EN10224 ERW steel tube

ERW steel tube is formed by rolling strip and welding the seam, with tighter dimensional tolerances and less weight. The weld seam is heat treated after welding that no untempered martensite remains, and the weld flash can be removed from both inner and outer surfaces.

EN10224 is a non-alloy steel tubes specification for the conveyance of water and other aqueous liquids. It is suitable for water lines (Cold & Hot), firefighting pipeline, HVAC lines, etc.

- Certificate: ISO
- Standard: EN 10224, electrical welded, or submerged arc weld, L235
- Length: 6m / 5.8m / 11.8m / 12m / 20ft, etc.
- End: Plain (square cut) / beveled to 30° / roll groove as ISO 6182-12 / BSPT thread as ISO 7-1 / NPT thread as ANSI B1.20.1
- Surface: Fusion bonded epoxy (FBE) / polyester resin / hot dip galvanized / red paint / black paint, etc.

Available size

Size			Thickness						Test pressure	Ref. No.
Inch	DN	OD (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	MPa	
3/4"	20	26.9	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0602
1"	25	33.7	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0603
1-1/4"	32	42.4	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0604
1-1/2"	40	48.3	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0605
2"	50	60.3	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0606
2-1/2"	65	76.1	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0607
3"	80	88.9	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0608
4"	100	114.3	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0609
5"	125	139.7	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0610
6"	150	168.3	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0611
8"	200	219.1	2.0	2.3	2.6	2.9	3.2	3.6	7.0	P0612
10"	250	273.0	/	2.3	2.6	2.9	3.2	3.6	7.0	P0613
12"	300	323.9	/	/	2.6	2.9	3.2	3.6	7.0	P0614
14"	350	355.6	/	/	2.6	2.9	3.2	3.6	7.0	P0615
16"	400	406.4	/	/	2.6	2.9	3.2	3.6	7.0	P0616
18"	450	457	/	/	/	/	3.2	3.6	7.0	P0617
20"	500	508	/	/	/	/	3.2	3.6	7.0	P0618
24"	600	610	/	/	/	/	3.2	3.6	7.0	P0619

Note:
1. The thickness follow Table 4 of EN 10224.
2. The hydrostatic test shall be carried out at a test pressure of 70 bar or at a value P calculated by the formula, whichever is lower.

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Available size

Size			Thickness						Test pressure	Ref. No.
Inch	DN	OD (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	MPa	
3/4"	20	26.9	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0622
1"	25	33.7	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0623
1-1/4"	32	42.4	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0624
1-1/2"	40	48.3	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0625
2"	50	60.3	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0626
2-1/2"	65	76.1	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0627
3"	80	88.9	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0628
4"	100	114.3	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0629
5"	125	139.7	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0630
6"	150	168.3	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0631
8"	200	219.1	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0632
10"	250	273.0	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0633
12"	300	323.9	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0634
14"	350	355.6	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0635
16"	400	406.4	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0636
18"	450	457	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0637
20"	500	508	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0638
24"	600	610	4.0	4.5	5.0	5.4	5.6	6.3	7.0	P0639

Available size

Size			Thickness						Test pressure	Ref. No.
Inch	DN	OD (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	MPa	
3/4"	20	26.9	7.1	8.0	/	/	/	/	7.0	P0642
1"	25	33.7	7.1	8.0	8.8	/	/	/	7.0	P0643
1-1/4"	32	42.4	7.1	8.0	8.8	10.0	11.0	/	7.0	P0644
1-1/2"	40	48.3	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0645
2"	50	60.3	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0646
2-1/2"	65	76.1	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0647
3"	80	88.9	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0648
4"	100	114.3	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0649
5"	125	139.7	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0650
6"	150	168.3	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0651
8"	200	219.1	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0652
10"	250	273.0	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0653
12"	300	323.9	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0654
14"	350	355.6	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0655
16"	400	406.4	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0656
18"	450	457	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0657
20"	500	508	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0658
24"	600	610	7.1	8.0	8.8	10.0	11.0	12.5	7.0	P0659

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Available size

Size			Thickness						Test pressure	Ref. No.
Inch	DN	OD (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	T (mm)	MPa	
3/4"	20	26.9	/	/	/	/	/	/	7.0	P0662
1"	25	33.7	/	/	/	/	/	/	7.0	P0663
1-1/4"	32	42.4	/	/	/	/	/	/	7.0	P0664
1-1/2"	40	48.3	/	/	/	/	/	/	7.0	P0665
2"	50	60.3	14.2	/	/	/	/	/	7.0	P0666
2-1/2"	65	76.1	14.2	16.0	17.5	/	/	/	7.0	P0667
3"	80	88.9	14.2	16.0	17.5	20.0	/	/	7.0	P0668
4"	100	114.3	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0669
5"	125	139.7	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0670
6"	150	168.3	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0671
8"	200	219.1	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0672
10"	250	273.0	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0673
12"	300	323.9	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0674
14"	350	355.6	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0675
16"	400	406.4	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0676
18"	450	457	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0677
20"	500	508	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0678
24"	600	610	14.2	16.0	17.5	20.0	22.2	25.0	7.0	P0679

Note:

1. The thickness follow Table 4 of EN 10224.
2. The hydrostatic test shall be carried out at a test pressure of 70 bar or at a value P calculated by the formula, whichever is lower.

Chemical compositions (%)

C	Mn	P	S	Si	Cu	Cr	Mo	V
≤ 0.16	≤ 1.20	≤ 0.035	≤ 0.025	≤ 0.35	-	-	-	-

* Elements not included in above table may be present but shall not be intentionally added to the steel without the agreement of the purchaser, except for elements which may be added for finishing the cast.
* A maximum copper content lower than that permitted by EN 10020 may be specified by the purchaser to facilitate subsequent forming operations.

Mechanical properties

Tensile strength (MPa)	Yield strength (MPa)	Longitudinal elongation (%)
360-500	≥ 235	≥ 25

EN10224 ERW steel tube

Leak tightness test

· Each tube shall pass a leak tightness test.

· The test can be a hydrostatic test at a minimum of 70 bar or P, calculated from the following equation, whichever is the lower.

· An electromagnetic test is alternative in accordance with EN 10246-1, including eddy current method, or flux leakage method.

Note:
The equation of hydrostatic test pressure: P = 20ST/D.
P = Hydrostatic test pressure in bar.
S = Tube wall stress in MPa, 70% of the minimum yield strength.
T = Tube wall thickness in mm.
D = Tube outside diameter in mm.

Other tests

· Tensile test, bending test and flattening test.

· Dimensional inspection: outer diameter, thickness, length.

· Straightness: The tubes shall not deviate from straightness by more than 0.2% of the total length measured at the centre of the tube length.

· Ovality (out of roundness): It shall be within the limits for the diameter tolerance with D/T less than or equal to 100.

· Visual examination / coating test.

· Quantity and weight measurement.