572	11.200	468.0	606.0	15150	935	1.020	21.3
7929	11.200	490.0	636.0	15860	979	1.020	20.3
9910	11.200	612.0	799.0	19820	1224	1.020	16.0
12160	11.100	751.0	986.0	24320	1501	1.020	12.9
14320	11.000	884.0	1168.0	28640	1768	1.020	10.8
14850	11.000	917.0	1213.0	29690	1833	1.020	10.4

WEIGHT	LENGTH	LENGTH
"- 8% & +10% of nominal weight. ± 7% on lots of 10 tonnes."	"Length ≤ 6.5 mtr: -6/+13 mm Length > 6.5 mtr: -6/+19 mm"	
+15% and -5% of Nominal Weight.	Pipe shall be finished in Singlerandom length, Double random length or Uniform lengths length as per customer requirement	"Size range ASTM A252 6.625 to 12.75'' OD"

DIMENSION & WEIGHT TOLERANCE

SPECIFICATION	OUTSIDE DIAMETER	WALL THICKNESS
EN 10219	±1% with a minimum of ±0.5 mm and a maximum of ±1.0 mm.	" for D ≤ 406.4 mm T ≤ 5 mm ± 10% T > 5 mm ± 0.5 mm for D>406.4 mm = ±10% with a max. ±2 mm"

SPEC.	GRADE	CHEMICAL COMPOSITION (%)				
		C MAX	MN MAX	P MAX	S MAX	SI MAX
ASTM A500	A	0.300	1.400	0.045	0.045	-
	B	0.300	1.400	0.045	0.045	-
	C	0.270	1.400	0.045	0.045	-
	D	0.300	1.400	0.045	0.045	-
ASTM A252	1	-	-	0.050	-	-
	2	-	-	0.050	-	-
	3	-	-	0.050	-	-
EN 10219	S235JRH	0.170	1.400	0.040	0.040	-
						N- 0.009
	S275J0H	0.200	1.500	0.035	0.035	-
						N- 0.009
	S275J2H	0.200	1.500	0.030	0.030	-
						N- 0.009
	S355J0H	0.220	1.600	0.035	0.035	0.550
						N- 0.009
	S355J2H	0.220	1.600	0.030	0.030	0.550
	S355K2H	0.220	1.600	0.030	0.030	0.550
	S275MH	0.130	1.500	0.035	0.030	0.500
	S275MLH	0.130	1.500	0.030	0.025	0.500
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020				
	S355MH	0.140	1.500	0.035	0.030	0.500
		N- 0.020, Ni- 0.30,Mo-0.20, Al - 0.020				
	S355MLH	0.140	1.500	0.030	0.025	0.500
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020				
	S420MH	0.160	1.700	0.035	0.030	0.500
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020				
	S420MLH	0.160	1.700	0.030	0.025	0.500
		N- 0.020, Ni- 0.30, Mo-0.20, Al - 0.020				
	S460MH	0.160	1.700	0.035	0.030	0.600
		N- 0.025, Ni- 0.30, Mo-0.20, Al - 0.020				
	S460MLH	0.160	1.700	0.030	0.025	0.500
		N- 0.025, Ni- 0.30, Mo-0.20, Al - 0.020				

WEIGHT	LENGTH	LENGTH
±6% of Nominal Weight	"Random length 4 to16 mtr Approximate Length: -0/+50 mm Exact Length: <6 mtr +5/-0 mm ≥ 6 ≤10 mtr: +15/-0 mm >10 mtr: +5/-0 mm +1 mm/mtr"	

				TENSILE & IMPACT TEST			
V MAX	NB MAX	TI MAX	CEIIW	YIELD STRENGTH	TENSILE STRENGTH		% EL
				MIN	MIN	MAX	MAX
-	-	-	-	230	310	-	25
-	-	-	-	290	400	-	23
-	-	-	-	315	425	-	21
-	-	-	-	250	400	-	23
-	-	-	-	205	345	-	30
-	-	-	-	240	415	-	25
-	-	-	-	310	455	-	20
-	-	-	0.350	235	360	510	24
				Impact Test at Temp 20°C = 27J Min			
-	-	-	0.400	275	410	560	20
				Impact Test at Temp 0°C = 27J Min			
-	-	-	0.400	275	410	560	20
				Impact Test at Temp -20°C = 27J Min			
-	-	-	0.450	355	470	630	20
				Impact Test at Temp 0°C = 27J Min			
-	-	-	0.450	355	470	630	20
				Impact Test at Temp -20°C = 27J Min			
-	-	-	0.450	355	470	630	20
				Impact Test at Temp -20°C = 40J Min			
0.080	0.050	0.050	0.340	275	360	510	24
				Impact Test at Temp -20°C = 40J Min			
0.080	0.050	0.050	0.340	275	360	510	24
				Impact Test at Temp -50°C = 27J Min			
0.100	0.050	0.050	0.390	355	450	610	22
				Impact Test at Temp -20°C = 40J Min			
0.100	0.050	0.050	0.390	355	450	610	22
				Impact Test at Temp -50°C = 27J Min			
0.120	0.050	0.050	0.430	420	500	660	19
				Impact Test at Temp -20°C = 40J Min			
0.120	0.050	0.050	0.430	420	500	660	19
				Impact Test at Temp -50°C = 27J Min			
0.120	0.050	0.050	0.460	460	530	720	17
				Impact Test at Temp -20°C = 40J Min			
0.120	0.050	0.050	0.460	460	530	720	17
				Impact Test at Temp -50°C = 27J Min			

COMPLETE TRACEABILITY THROUGH UNIQUE IDENTIFICATION

At Goel Pipes, we are dedicated to delivering products that not only meet but exceed customer expectations. One of the standout features of Goel Pipes is our unique identification system. Each pipe comes with a unique identification number that allows for 100% traceability.

This number provides comprehensive details about the pipe, including material sourcing, coil number, and date of manufacturing. This traceability ensures that every pipe can be tracked back to its origins, providing full transparency and peace of mind to our customers.

STATE-OF-THE-ART QUALITY LAB.

QUALITY PUT TO THE TEST.

UNIVERSAL TESTING MACHINE

CAPACITY – **600 KN**

OPTICAL EMISSION SPECTROMETER

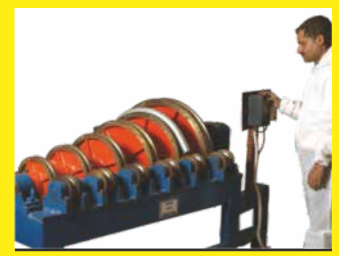
CAPACITY – **31 ELEMENT**

DEAD WEIGHT TESTER

CAPACITY – **1000 KG/CM2**

ROCKWELL HARDNESS TESTER

HRA | HRB | HRC



BEND TEST

CAPACITY – **0.5 Inch to 2 Inch**

DRIFT TEST

CAPACITY – **100 TON**

FLATTENING TEST

CAPACITY – **100 TON**

GI LAB

Uniformity Test | Adhesion Test | Free Bore Test
Determination of Mass of Zinc Coating

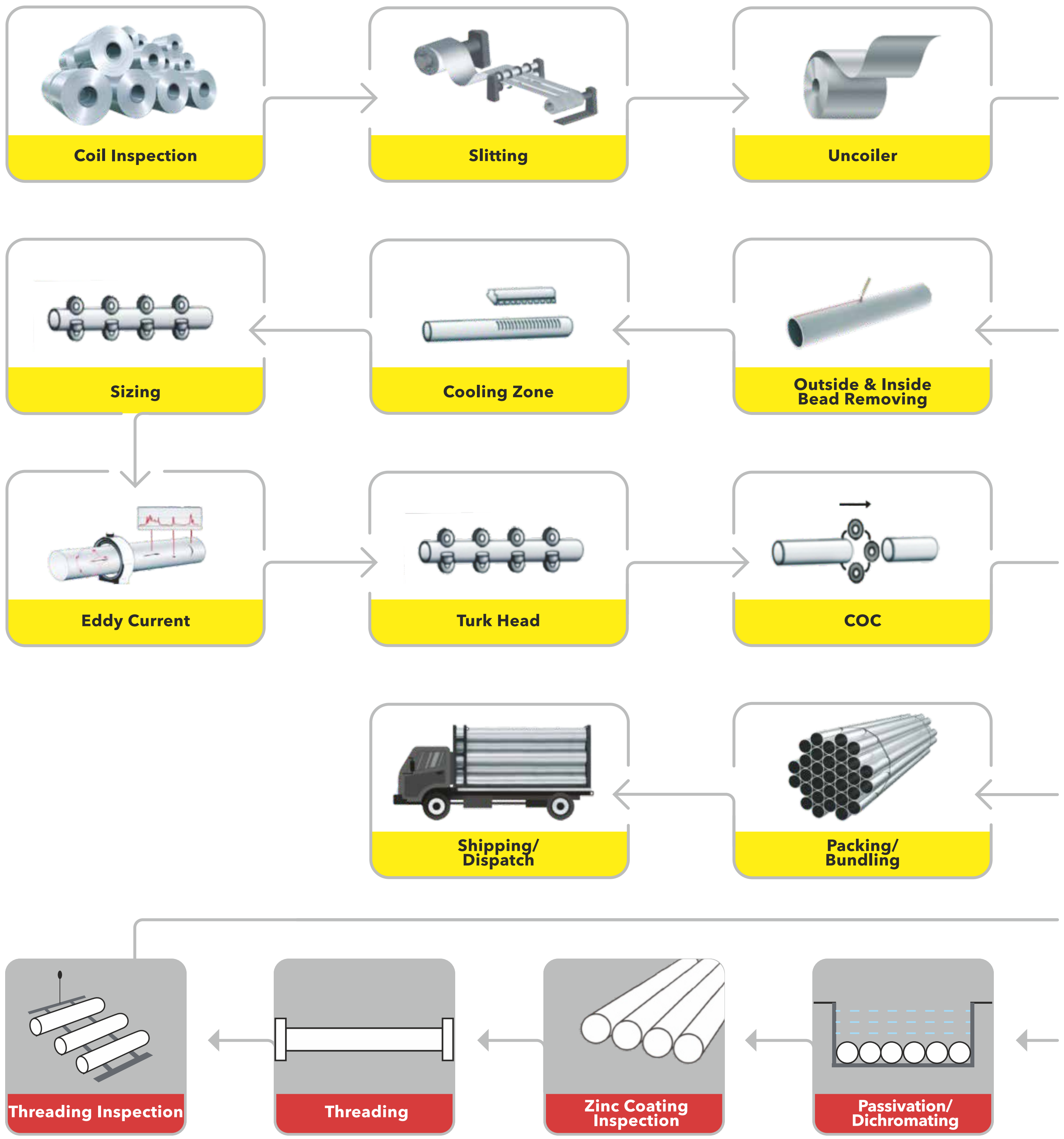
HYDRO TESTING MACHINE

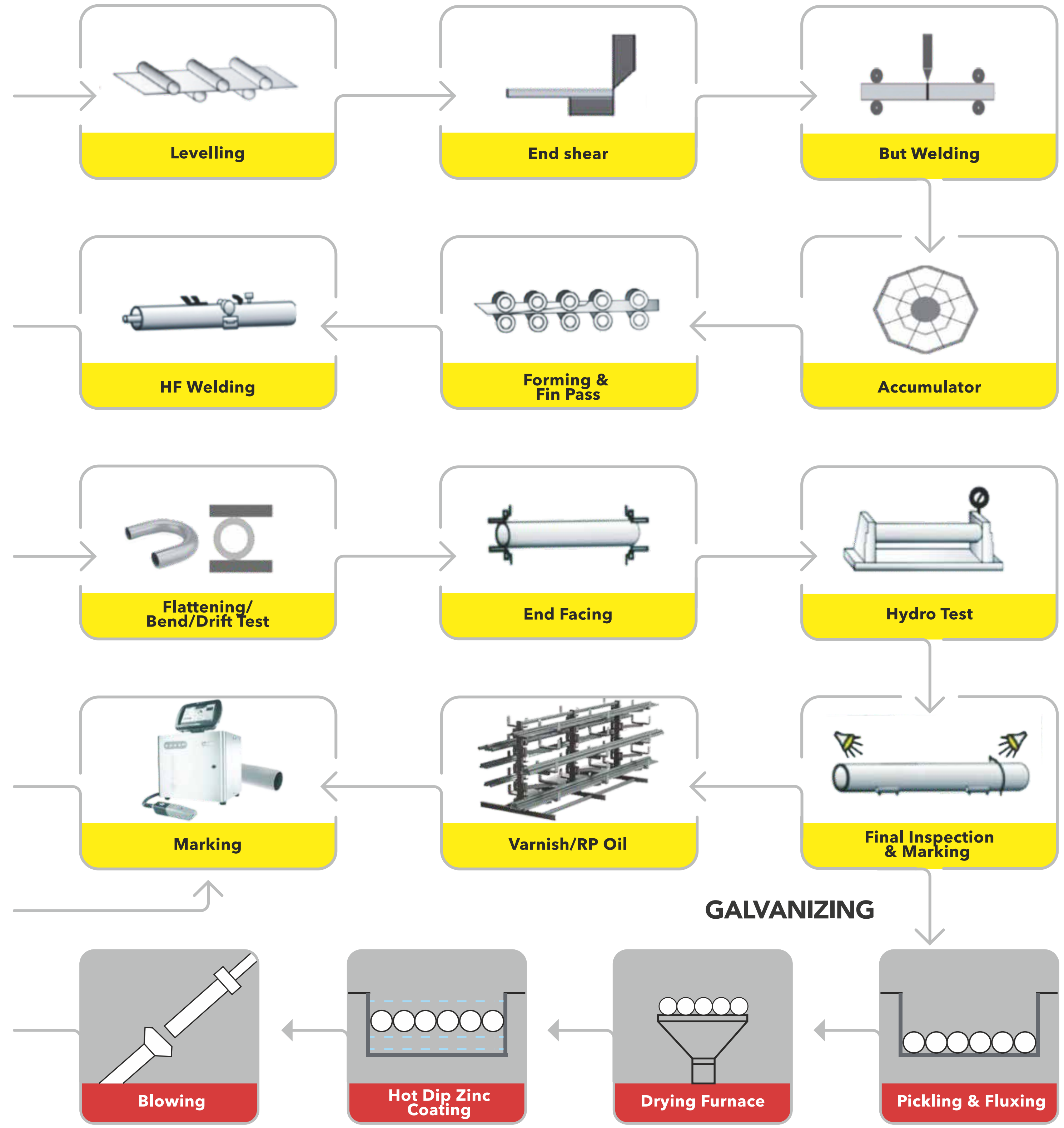
CAPACITY – **3000 PSI**

EDDY CURRENT TESTING

TYPE – **COIL TYPE**

ERW & GALVANIZING PIPE PROCESS FLOW CHART





PRODUCT APPLICATION

TRANSPORT WITH TRUST

WATER TRANSPORTATION

Water is our lifeline. Efficiently transporting water without any leakage or breakage is always a challenge. The Goel ERW (Electric Resistance Welded) pipes is a beacon of quality and durability attained through modern technology interventions. It can withstand high pressures due to its higher tolerance capacity. This makes Goel pipes low maintenance and cost effective.

PROTECTION THAT GOES DEEP

BOREWELLS

Borewells, especially its casings have to withstand tremendous side tensions caused by underground soil and rodent attack. Any breakage or leak in the borewell pipes can be catastrophic for consumers of underground water. Goel pipes have superior strength, durability and pressure tolerance. The Goel steel pipe casings are manufactured meeting the quality standards of IS 4270 which ensures longevity as well as a perfect fitting.

HIGH ENDURANCE FOR HYGIENE

SEWAGE SYSTEMS

Sewage pipes are the last walls of defense for the environment to shield against pollution and ensure a hygienic ecosystem. But most current solutions cannot promise endurance nor the ability to withstand extraordinary pressures and weight. The Goel ERW Steel Pipes are a blessing in disguise for sewage lines as they are long-lasting and highly durable. They can withstand high pressures and weight as they are a product of superior technology, helping Goel Pipes to conform as well as surpass global standards including IS 3589 from BIS.

LEAKPROOF FOR LIFE

AIR/STEAM LINES

Air and steam pipe lines need to ensure zero leakage during transmission. A unique chemical composition as well as Electrical Resistance Welding (ERW) ensures Goel Pipes to be 100% leakproof and highly durable. This guarantee will define the future of air and steam lines.

BUILT TO LAST

STRUCTURAL

Goel steel pipes are perfectly suited for a host of applications that support our rapid infrastructural growth. Be it for gardens, basement parking lots, building complexes or factory sheds to name a few. They are easy to weld, install and mould, being products of technologically advanced manufacturing processes. The pipes can be delivered in pre-fab aesthetic designs as well as can be painted using corrosion-free paints that ensure longevity as well as lower maintenance costs.

SUPERIOR QUALITY TO KEEP PRODUCTION ROLLING

CONVEYOR BELTS

The steel pipes that form the base of conveyor belts in factories and airports to name a few, endure constant stress and weight resulting in ruptures and malfunctions. Goel Pipes are specially designed and are run through multiple quality tests to ensure durability, longevity and endurance. This results in high efficiency and low maintenance costs.

MACHINERY MADE PERFECT

MECHANICAL PURPOSES

Strength, stability and high functionality are the hallmarks of Goel ERW steel pipes. Ideal for fabricators as well as for manufacturing processes, the Goel ERW steel pipes are technologically advanced making them relevant across a host of mechanical purposes like in plant and machinery, manufacturing equipment, production of bicycles, scooters and other automotive counterparts. Quality and durability aids in their usage across multiple mechanical domains.

QUALITY REIGNS SUPREME

In the world of Goel Pipes, quality is non-negotiable. Each and every product undergoes stringent quality checks and processes that ensure a superior output. The fierce obsession to quality results in all products bearing global and national quality certifications. BIS is a norm and all manufacturing process audits bear ISO accreditations. Goel Pipes will define the new breed of industrial products coming out of India that sets global quality benchmarks.

Goel tubes are manufactured using top of the line 100% HR coils sourced from the best in the industry. Material test and guarantee certificates offer customers many layers of protection and a mind free from apprehensions. Investing in Goel Pipes is a guarantee certificate for longevity and reliability.

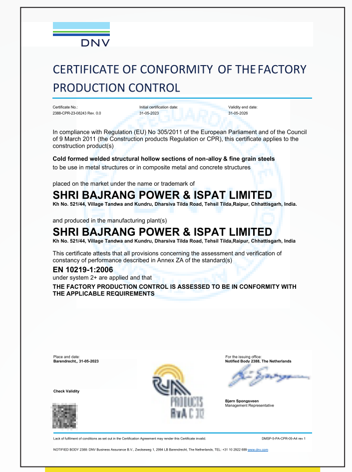
A quick look at our major clients and brand approvals:

APGENCO
एनटीपीसी NTPC
पी डी आई एल PDIL
पावरग्रिड POWERGRID
MMRC
महा मेट्रो
एन एम डी सी NMDC
CMRL
EIL A Navratna Company
TSGENCO
CSIDC
इंडियनऑयल IndianOil
CPWD

Accreditations:


QUALITY COMPLIANCE CERTIFICATION INDIA LLP
CERTIFICATE OF COMPLIANCE
SHRI BAJRANG POWER AND ISPAT LIMITED

UL CERTIFICATE


DNV
CERTIFICATE OF CONFORMITY OF THE FACTORY PRODUCTION CONTROL
SHRI BAJRANG POWER & ISPAT LIMITED

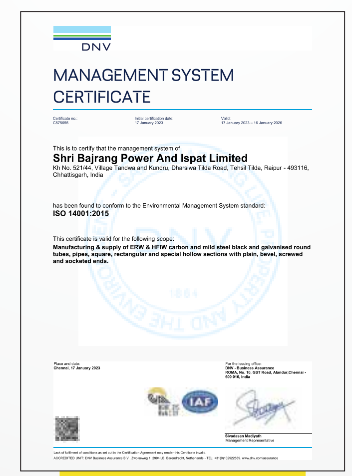
CE CERTIFICATE (EN-10219)


DNV
CERTIFICATE OF FACTORY PRODUCTION CONTROL

CE CERTIFICATE (EN-10255)


DNV
MANAGEMENT SYSTEM CERTIFICATE
Shri Bajrang Power And Ispat Limited
ISO 9001:2015

ISO 9001:2015

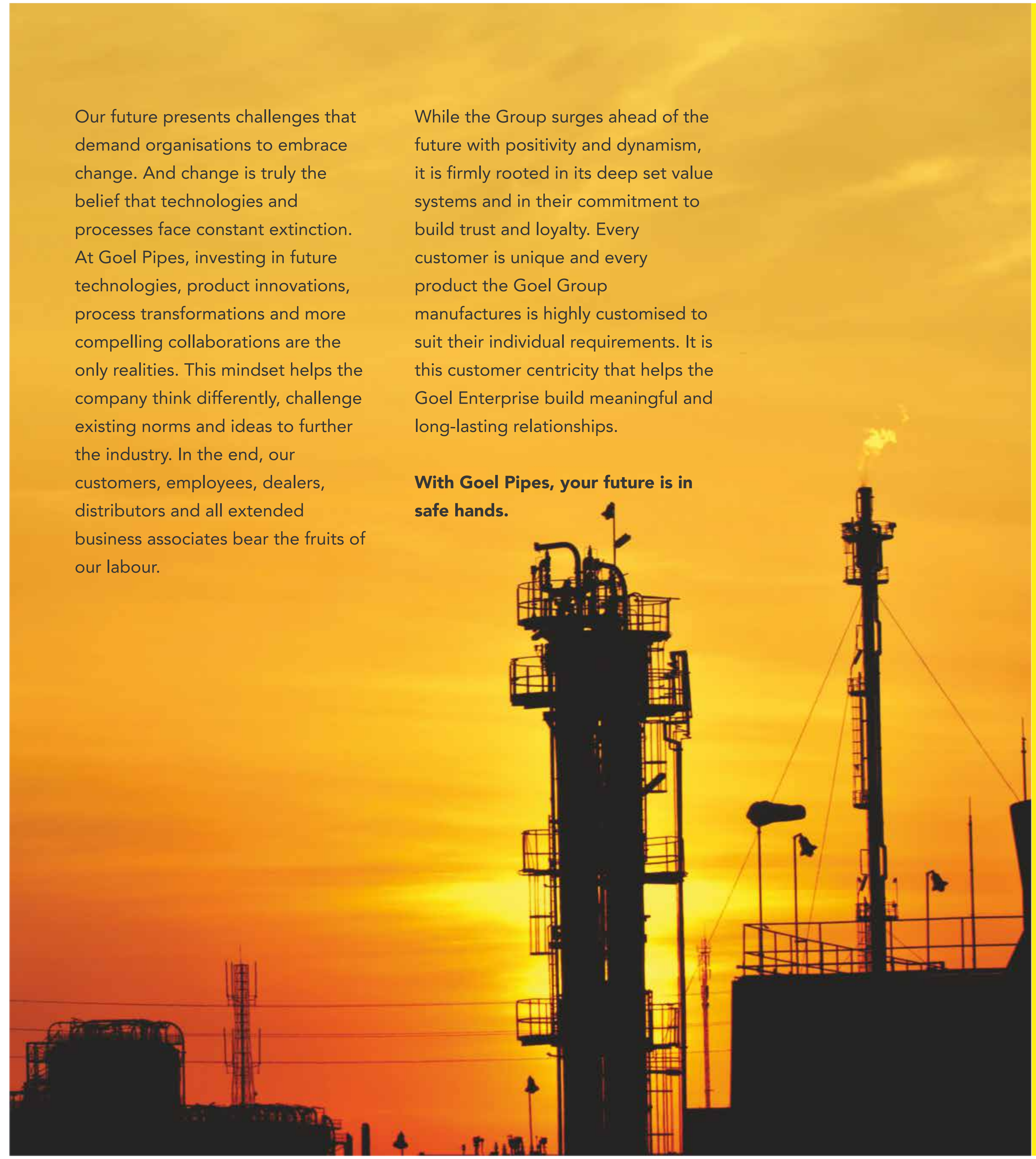

DNV
MANAGEMENT SYSTEM CERTIFICATE
Shri Bajrang Power And Ispat Limited
ISO 14001:2015

ISO 14001:2015


DNV
MANAGEMENT SYSTEM CERTIFICATE
Shri Bajrang Power And Ispat Limited
ISO 45001:2018

ISO 45001:2018

TRANSCENDING TECHNOLOGIES. TOWARDS A RELIABLE FUTURE.



Our future presents challenges that demand organisations to embrace change. And change is truly the belief that technologies and processes face constant extinction. At Goel Pipes, investing in future technologies, product innovations, process transformations and more compelling collaborations are the only realities. This mindset helps the company think differently, challenge existing norms and ideas to further the industry. In the end, our customers, employees, dealers, distributors and all extended business associates bear the fruits of our labour.

While the Group surges ahead of the future with positivity and dynamism, it is firmly rooted in its deep set value systems and in their commitment to build trust and loyalty. Every customer is unique and every product the Goel Group manufactures is highly customised to suit their individual requirements. It is this customer centricity that helps the Goel Enterprise build meaningful and long-lasting relationships.

With Goel Pipes, your future is in safe hands.

GOEL PIPES
सालों साल बेमिसाल

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