

# SeAH Steel

SEAH STEEL VINA CORPORATION PIPES To

British Standard

**BS EN 10255**

**BS EN 10217**





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# Brief History

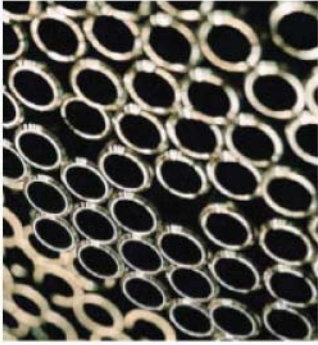

SeAH Steel Vina Corporation is a steel pipe manufacturer in Vietnam and is fully owned by South Korea's SeAH Steel Corporation. SeAH Steel Vina is equipped with the largest production capacity in Vietnam and plays an important role in Vietnam's economic development as a leader in the steel pipe industry, a mainstay of national infrastructure.

Innovation continues to perfect production quality to produce products of the world's best quality. Its research and development centre has developed API material with POSCO. SeAH Steel Vina is committed to customer satisfaction, understanding and the fulfillment of customer's needs, and maintaining high levels of innovation and quality assurance.






- Aug. 1995:** Obtained the investment license from SCCI
- May 1999:** Started the operation of production lines
- Nov. 1999:** Exported to Japan at the first steel company in Vietnam
- Feb. 2001:** Obtained the Quality Management System. ISO 9001:2000 version
- Dec. 2004:** Finished of Company restructuring Legal Capital is \$11,747,470
- Jun. 2005:** Participated the VN-International exhibition and received 2 Golden Prizes of ERW pipe (Black & Galvanized)
- Dec. 2005:** SeAH Steel Corp. have 100% invested company
- July 2006:** Exported to USA as the first steel company in Vietnam
- July 2006:** Awarded a Gold Medal of the best trusted enterprises in construction material
- Sep. 2006:** Awarded a golden cup of the best brand name in construction scope
- Oct. 2006:** Get the adjustment certificate for investment license with new name, SeAH Steel Vina Corp.
- Sep. 2007:** Awarded a Gold Medal of Construction Trademark by Ministry of Construction
- Dec. 2007:** Awarded a Gold Medal of trusted-prestige brand, quality products by Ministry of Industry and Trade
- Dec. 2008:** Awarded Top 40 foreign-invested by MPI
- Dec. 2008:** Awarded Top 100 brands influence Vietnam market
- Dec. 2009:** Started the operation of 8" API mill line
- Apr. 2010:** Obtained the API Monogram No.5L-0764 and 5CT-1139
- Oct. 2010:** Obtained the UL Authorized License for Metallic Sprinkler Pipe
- Jan. 2011:** Awarded Golden Dragon Certificate For High Quality Product
- May 2011:** Obtained the FM Approvals License for schedule 10 Steel Sprinkler Pipe



# Main Products

	<p>Ordinary Piping</p> <ul style="list-style-type: none"> <li>• Black and galvanized steel pipes</li> <li>• Heat Ventilation and Air Conditioning Systems (HVAC)             <ul style="list-style-type: none"> <li>- Chilled water pipe systems</li> <li>- Condenser water pipe systems</li> <li>- Condensate drain pipes</li> </ul> </li> <li>• Fire Services             <ul style="list-style-type: none"> <li>- Riser, down feed for fire hydrant and sprinkler systems</li> </ul> </li> <li>• Cable ducting</li> <li>• ERW size availability from 3/8" to 8" for British Standard</li> </ul>
	<p>API Line pipe and oil country tubular goods</p> <ul style="list-style-type: none"> <li>• Line pipe, high test line pipe, casing and tubings</li> <li>• For use conveying gas, water and oil, in producing operation in both oil and natural gas industries</li> </ul>

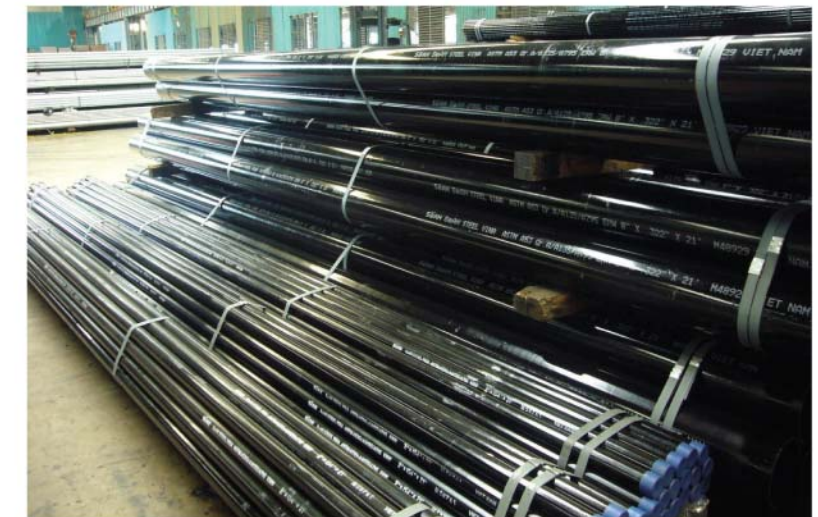
# Approved Certifications

<p><b>API</b></p>  <ul style="list-style-type: none"> <li>• Line Pipe (API 5L)</li> <li>• Casing and Tubing (API Spec 5CT)</li> </ul>	<p><b>UL</b></p>  <ul style="list-style-type: none"> <li>• Metallic Sprinkler Pipe</li> </ul>
<p><b>FM</b></p>  <ul style="list-style-type: none"> <li>• Schedule 10 steel sprinkler pipe</li> </ul>	<p><b>ISO</b></p>  <ul style="list-style-type: none"> <li>• ISO 9001:2008 (ERW Pipe)</li> </ul>
<p><b>DNV</b></p>  <ul style="list-style-type: none"> <li>• ERW Steel Tubes and Pipes</li> </ul>	

# Galvanized Iron & Black Steel Pipe suitable for welding & threading BS EN 10255

Table 2 - Dimensions, diameter tolerance and mass per unit length

Nominal size		Specified outside diameter	Outside diameter		H			M		
					Heavy series			Medium series		
					Wall thickness	Mass per unit length of bare tube		Wall thickness	Mass per unit length of bare tube	
T	Plain end	Socketed	T	Plain end		Threaded and socketed				
(mm)	(in.)	(mm)	(mm)	(mm)	(mm)	(kg/m)	(kg/m)	(mm)	(kg/m)	(kg/m)
6	1/8	10.2	10.6	9.8	2.6	0.487	0.490	2.0	0.404	0.407
8	1/4	13.5	14.0	13.2	2.9	0.765	0.769	2.3	0.641	0.645
10	3/8	17.2	17.5	16.7	2.9	1.02	1.03	2.3	0.839	0.845
15	1/2	21.3	21.8	21.0	3.2	1.44	1.45	2.6	1.21	1.22
20	3/4	26.9	27.3	26.5	3.2	1.87	1.88	2.6	1.56	1.57
25	1	33.7	34.2	33.3	4.0	2.93	2.95	3.2	2.41	2.43
32	1 1/4	42.4	42.9	42.0	4.0	3.79	3.82	3.23	3.10	3.13
40	1 1/2	48.3	48.8	47.9	4.0	4.37	4.41	3.2	3.56	3.60
50	2	60.3	60.8	59.7	4.5	6.19	6.26	3.6	5.03	5.10
65	2 1/2	76.1	76.6	75.3	4.5	7.93	8.05	3.6	6.42	6.54
80	3	88.9	89.5	88.0	5.0	10.3	10.5	4.0	8.36	8.53
100	4	114.3	115.0	113.1	5.4	14.5	14.8	4.5	12.2	12.5
125	5	139.7	140.8	138.5	5.4	17.9	18.4	5.0	16.6	17.1
150	6	165.1	166.5	163.9	5.4	21.3	21.9	5.0	19.8	20.4



Nominal size		Specified outside diameter	Outside diameter		L			Outside diameter		L1			Outside diameter		L2		
					Light series					Light series (L1)					Light series (L2)		
					Wall thickness	Mass per unit length of bare tube				Wall thickness	Mass per unit length of bare tube				Wall thickness	Mass per unit length of bare tube	
T	Plain end	Threaded and socketed	T	Plain end		Threaded and socketed	T	Plain end	Threaded and socketed								
(mm)	(in.)	(mm)	(mm)	(mm)	(mm)	(kg/m)	(kg/m)	(mm)	(mm)	(mm)	(kg/m)	(kg/m)	(mm)	(mm)	(mm)	(kg/m)	(kg/m)
8	1/4	13.5	13.9	13.2	2.0	0.567	0.571	13.9	13.2	2.0	0.570	0.574	13.6	13.2	1.8	0.515	0.519
10	3/8	17.2	17.4	16.7	2.0	0.750	0.756	17.4	16.7	2.0	0.742	0.748	17.1	16.7	1.8	0.670	0.676
15	1/2	21.3	21.7	21.0	2.3	1.08	1.09	21.7	21.0	2.3	1.08	1.09	21.4	21.0	2.0	0.947	0.956
20	3/4	26.9	27.1	26.4	2.3	1.40	1.41	27.1	26.4	2.3	1.39	1.40	26.9	26.4	2.3	1.38	1.39
25	1	33.7	34.0	33.2	2.9	2.20	2.22	34.0	33.2	2.9	2.20	2.22	33.8	33.2	2.6	1.98	2.00
32	1 1/4	42.4	42.7	41.9	2.9	2.82	2.85	42.7	41.9	2.9	2.82	2.85	42.5	41.9	2.6	2.54	2.57
40	1 1/2	48.3	48.6	47.8	2.9	3.25	3.29	48.6	47.8	2.9	3.24	3.28	48.4	47.8	2.9	3.23	3.27
50	2	60.3	60.7	59.6	3.2	4.51	4.58	60.7	59.6	3.2	4.49	4.56	60.2	59.6	2.9	4.08	4.15
65	2 1/2	76.1	76.0	75.2	3.2	5.75	5.87	76.3	75.2	3.2	5.73	5.85	76.0	75.2	3.2	5.71	5.83
80	3	88.9	88.7	87.9	3.2	6.76	6.93	89.4	87.9	3.6	8.55	7.72	88.7	87.9	3.2	6.72	6.89
100	4	114.3	113.9	113.0	3.6	9.83	10.10										
125	5	139.7	140.8	138.5	4.5	15.0	15.5										
150	6	165.1	166.5	163.9	4.5	17.8	18.4										

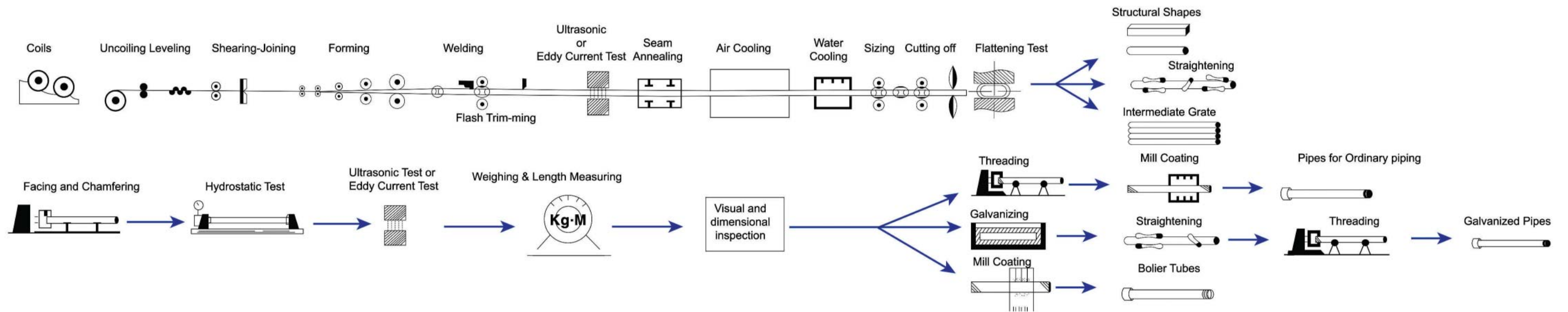
# Available Size (Dimension and Weights) and Manufacturing Process

BS EN 10217-1 Welded steel tubes for pressure purposes Part 1: Non-alloy steel tubes with specified room temperature properties

(1) Available Size (Dimension and Weights)

Nominal Size mm	Outside Diameter mm	Thickness (mm)													Thickness (mm)														
		1.6	1.8	2.0	2.3	2.6	2.9	3.2	3.6	4.0	4.5	5.0	5.4	5.6	5.9	6.3	7.1	8.0	8.8	10.0	11.0	12.5	14.2	16.0	17.5	20.0	22.2	25.0	
		Mass Per Unit Length (kg/m)													Mass Per Unit Length (kg/m)														
20	26.9			1.23	1.40	1.56	1.72	1.87	2.07	2.26	2.49																		
25	33.7			1.56	1.78	1.99	2.20	2.41	2.67	2.93	3.24	3.54	3.77	3.88	4.04	4.26													
32	42.4		1.80	1.99	2.27	2.55	2.82	3.09	3.44	3.79	4.21	4.61	4.93	5.08	5.31	5.61													
40	48.3	1.84	2.06	2.28	2.61	2.93	3.25	3.56	3.97	4.37	4.86	5.34	5.71	5.90	6.17	6.53	7.21												
50	60.3			2.88	3.29	3.70	4.11	4.51	5.03	5.55	6.19	6.83	7.31	7.55	7.92	8.39	9.32	10.3	11.2										
65	76.1			3.65	4.19	4.71	5.24	5.75	6.44	7.11	7.95	8.77	9.42	9.74	10.2	10.8	12.1	13.4	14.6	16.3									
80	88.9				4.91	5.53	6.15	6.76	7.57	8.38	9.37	10.3	11.1	11.5	12.1	12.8	14.3	16.0	17.4	19.5	21.1								
90*	101.6*				5.63	6.35	7.06	7.77	8.70	9.63	10.8	11.9	12.8	13.3	13.9	14.8	16.5	18.5	20.1	22.6	24.6								
100	114.3				6.35	7.16	7.97	8.77	9.83	10.9	12.2	13.5	14.5	15.0	15.8	16.8	18.8	21.0	22.9	25.7	28.0	31.4							
125	139.7							10.80	12.10	13.4	15.0	16.6	17.9	18.5	19.5	20.7	23.2	26.0	28.4	32.0	34.9	39.2							
150	168.3							13.00	14.60	16.2	18.2	20.1	21.7	22.5	23.6	25.2	28.2	31.6	34.6	39.0	42.7	48.0							
200	219.1									21.2	23.8	26.4	28.5	29.5	31.0	33.1	37.1	41.6	45.6	51.6	56.5	63.7	71.8	80.1					

\*The use of these size should be avoided whenever possible.



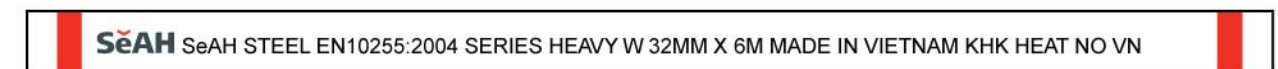
# List of Specification of ERW Tubes and Pipes

Standard Specification	Application	Chemical Requirement (%)					Physical Requirement			
		C Max	Mn Max	P Max	S Max	Others	Tensile Strength	Yield Strength Min.	Elongation (Min %)	Gauge Length (in)
EN10255	L	0.20	1.40	0.035	0.035	-	320~520 (N/mm <sup>2</sup> )	195	20	5.65 √A
	M	0.20	1.40	0.035	0.035	-	320~520 (N/mm <sup>2</sup> )	195	20	
	H	0.20	1.40	0.035	0.035	-	320~520 (N/mm <sup>2</sup> )	195	20	
EN10217-1	P195TR1	0.13	0.70	0.025	0.020	Si Max 0.35	320~440 (N/mm <sup>2</sup> )	16mm ≤ T, 195 16mm < T ≤ 40mm, 185	L-direction : 27 T-direction : 25	5.65 √A
	P195TR2	0.13	0.70	0.025	0.020	Si Max 0.35	320~440 (N/mm <sup>2</sup> )	16mm ≤ T, 195 16mm < T ≤ 40mm, 185	L-direction : 27 T-direction : 25	
	P235TR1	0.16	1.20	0.025	0.020	Si Max 0.35	360~500 (N/mm <sup>2</sup> )	16mm ≤ T, 235 16mm < T ≤ 40mm, 225	L-direction : 25 T-direction : 23	
	P235TR2	0.16	1.20	0.025	0.020	Si Max 0.35	360~500 (N/mm <sup>2</sup> )	16mm ≤ T, 235 16mm < T ≤ 40mm, 225	L-direction : 25 T-direction : 23	
	P265TR1	0.20	1.40	0.025	0.020	Si Max 0.40	410~570 (N/mm <sup>2</sup> )	16mm ≤ T, 265 16mm < T ≤ 40mm, 255	L-direction : 21 T-direction : 19	
	P265TR2	0.20	1.40	0.025	0.020	Si Max 0.40	410~570 (N/mm <sup>2</sup> )	16mm ≤ T, 265 16mm < T ≤ 40mm, 255	L-direction : 21 T-direction : 19	
ASTM A53	A	0.25	0.95	0.050	0.060	-	Min 48,000 psi (33.8kg/mm <sup>2</sup> )	Min 30,000 psi (21.1kg/mm <sup>2</sup> )	$e = 625000 \times \frac{A^{0.02}}{U^{0.9}}$	2
	B	0.30	1.20	0.050	0.060	-	Min 60,000 psi (42.2kg/mm <sup>2</sup> )	Min 35,000 psi (24.6kg/mm <sup>2</sup> )	$e = 625000 \times \frac{A^{0.02}}{U^{0.9}}$	2
Standard Specification	Flattening Test		Bend Test		Hyrostatic Test		Non-Destructive Test and Other Inspections			
	H = Distance between Exterior Surfaces H <sup>1</sup> = Distance between Interior Surfaces D = Outside Diameter ID = Inside Diameter		Angle x Inner Radius		P = Test Pressure (psi) S = Allowable Fiber Stress (psi)					
EN10255	Applicable to O.D. > 60.3MM Welded Part : 0.75 x O.D. Body Part : 06 x O.D.		Tested only for O.D. ≤ 60.3mm		Min. 50 bar or NDT					
EN10217-1	→ O.D. < 600mm, t/D ≤ 0.15 : at 0 or 90 deg. $H = \frac{(1+C)}{C+(T/D)} \times T$ where, H = height, D = O.D., T = W.T. C = 0.09 for P195 & P235, 0.07 for P265 → Either flattening or flaring test can be done for O.D. ≤ 150 & t ≤ 10mm products.				Hydrostatic test or NDT  Hydrostatic test shall be carried out Min. 70 bar or following equation P, whichever is lower $P = \frac{20 st}{D}$ (bar)  S = 0.70 x Yield Strength		ERW: ET OR UT SAW: UT OR RT			
ASTMA53	Apply for standard weight and extra strong pipe of NB > 2 in.		Apply for ≤ 2 in. Ungalvanized Tubes At cold 90° x 6D When order for close coiling 180° x 4D		Hydrostatic test shall be carried out following equation P $P = \frac{20 st}{D}$ (bar) S = 0.60 x Yield Strength  But, Maximum pressure is: NB ≤ 2 in. P = 2,500 psi NB > 3in. P = 2,800 psi		Each pipe shall be inspected by ultrasonic or electromagnetic methods * 6			
	Weld portion $H = \frac{2}{3} D$									
	The other side of Weld Portion $H = \frac{1}{3} D$									
	The test shall be made alternately with the weld at 0 deg. And at 90 deg.									

Standard Specification	Permissible Variations in Dimensions				Permissible Variations in Weight
	Outside Diameter	Wall Thickness	Length	Height of Inside Bead	
EN10255	Specified respectively in size	±10%	Standard Length Welded +150 / -50, SMLS +/- 500 Random Length: 10% can be below range, but none of these to be less than 3m long (0.75x4m minimum) Exact Length: L ≤ 6m +10 - 0 6 ≤ L ≤ 12m +15 - 0 L > 12m + by agreement -0	≤ 50% of wall thickness. For tubes to be galvanized, it should be no higher than 0.3mm + (0.05x wall thickness)	Single Lengths Standard, Regular, Extra-Strong Double Extra-Strong +10%, -3.5% Special Plain End +10%, -5% Carload Lots -1.75%
EN10217-1	D ≤ 219.1mm. ±1% or ±5mm, which ever is larger  D > 219.1mm. ±0.75% or ±6mm, which ever is smaller	t ≤ 5mm, ±10% (Min±0.3)  5mm < t ≤ 40mm, ±8% (Max±2mm)	D ≤ 406.4mm. → L ≤ 6M, -0/+10mm → 6M < L ≤ 12M, -0/+15mm → 12M < L, to be discussed with the customer  D ≤ 406.4mm. → L ≤ 6M, -0/+25mm → 6M < L ≤ 12M, -0/+50mm → 12M < L, to be discussed with the customer	ERW TR1: Max. 1.5mm TR2: 0.5mm+0.05t  SAW → Inside Bead W.T. ≤ 12.5mm, Max 3.5mm 12.5mm < W.T., Max 4.8mm → Outside Bead W.T. ≤ 12.5mm, Max 3.5mm 12.5mm < W.T., Max 4.8mm	Standard: Random length
ASTMA53	NB ≤ 1 1/2 in. +1/64 in. , -1/32 in. NB ≥ 2 in. ±1%	+Not specied -12.5%	-	-	±10% D ≤ 4 in. may be weighted in convenient lots. D > 4 in. shall be weighted separately

## Marking

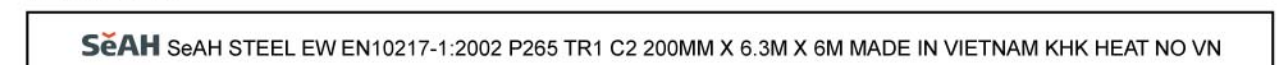
BS EN 10255



Colour Band:

Grade	Color
L	Green
L1	White
L2	Brown
Medium	Blue
Heavy	Red

BS EN 10217







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