

Specification for line pipes - API 5L

Application: gas, water and oil transportation in both oil and natural gas

Pipe dimensions and weight								
NPS	Outside diameter		Wall thickness		Weight per length unit		Pipe type	
	inches	mm	inches	mm	lb/ft	kg/m	Seamless	Welded
1.315	1.315	33.4	0.133	3.4	1.68	2.52	•	
1.660	1.660	42.2	0.140	3.6	2.27	3.43	•	
1.900	1.900	48.3	0.145	3.7	2.72	4.07	•	
2 3/8	2.375	60.3	0.141	3.6	3.37	5.03	•	
			0.154	3.9	3.66	5.42	•	
			0.172	4.4	4.05	6.07	•	
			0.188	4.8	4.40	6.57	•	
			0.218	5.5	5.03	7.43	•	
2 1/2	2.875	73.0	0.156	4.0	4.53	6.81	•	
			0.172	4.4	4.97	7.44	•	
			0.188	4.8	5.40	8.07	•	
			0.203	5.2	5.80	8.69	•	
			0.216	5.5	6.14	9.16	•	
			0.250	6.4	7.02	10.51	•	
3 1/2	3.500	88.9	0.276	7.0	7.67	11.39	•	
			0.156	4.0	5.58	8.37	•	
			0.172	4.4	6.12	9.17	•	
			0.188	4.8	6.66	9.95	•	
			0.216	5.5	7.58	11.31	•	
			0.250	6.4	8.69	13.02	•	
4	4.000	101.6	0.281	7.1	9.67	14.32	•	
			0.300	7.6	10.26	15.24	•	
			0.141	3.6	6.41	9.63	•	
			0.156	4.0	6.41	9.63	•	
			0.172	4.4	7.04	10.55	•	
			0.188	4.8	7.66	11.46	•	
4 1/2	4.500	114.3	0.226	5.7	9.12	13.48	•	
			0.250	6.4	10.02	15.02	•	
			0.281	7.1	11.17	16.55	•	
			0.318	8.1	12.52	18.68	•	
			0.156	4.0	7.24	10.88	•	
			0.172	4.4	7.96	11.92	•	
			0.188	4.8	8.67	12.96	•	
			0.203	5.2	9.32	13.99	•	
			0.219	5.6	10.02	15.01	•	
			0.237	6.0	10.80	16.02	•	
5 1/16	5.563	141.3	0.250	6.4	11.36	17.03	•	
			0.281	7.1	12.67	18.77	•	
			0.312	7.9	13.97	20.73	•	
			0.337	8.6	15.00	22.42	•	
			0.438	11.1	19.02	28.25	•	
			0.531	13.5	22.53	33.56	•	
			0.258	6.6	14.63	21.92	•	
6 3/8	6.625	168.3	0.281	7.1	15.87	23.50	•	
			0.312	7.9	17.51	25.99	•	
			0.344	8.7	19.19	28.45	•	
			0.375	9.5	20.80	30.88	•	
			0.500	12.7	27.06	40.28	•	
			0.280	7.1	18.99	28.22	•	
6 1/2	6.625	168.3	0.312	7.9	21.06	31.25	•	
			0.344	8.7	23.10	34.24	•	
			0.375	9.5	25.05	37.20	•	
			0.432	11.0	28.60	42.67	•	
			0.500	12.7	32.74	48.73	•	
			0.562	14.3	36.43	54.31	•	
			0.625	15.9	40.09	59.76	•	
			0.719	18.3	45.39	67.69	•	
			0.750	19.1	47.10	70.27	•	
			0.864	21.9	53.21	79.06	•	

Pipe dimensions and weight (continued)

NPS	Outside diameter		Wall thickness		Weight per length unit		Pipe type	
	inches	mm	inches	mm	lb/ft	kg/m	Seamless	Welded
8 5/8	8.625	219.1	0.277	7.0	24.72	36.61	•	•
			0.312	7.9	27.73	41.14	•	•
			0.322	8.2	28.58	42.65	•	•
			0.344	8.7	30.45	45.14	•	•
			0.375	9.5	33.07	49.10	•	•
			0.438	11.1	38.33	56.94	•	•
			0.500	12.7	43.43	64.64	•	•
			0.562	14.3	48.44	72.22	•	•
			0.625	15.9	53.45	79.67	•	•
			0.719	18.3	60.77	90.62	•	•
			0.750	19.1	63.14	94.20	•	•
10 3/4	10.750	273.1	0.279	7.1	31.23	46.57	•	•
			0.307	7.8	34.27	51.03	•	•
			0.344	8.7	38.27	56.72	•	•
			0.365	9.3	40.52	60.50	•	•
			0.438	11.1	48.28	71.72	•	•
			0.500	12.7	54.79	81.55	•	•
			0.562	14.3	61.21	91.26	•	•
			0.625	15.9	67.65	100.85	•	•
			0.719	18.3	77.10	114.99	•	•
			0.812	20.6	86.26	128.27	•	•
			0.875	22.2	92.37	137.36	•	•
12 3/4	12.750	323.9	0.312	7.9	41.48	61.56	•	•
			0.330	8.4	43.81	65.35	•	•
			0.344	8.7	45.62	67.62	•	•
			0.375	9.5	49.61	73.65	•	•
			0.406	10.3	53.57	79.65	•	•
			0.438	11.1	57.65	85.62	•	•
			0.500	12.7	65.48	97.46	•	•
			0.562	14.3	73.22	109.18	•	•
			0.625	15.9	81.01	120.76	•	•
			0.688	17.5	88.71	132.23	•	•
			0.750	19.1	96.21	143.56	•	•
14	14.000	355.6	0.344	8.7	50.22	74.42	•	•
			0.375	9.5	54.62	81.08	•	•
			0.406	10.3	59.00	87.71	•	•
			0.438	11.1	63.50	94.30	•	•
			0.469	11.9	67.84	100.86	•	•
			0.500	12.7	72.16	107.39	•	•
			0.562	14.3	80.73	120.36	•	•
			0.625	15.9	89.36	133.19	•	•
			0.688	17.5	97.91	145.91	•	•
			0.750	19.1	106.23	158.49	•	•
			0.812	20.6	114.48	170.18	•	•
16	16.000	406.4	0.219	5.6	36.95	55.35	•	•
			0.250	6.4	42.09	63.13	•	•
			0.281	7.1	47.22	69.91	•	•
			0.312	7.9	52.32	77.63	•	•
			0.344	8.7	57.57	85.32	•	•
			0.375	9.5	62.64	92.98	•	•
			0.406	10.3	67.60	100.60	•	•
18	18.000	457.0	0.219	5.6	41.63	62.34	•	•
			0.250	6.4	47.44	71.12	•	•
			0.281	7.1	53.23	78.77	•	•
			0.312	7.9	58.99	87.49	•	•
			0.344	8.7	64.93	96.18	•	•
			0.375	9.5	70.65	104.84	•	•

Pipe dimensions and weight (continued)

NPS	Outside diameter		Wall thickness		Weight per length unit		Pipe type	
	inches	mm	inches	mm	lb/ft	kg/m	Seamless	Welded
20	20.000	508.0	0.219	5.6	46.31	69.38		•
			0.250	6.4	52.78	79.16		•
			0.281	7.1	59.23	87.70		•
			0.312	7.9	65.66	97.43		•
			0.344	8.7	72.28	107.12		•
			0.375	9.5	78.67	116.78		•
21	21.000	530.0	0.219	5.6	46.31	69.38		•
			0.250	6.4	52.78	79.16		•
			0.281	7.1	59.23	87.70		•
			0.312	7.9	65.66	97.43		•
			0.344	8.7	72.28	107.12		•
			0.375	9.5	78.67	116.78		•
			0.395	9.5	86.16	128.20		•
40	40.000	1016	0.375	9.5	158.85	235.79		•
			0.406	10.3	171.84	255.45		•
			0.438	11.1	185.24	275.07		•
			0.469	11.9	198.19	294.66		•
			0.500	12.7	211.13	314.22		•
			0.562	14.3	236.93	353.24		•

The sizes are produced upon agreement.

Welding process: ERW-HFI. Length: 12 m

Mechanical properties of steel according to PSL1

Steel Grade	Tensile strength, psi/MPa	Yield strength, psi/MPa
	not less than	
A25	45000 (310)	25000 (172)
A	48000 (331)	30000 (207)
B	60000 (414)	35000 (241)
X42	60000 (414)	42000 (290)
X46	63000 (434)	46000 (317)
X52	66000 (455)	52000 (359)
X56	71000 (490)	56000 (386)
X60	75000 (517)	60000 (414)

Mechanical properties of steel according to PSL2

Steel Grade	Tensile strength, psi/MPa	Yield strength, psi/MPa
B	60000-110000 (414-758)	35000-65000 (241-488)
X42	60000-110000 (414-758)	42000-72000 (290-496)
X46	63000-110000 (434-758)	46000-76000 (317-524)
X52	66000-110000 (455-758)	52000-77000 (359-531)
X56	71000-110000 (490-758)	56000-79000 (386-544)
X60	75000-110000 (517-758)	60000-82000 (414-565)

Tolerances

Outside diameter permissible deviation		Wall thickness permissible deviation	Weight deviations
up to 60.3 mm	Pipe body + 0.41/- 0.79 mm Pipe ends: up to OD 273.1 +1.59/-0.40 mm	OD up to 73.0 mm GrB +20.0/-12.5 % grades X42 and higher +15.0/-12.5 % OD above 73.0 mm +15.0/-12.5 %	+ 10.0% - 3.5%
above 60.3 mm	Pipe body ±0.75% Pipe ends: above OD 273.1 +2.38/-0.79 mm		

Steel grades for API 5L PSL1/PSL2 ERW line pipes: Grade B – X65 (X70).

In addition to API 5L, we produce line pipes according to customer specifications or other standards (including double or triple standards conformity): ISO 3183, ASTM, DIN, GOST.