

TUBE	SIZE	SPECIFIED OUTSIDE DIAMETER		WALL THICKNESS	Weight of Tube		PRESSURE
	INCH	NB	MM	MOM	BLACK	S/S	BAR
M E D I U M	1/2"	15	21.3	2.6	1.21	1.22	70
	3/4"	20	26.9	2.6	1.56	1.57	70
	1"	25	33.7	3.2	2.41	2.43	70
	1 1/4"	32	42.4	3.2	3.10	3.13	70
	1 1/2"	40	48.3	3.2	3.56	3.6	70
	2"	50	60.3	3.6	5.03	5.1	70
	2 1/2"	65	76.1	3.6	6.42	6.54	70
	3"	80	88.9	4.0	8.36	8.53	70
	4"	100	114.3	4.5	12.2	12.5	70
	5"	125	139.7	5.0	16.6	17.1	70
	6"	150	165.1	5.0	19.8	20.4	70
H E A V Y	1/2"	15	21.3	3.2	1.44	1.45	70
	3/4"	20	26.9	3.2	1.87	1.88	70
	1"	25	33.7	4.0	2.93	2.95	70
	1 1/4"	32	42.4	4.0	3.79	3.82	70
	1 1/2"	40	48.3	4.0	4.37	4.41	70
	2"	50	60.3	4.5	6.19	6.26	70
	2 1/2"	65	76.1	4.5	7.93	8.05	70
	3"	80	88.9	5.0	10.3	10.5	70
	4"	100	114.3	5.4	14.5	14.8	70
	5"	125	139.7	5.4	17.9	18.4	70
	6"	150	165.1	5.4	21.3	21.9	70

TOLERANCES

- OUTSIDE DIAMETER.** : $D \leq 219.1 = \pm 1\%$ or $\pm 0.5\text{mm}$ whichever is the greater.
- STRAIGHTNESS** : Straightness shall not exceed $0.0015 L$. Deviations from straightness over any one meter length not exceed 3mm
- THICKNESS** : $\pm 10\%$ for wall thickness $\leq 5\text{mm}$
: $\pm 8\%$ for wall thickness $5 < T \leq 40\text{mm}$
- WELD BEAD HEIGHT** : For TR1 inside 1.5mm maximum and outside shall be Trimmed
: For TR2 inside $0.5 + 0.05T$ mm maximum and outside shall be Trimmed
- ENDS** : Cut cleanly and nominally square with the axis of the tube and free from excessive burrs.
- CHEMICAL COMPOSITION:**

Steel Grade		C	Si	Mn	P	S	Cr	Mo	Ni	Al	Cu	Nb	Ti	V	Cr + Cu + Mo + Ni
Steel Name	Steel Number	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
P195TR1	1.0107	0,13	0,35	0,70	0,025	0,020	0,30	0,08	0,30	-	0,30	0,010	0,04	0,02	0,70
P195TR2	1.0108	0,13	0,35	0,70	0,025	0,020	0,30	0,08	0,30	0,02	0,30	0,010	0,04	0,02	0,70
P235TR1	1.0254	0,16	0,35	1,20	0,025	0,020	0,30	0,08	0,30	-	0,30	0,010	0,04	0,02	0,70
P235TR2	1.0255	0,16	0,35	1,20	0,025	0,020	0,30	0,08	0,30	0,02	0,30	0,010	0,04	0,02	0,70
P265TR1	1.0258	0,20	0,40	1,40	0,025	0,020	0,30	0,08	0,30	-	0,30	0,010	0,04	0,02	0,70
P265TR2	1.0259	0,20	0,40	1,40	0,025	0,020	0,30	0,08	0,30	0,02	0,30	0,010	0,04	0,02	0,70

7. MECHANICAL PROPERTIES :

Steel Grade		YS minimum for T≤16mm	Tensile Strength	Elongation min. %		Impact Properties Minimum Avg. (J)At a temperature of °C			
Steel Name	Steel Number			Mpa	Mpa	Longitudinal	Transverse	Longitudinal	
						0	-10	0	
P195TR1	1.0107	195	320-440	27	25	-	-	-	
P195TR2	1.0108	195	320-440	27	25	40	28	27	
P235TR1	1.0254	235	360-500	25	23	-	-	-	
P235TR2	1.0255	235	360-500	25	23	40	28	27	
P265TR1	1.0258	265	410-570	21	19	-	-	-	
P265TR2	1.0259	265	410-570	21	19	40	28	27	

: The flattening test shall be carried out in accordance with EN 10233. The tube section shall be flattened in a press the distance H between the Platens reaches the value calculated by the following equation:
 $H = ((1+C)/C + (T/D)) \times T$

Where:

8. FLATTENING TEST

- H is the distance between platens to be measured under load, in mm.
- D is the specified outside diameter, in mm.
- T is the specified wall thickness, in mm.
- C is a constant, the value of which is .
- 0.09 for steel grades P195TR1/TR2 and 235TR1/TR2
- 0.07 for steel grades P265TR1/TR2

9. DRIFT TEST

The test shall be expanded with a 60°conical tool, until the percentage increase in outside diameter as below.

Steel Grade		% Increase in outside diameter for d/D	
Steel Name	Steel Number	≤ 0,8	> 0,8
P195TR1	1.0107	10	12
P195TR2	1.0108		
P235TR1	1.0254	10	12
P235TR2	1.0255		
P265TR1	1.0258	8	10
P265TR2	1.0259		

*d= D-2T

10) LEAK TIGHTNESS TEST

- a) : On line NDT(Eddy Current)
- b) : Hydro testing at pressure as per above Table and holding time Min. 5 Second.

11. ZINC COATING

: As per EN 10240A1 /ISO 1461

12. THREADING

: For 1/2" to 3/4" - 14 TPI and from 1" to 6" - 11 TPI
Check with standard ring and plug gauges.

13. MARKING

: We can do on line stenciling as per this standard & as per customer needs at one meter interval

14. PACKING

: Hexagonal Type

15. COLOR CODING:

For Medium-----Blue
For Heavy-----Red

16. MILL TEST CERTIFICATE:- We can issue a MTC, Certifying that the tubes supplied comply with this standard.