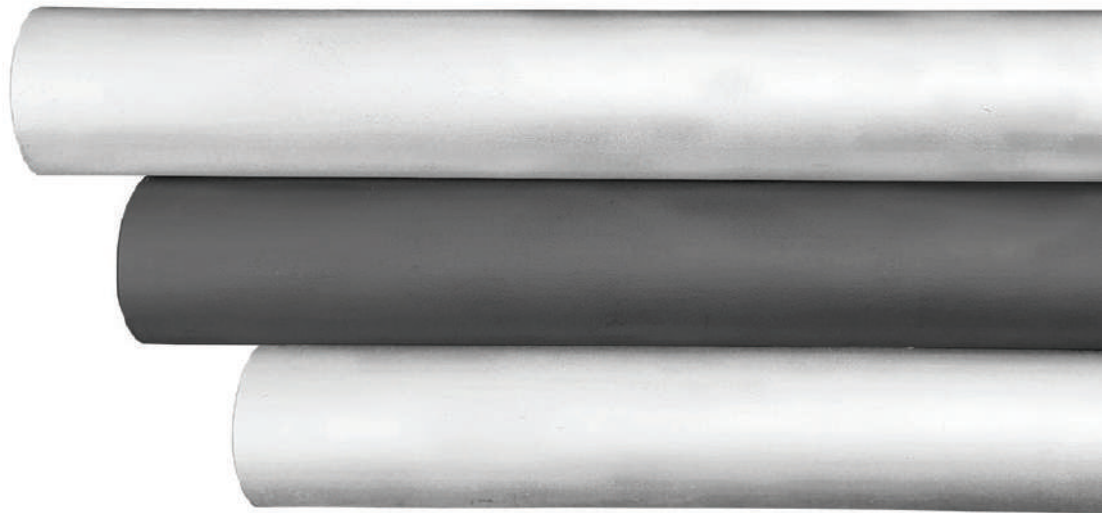


ELECTRIC-RESISTANCE WELDED (ERW) STEEL PIPES

BS EN 10255:2004



Updated on: 2026.03.23

HAH

HAH ELECTRIC-RESISTANCE WELDED (ERW) STEEL PIPES

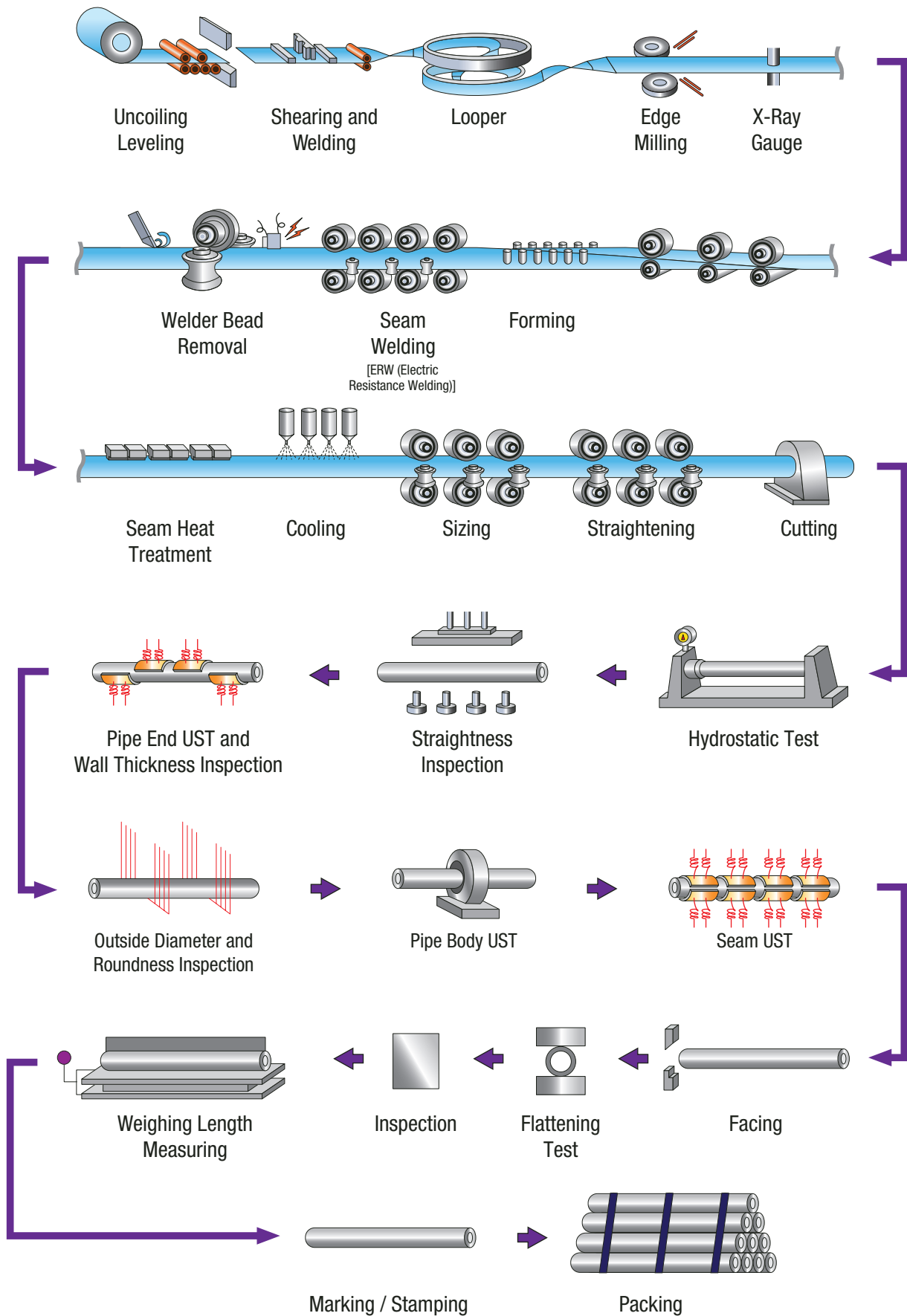
HAH steel pipes are manufactured in compliance to international standards. Using advance machinery, equipments and testing facilities under the strict supervision of dedicated engineers, ensuring pipes produced has uniform strength throughout its length without any distortion. Strict adherence to standards and quality control ensures that the products are of superb quality and consistency.

A typical manufacturing process starts with the slitting of steel coils lengthwise in the pre-determined size. It will then be guided through forming machines to form round or square, conduit tubes/pipes, welded to make various sizes of pipes and cut into desired lengths, usually 6 metres long. The ends of the pipes are then faced to remove the burs. The pipes will be tested at random in accordance with the specified international standard procedures.

At this stage, the finished pipes are called "Black Pipes". If galvanization is needed, the black pipes will have to go through the picking process to clean before being forwarded to galvanizing plants to be coated with zinc. The end of the galvanized pipes may be threaded, marked, socketed one end and equipped with plastic caps on the other end. Galvanized pipes that are not threaded are called "Plain Ends" pipes. The finished products will later be packed in bare bundles and deliver to customers.



MANUFACTURING PROCESS



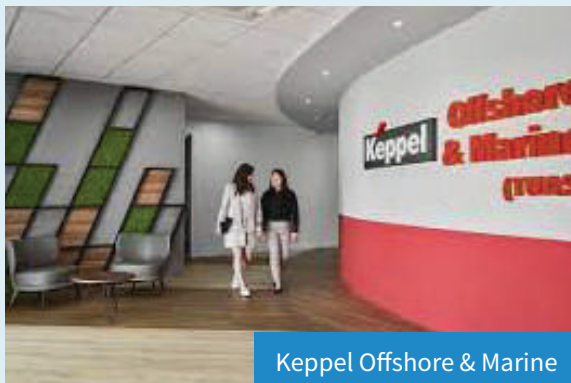
Project Reference

Our Steel Pipe System are seen applied in these various project references:



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TECHNICAL INFORMATION FOR WELDED STEEL TUBES

BS EN 10255:2004

Chemical Composition

The chemical composition of the steel, by ladle analysis, shall be as below:

C max.	Mn max.	P max.	S max.
0.20%	1.4%	0.035%	0.030%

Mechanical Properties

The Mechanical properties at room temperature shall be shown as below:

Tensile Strength (N/mm	: 320 to 520
Yield Strength (N/mm	: 195 min
Elongation	: 20% min

Tolerances on Dimensions & Mass

Outside Diameter (OD)	: As shown in Table 1 and Table 2
Wall Thickness (t)	: Medium and heavy tubes $\pm 10\%$
Mass	: $\pm 7.5\%$ on bundles of 10 tons or more, for M and H series

Hot-Dip Galvanizing Test

Galvanized to EN ISO 1461

Local Coating Thickness = 55 μ m min

Mean Coating Thickness = 70 μ m min

Bend Test

The bend test shall be applied to bare tubes with specified outside diameters (D) of 17.2mm up to and including 60.3mm and shall be carried out in accordance with EN 10232 to an angle of 90°.

The tubes shall show no cracks visible without magnifying aids.

Flattening Test

The flattening test shall be applied to bare tubes with specified outside diameters (D) greater than 60.3mm and shall be carried out in accordance with EN 10233.

Welded tubes shall be flattened with the weld placed alternatively at 0 or 90° (12 or 3 o'clock) to the direction of the flattening.

The tube shall be flattened between parallel flat platens without showing either crack or flaw visible until the distance between the platens, measured under load, reaches 75% of original OD of the tube. Further flattening, no cracks or flaws in the metal elsewhere than in the weld shall occur until the distance between the platens, measured under load, reaches 60% of original OD.

Leak Tightness Test

The test shall be either a hydraulic test at a pressure of 50 bar for at least 5 seconds (50 x 10 or alternatively, an electro-magnetic test in according with EN 10246-1.

TECHNICAL INFORMATION FOR WELDED STEEL TUBES

BS EN 10255-2004 (FORMERLY BS 1387:1985)

Description

The welded steel tubes are classified in 2 series of thickness :- medium & heavy.
Available in Black, Primer Coated or Hot-Dipped Galvanised finished.

Application

For normal conveyance of water, steam, air, gas etc.

Identification Marking

Medium Tubes - Blue Heavy Tubes - Red

Welded Steel Pipe Dimension, Diameter Tolerance And Mass Per Unit Length

Table 1 - Medium Series (B)

Normal Size		Outside Diameter				Wall Thickness		Wt. of Black or Red Oxide Painted Pipes	Wt. Of Gal. Pipes (Calculated)	# Of Lgth
		Max		Min						
Inch	mm	Inch	mm	Inch	mm	Inch	mm	kg/m	kg/m	
½	15	0.854	21.8	0.831	21.0	0.102	2.60	1.21	1.25	140
¾	20	1.071	27.3	1.047	26.5	0.102	2.60	1.56	1.62	113
1	25	1.346	34.2	1.315	33.3	0.124	3.20	2.41	2.49	70
1¼	32	1.689	42.9	1.657	42.0	0.124	3.20	3.10	3.20	61
1½	40	1.921	48.8	1.890	47.9	0.124	3.20	3.56	3.68	48
2	50	2.394	60.8	2.354	59.7	0.142	3.60	5.03	5.17	37
2½	65	3.016	76.6	2.969	75.3	0.142	3.60	6.42	6.61	24
3	80	3.524	89.5	3.469	88.0	0.157	4.00	8.36	8.58	19
4	100	4.524	115.0	4.461	113.1	0.177	4.50	12.20	12.48	12
5	125	5.535	140.8	5.461	138.5	0.197	5.00	16.60	16.94	7
6	150	6.539	166.5	6.461	163.9	0.197	5.00	19.80	20.10	7

Table 2 - Heavy Series (C)

Normal Size		Outside Diameter				Wall Thickness		Wt. of Black or Red Oxide Painted Pipes	Wt. Of Gal. Pipes (Calculated)	# Of Lgth
		Max		Min						
Inch	mm	Inch	mm	Inch	mm	Inch	mm	kg/m	kg/m	
½	15	0.854	21.8	0.831	21.0	0.124	3.20	1.44	1.49	140
¾	20	1.071	27.3	1.047	26.5	0.124	3.20	1.87	1.93	113
1	25	1.346	34.2	1.315	33.3	0.157	4.00	2.93	3.01	70
1¼	32	1.689	42.9	1.657	42.0	0.157	4.00	3.79	3.90	61
1½	40	1.921	48.8	1.890	47.9	0.157	4.00	4.37	4.49	48
2	50	2.394	60.8	2.354	59.7	0.177	4.50	6.19	6.33	37
2½	65	3.016	76.6	2.969	75.3	0.177	4.50	7.93	8.11	24
3	80	3.524	89.5	3.469	88.0	0.197	5.00	10.30	10.51	19
4	100	4.524	115.0	4.461	113.1	0.213	5.40	14.50	14.77	12
5	125	5.535	140.8	5.461	138.5	0.213	5.40	17.90	18.21	7
6	150	6.539	166.5	6.461	163.9	0.213	5.40	21.30	21.68	7

TECHNICAL INFORMATION FOR WELDED STEEL TUBES

BS EN 10220-2002 (ASTM A53)

Welded Steel Pipe Dimension And Mass Per Unit Length

Table 3 - BS EN 10220-2002 (ASTM A53)

Nominal Size		Outside Diameter		Wall Thickness	Mass Per Unit Length Of Bare Tube (Plain End)
Inch	mm	Inch	mm	mm	kg/m
8	200	8.625	219.1	5.6	29.50
10	250	10.750	273.0	5.6	36.90
12	300	12.750	323.9	6.3	49.30
14	350	14.000	355.6	7.1	61.00
16	400	16.000	406.4	8.0	78.60
18	450	18.000	457.0	8.0	88.60
20	500	20.000	508.0	8.8	108.00
24	600	24.000	610.0	8.8	130.00

METHOD OF CALCULATING MASSES PER UNIT LENGTH

The masses per unit length given in Table 3 have been calculated from outside diameter D and wall thickness T to at least five significant figures, using the formula given below. They have been rounded to three significant figures for values of less than 100 and to the nearest whole number for larger values.

$$M = (D - T) T \times 0.0246615^{(1)} \text{ kg/m}$$

where

M is the mass per unit length in kg/m

D is the specified outside diameter in mm and

T is the specified wall thickness in mm

The calculated values may also be applied to tubes with different density values, but have then to be multiplied by a factor of

- 1.015 for austenitic stainless steel⁽²⁾

- 0.985 for ferritic and martensitic stainless steel⁽³⁾

Note: EN 10088-1 provides distinguished density values for various groups of stainless steel grades which may be used for calculating purposes.

⁽¹⁾ This factor is based on a density of 7.85 kg/dm³

⁽²⁾ This factor is based on a density of 7.97 kg/dm³

⁽³⁾ This factor is based on a density of 7.73 kg/dm³

ERW / SEAMLESS PIPES TO API 5L/ASTM A53/A106 GR.B

Nominal Size		Outside Diameter	SCH No.	Wall	
mm	inch			Thickness	Plain Ends
		mm		mm	Kg/m
15	1/2"	21.3	40	2.77	1.27
			80	3.73	1.62
20	3/4"	26.7	40	2.87	1.68
			80	3.91	2.19
25	1"	33.4	40	3.38	2.50
			80	4.55	3.32
32	1 1/4"	42.2	40	3.56	3.38
			80	5.08	4.47
40	1 1/2"	48.3	40	3.68	4.05
			80	4.85	5.41
50	2"	60.3	40	3.91	5.44
			80	5.54	7.48
65	2 1/2"	73	40	5.16	8.62
			80	7.01	11.41
80	3"	88.9	40	5.49	11.41
			80	7.62	15.27
100	4"	114.3	40	6.02	16.07
			80	8.56	22.31
125	5"	141.4	40	6.55	21.76
			80	9.25	30.94
150	6"	168.3	40	7.11	28.26
			80	10.97	42.56
200	8"	219.1	40	8.18	42.53
			80	12.70	64.63
250	10"	273	40	9.27	60.29
			80	15.08	95.97
300	12"	323.8	Standard wall / 40	9.52 / 10.31	73.78 / 79.72
			80	17.48	132.01
350	14"	355.6	40	11.13	94.49
			80	19.05	158.08
400	16"	406.4	40	12.70	123.27
			80	21.40	203.48
450	18"	457.2	40	14.27	155.91
			80	23.83	254.59
500	20"	508	40	12.70	151.10
			80	20.62	247.85
550	22"	558.8	40	22.22	294.04
			80	28.58	373.58
600	24"	609.6	40	14.27	209.54
			80	27.48	255.14

Table 2

CARBON STEEL PIPES FOR ORDINARY PIPING

Nominal Dia		Outside Dia	Tolerance on Outside Dia		Wall Thickness	Tolerance on Wall Thickness	Unit weight of Plain Ends
mm	in	mm	Taper Threaded	Plain End	mm		kg/m
200	8	216.3	± 1.0mm	± 0.8%	5.8	+ not specified -12.5%	30.1
250	10	267.4	± 1.3mm	± 0.8%	6.6		42.4
300	12	318.5	± 1.5mm	± 0.8%	6.9		53.0
350	14	355.6	-	± 0.8%	7.9		67.7
400	16	406.4	-	± 0.8%	7.9		77.6
450	18	457.2	-	± 0.8%	7.9		87.5
500	20	508.0	-	± 0.8%	7.9		97.4

JIS G 3452 : 1997

Our Custom Services



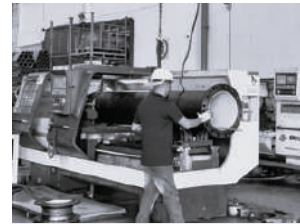
Welding



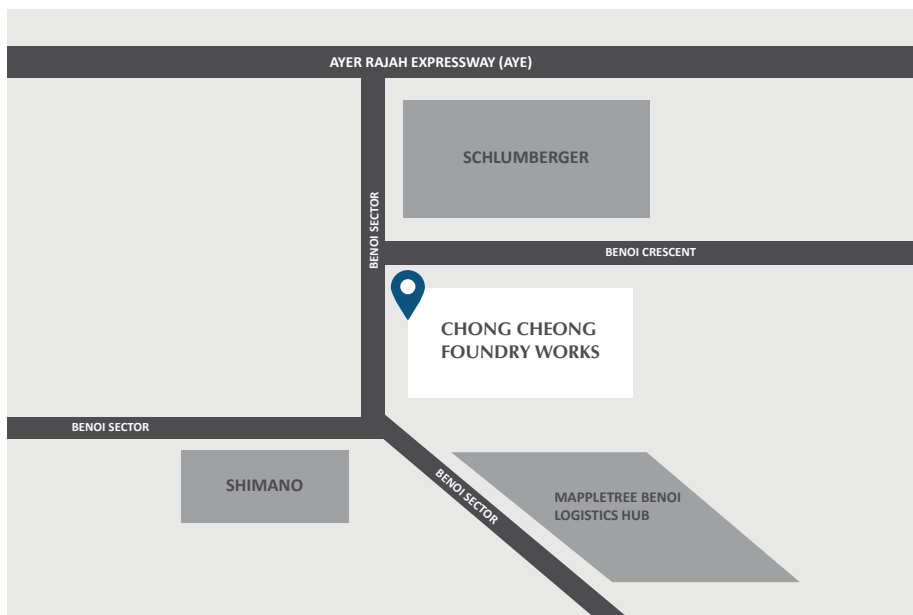
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CNC Milling Machine



Pipe Threading



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