QT-1100 Technical Data Sheet

For the appropriate sizes, QT-1100 can be routinely ordered as a TRUE-TAPER™ string, straight wall, straight wall Flash-Free string or as a string with an electric wireline or capillary tube installed. QT-1100 is manufactured from high strength low alloy steel (HSLAS) with alloying additions to provide resistance to atmospheric corrosion. The chemical composition of QT-1100 meets the specification requirements of API 5ST CT110.

Mechanical Properties

Minimum Yield Strength, psi (MPa)	110,000 (758)
Minimum Tensile Strength, psi (MPa)	116,000 (800)
Minimum Elongation	Calculated from the formula: $E=800{,}000 \frac{A_w^{0.2}}{L_u^{0.9}}\ \%$ Where: A_w = Pipe Metal Cross Section, (in^2) L_u = Specified Minimum Tensile Strength (psi)
Maximum Hardness	30 HRC

Technical Data

Specified

Outside Diameter, D		**Wall Thickness, t**		**Calculated Inside Diameter, d**		**Plain End Mass, M_{pe}**		**Pipe Metal Cross Sectional Area, A**		**Pipe Body Yield Load, L_y**		**Tensile Load, L_T**		**Internal Yield Pressure, P_r**		**Hydro Test Pressure, P_T**		**Torsional Yield Strength, T_f**	
in	mm	in	mm	in	mm	lb/ft	kg/m	in^2	mm^2	lb	kg	lb	kg	psi	MPa	psi	MPa	lb/ft	kg/m
1	25.4	0.087	2.2	0.826	21.0	0.849	1.264	0.250	161.0	27,450	12,450	28,950	13,130	18,040	124.4	14,400	99.5	560	760
1	25.4	0.095	2.4	0.810	20.6	0.919	1.368	0.270	174.3	29,710	13,480	31,330	14,210	19,800	136.5	15,000	103.4	590	800
1	25.4	0.102	2.6	0.796	20.2	0.979	1.457	0.288	185.6	31,650	14,360	33,380	15,140	21,340	147.1	15,000	103.4	620	840
1	25.4	0.109	2.8	0.782	19.9	1.038	1.545	0.305	196.8	33,560	15,220	35,390	16,050	22,880	157.8	15,000	103.4	650	880
1	25.4	0.118	3.0	0.764	19.4	1.113	1.656	0.327	210.9	35,970	16,310	37,930	17,200	24,860	171.4	15,000	103.4	690	940
1	25.4	0.125	3.2	0.750	19.1	1.169	1.740	0.344	221.7	37,800	17,140	39,860	18,080	26,400	182.0	15,000	103.4	710	960
1 ¼	31.8	0.087	2.2	1.076	27.4	1.082	1.613	0.318	205.4	34,970	15,890	36,870	16,760	14,430	99.4	11,500	79.5	920	1,250
1 ¼	31.8	0.095	2.4	1.060	27.0	1.173	1.749	0.345	222.8	37,920	17,230	39,990	18,170	15,840	109.0	12,700	87.2	980	1,330
1 ¼	31.8	0.102	2.6	1.046	26.6	1.252	1.866	0.368	237.7	40,470	18,390	42,670	19,390	17,070	117.5	13,700	94.0	1,030	1,400
1 ¼	31.8	0.109	2.8	1.032	26.3	1.330	1.982	0.391	252.5	42,980	19,530	45,320	20,590	18,300	126.0	14,600	100.8	1,090	1,480
1 ¼	31.8	0.118	3.0	1.014	25.8	1.428	2.129	0.420	271.2	46,160	20,970	48,680	22,120	19,890	136.9	15,000	103.4	1,150	1,560
1 ¼	31.8	0.125	3.2	1.000	25.5	1.503	2.241	0.442	285.5	48,600	22,080	51,250	23,290	21,120	145.4	15,000	103.4	1,200	1,630
1 ¼	31.8	0.134	3.4	0.982	25.0	1.599	2.384	0.470	303.6	51,680	23,480	54,500	24,760	22,700	156.3	15,000	103.4	1,260	1,710
1 ¼	31.8	0.145	3.7	0.960	24.4	1.713	2.554	0.503	325.3	55,370	25,160	58,390	26,530	24,640	169.6	15,000	103.4	1,320	1,790
1 ¼	31.8	0.156	4.0	0.938	23.9	1.824	2.720	0.536	346.5	58,980	26,800	62,190	28,260	26,580	182.9	15,000	103.4	1,390	1,880
1 ¼	31.8	0.175	4.4	0.900	22.9	2.011	2.999	0.591	382.0	65,010	29,540	68,560	31,150	29,920	206.0	15,000	103.4	1,480	2,010
1 ¼	31.8	0.188	4.8	0.874	22.2	2.134	3.183	0.627	405.4	69,000	31,350	72,760	33,060	32,210	221.7	15,000	103.4	1,540	2,090
1 ½	38.1	0.095	2.4	1.310	33.3	1.427	2.124	0.419	270.5	46,130	20,920	48,640	22,060	13,200	91.0	10,600	72.8	1,470	1,990
1 ½	38.1	0.102	2.6	1.296	32.9	1.524	2.269	0.448	289.0	49,280	22,350	51,970	23,570	14,230	98.1	11,400	78.5	1,550	2,100
1 ½	38.1	0.109	2.8	1.282	32.6	1.621	2.412	0.476	307.3	52,400	23,770	55,250	25,060	15,250	105.2	12,200	84.1	1,640	2,220
1 ½	38.1	0.118	3.0	1.264	32.1	1.743	2.594	0.512	330.5	56,360	25,560	59,430	26,960	16,570	114.3	13,300	91.4	1,740	2,360
1 ½	38.1	0.125	3.2	1.250	31.8	1.837	2.735	0.540	348.4	59,400	26,940	62,640	28,410	17,600	121.3	14,100	97.1	1,820	2,470
1 ½	38.1	0.134	3.4	1.232	31.3	1.957	2.912	0.575	371.0	63,260	28,690	66,710	30,260	18,920	130.4	15,000	103.4	1,910	2,590
1 ½	38.1	0.145	3.7	1.210	30.7	2.100	3.126	0.617	398.2	67,900	30,800	71,600	32,480	20,530	141.6	15,000	103.4	2,020	2,740
1 ½	38.1	0.156	4.0	1.188	30.2	2.241	3.336	0.659	425.0	72,450	32,870	76,410	34,660	22,150	152.7	15,000	103.4	2,130	2,890
1 ½	38.1	0.175	4.4	1.150	29.2	2.479	3.689	0.728	470.0	80,130	36,350	84,500	38,330	24,930	171.9	15,000	103.4	2,300	3,120
1 ½	38.1	0.188	4.8	1.124	28.5	2.637	3.924	0.775	499.9	85,240	38,660	89,890	40,770	26,840	185.1	15,000	103.4	2,400	3,250
1 ½	38.1	0.203	5.2	1.094	27.8	2.815	4.189	0.827	533.6	90,990	41,270	95,950	43,520	29,040	200.2	15,000	103.4	2,510	3,400
1 ¾	44.5	0.109	2.8	1.532	39.0	1.912	2.849	0.562	363.0	61,810	28,070	65,180	29,600	13,070	90.0	10,500	72.0	2,300	3,120
1 ¾	44.5	0.118	3.0	1.514	38.5	2.059	3.068	0.605	390.8	66,550	30,220	70,180	31,870	14,210	97.8	11,400	78.3	2,450	3,320
1 ¾	44.5	0.125	3.2	1.500	38.2	2.171	3.236	0.638	412.2	70,200	31,880	74,020	33,620	15,090	103.9	12,100	83.1	2,560	3,470
1 ¾	44.5	0.134	3.4	1.482	37.7	2.315	3.450	0.680	439.4	74,830	33,990	78,910	35,840	16,220	111.7	13,000	89.4	2,700	3,660
1 ¾	44.5	0.145	3.7	1.460	37.1	2.488	3.707	0.731	472.3	80,420	36,520	84,810	38,520	17,600	121.2	14,100	97.0	2,870	3,890
1 ¾	44.5	0.156	4.0	1.438	36.6	2.658	3.961	0.781	504.6	85,930	39,030	90,620	41,150	18,980	130.7	15,000	103.4	3,030	4,110
1 ¾	44.5	0.175	4.4	1.400	35.6	2.946	4.391	0.866	559.3	95,250	43,260	100,440	45,620	21,370	147.2	15,000	103.4	3,290	4,460
1 ¾	44.5	0.188	4.8	1.374	34.9	3.139	4.678	0.923	595.9	101,480	46,090	107,020	48,600	23,010	158.4	15,000	103.4	3,450	4,680
1 ¾	44.5	0.203	5.2	1.344	34.2	3.357	5.003	0.987	637.3	108,530	49,290	114,440	51,980	24,890	171.4	15,000	103.4	3,630	4,920
1 ¾	44.5	0.224	5.7	1.302	33.1	3.654	5.444	1.074	693.4	118,130	53,630	124,570	56,550	27,530	189.5	15,000	103.4	3,860	5,230
2	50.8	0.109	2.8	1.782	45.3	2.203	3.279	0.648	417.8	71,230	32,310	75,120	34,070	11,440	78.9	9,200	63.1	3,070	4,160
2	50.8	0.118	3.0	1.764	44.8	2.374	3.533	0.698	450.1	76,740	34,810	80,930	36,710	12,430	85.7	9,900	68.6	3,280	4,450
2	50.8	0.125	3.2	1.750	44.5	2.505	3.729	0.736	475.0	80,990	36,740	85,410	38,740	13,200	91.0	10,600	72.8	3,440	4,660
2	50.8	0.134	3.4	1.732	44.0	2.673	3.978	0.786	506.8	86,410	39,190	91,120	41,330	14,190	97.8	11,400	78.3	3,640	4,940
2	50.8	0.145	3.7	1.710	43.4	2.875	4.280	0.845	545.2	92,950	42,160	98,020	44,460	15,400	106.2	12,300	84.9	3,870	5,250
2	50.8	0.156	4.0	1.688	42.9	3.075	4.577	0.904	583.0	99,410	45,090	104,830	47,550	16,610	114.5	13,300	91.6	4,090	5,550
2	50.8	0.175	4.4	1.650	41.9	3.414	5.081	1.003	647.3	110,370	50,060	116,390	52,790	18,700	128.9	15,000	103.1	4,460	6,050
2	50.8	0.188	4.8	1.624	41.2	3.642	5.420	1.070	690.5	117,720	53,400	124,140	56,310	20,130	138.8	15,000	103.4	4,700	6,370
2	50.8	0.203	5.2	1.594	40.5	3.900	5.804	1.146	739.4	126,060	57,180	132,940	60,300	21,780	150.2	15,000	103.4	4,960	6,720
2	50.8	0.224	5.7	1.552	39.4	4.253	6.327	1.250	806.0	137,480	62,330	144,980	65,730	24,090	166.0	15,000	103.4	5,300	7,190
2	50.8	0.236	6.0	1.528	38.8	4.450	6.623	1.308	843.7	143,860	65,250	151,710	68,810	25,410	175.2	15,000	103.4	5,480	7,430
2	50.8	0.250	6.4	1.500	38.1	4.677	6.961	1.374	886.7	151,190	68,580	159,440	72,320	26,950	185.8	15,000	103.4	5,680	7,700

QT-1100 Technical Data Sheet

Specified																			
Outside Diameter, D		Wall Thickness, t		Calculated Inside Diameter, d		Plain End Mass, M_{pe}		Pipe Metal Cross Sectional Area, A		Pipe Body Yield Load, L_y		Tensile Load, L_T		Internal Yield Pressure, P_r		Hydro Test Pressure, P_T		Torsional Yield Strength, T_f	
in	mm	in	mm	in	mm	lb/ft	kg/m	in^2	mm^2	lb	kg	lb	kg	psi	MPa	psi	MPa	lb/ft	kg/m
2 3/8	60.3	0.134	3.4	2.107	53.5	3.210	4.776	0.943	608.4	103,770	47,050	109,430	49,620	11,950	82.4	9,600	65.9	5,300	7,190
2 3/8	60.3	0.145	3.7	2.085	52.9	3.457	5.142	1.016	655.1	111,740	50,660	117,840	53,430	12,970	89.5	10,400	71.6	5,650	7,660
2 3/8	60.3	0.156	4.0	2.063	52.4	3.700	5.505	1.088	701.3	119,630	54,240	126,150	57,200	13,990	96.5	11,200	77.2	6,000	8,130
2 3/8	60.3	0.175	4.4	2.025	51.4	4.116	6.123	1.210	780.0	133,050	60,320	140,300	63,610	15,750	108.6	12,600	86.9	6,560	8,890
2 3/8	60.3	0.188	4.8	1.999	50.7	4.395	6.539	1.292	833.0	142,090	64,420	149,840	67,930	16,950	116.9	13,600	93.5	6,930	9,400
2 3/8	60.3	0.203	5.2	1.969	50.0	4.713	7.012	1.385	893.3	152,370	69,080	160,680	72,850	18,340	126.5	14,700	101.2	7,340	9,950
2 3/8	60.3	0.224	5.7	1.927	48.9	5.151	7.659	1.514	975.7	166,510	75,460	175,590	79,580	20,290	139.9	15,000	103.4	7,890	10,700
2 3/8	60.3	0.236	6.0	1.903	48.3	5.396	8.028	1.586	1,022.6	174,450	79,090	183,960	83,400	21,400	147.6	15,000	103.4	8,180	11,090
2 3/8	60.3	0.250	6.4	1.875	47.6	5.679	8.449	1.669	1,076.3	183,590	83,240	193,600	87,780	22,690	156.5	15,000	103.4	8,510	11,540
2 5/8	66.7	0.156	4.0	2.313	58.8	4.117	6.131	1.210	781.0	133,100	60,400	140,360	63,690	12,660	87.2	10,100	69.8	7,470	10,130
2 5/8	66.7	0.175	4.4	2.275	57.8	4.583	6.824	1.347	869.4	148,170	67,230	156,250	70,900	14,250	98.2	11,400	78.6	8,190	11,100
2 5/8	66.7	0.188	4.8	2.249	57.1	4.898	7.292	1.439	929.0	158,330	71,850	166,960	75,760	15,340	105.7	12,300	84.6	8,670	11,750
2 5/8	66.7	0.203	5.2	2.219	56.4	5.256	7.826	1.545	996.9	169,910	77,100	179,180	81,310	16,590	114.4	13,300	91.5	9,200	12,470
2 5/8	66.7	0.224	5.7	2.177	55.3	5.749	8.557	1.690	1,090.1	185,860	84,300	196,000	88,900	18,350	126.4	14,700	101.2	9,900	13,420
2 5/8	66.7	0.236	6.0	2.153	54.7	6.027	8.974	1.771	1,143.1	194,840	88,410	205,460	93,230	19,360	133.4	15,000	103.4	10,290	13,950
2 5/8	66.7	0.250	6.4	2.125	54.0	6.347	9.451	1.865	1,203.9	205,190	93,110	216,380	98,190	20,530	141.5	15,000	103.4	10,720	14,530
2 7/8	73.0	0.156	4.0	2.563	65.1	4.534	6.746	1.333	859.4	146,580	66,460	154,580	70,090	11,550	79.7	9,200	63.8	9,100	12,340
2 7/8	73.0	0.175	4.4	2.525	64.1	5.051	7.515	1.484	957.3	163,280	74,040	172,190	78,080	13,010	89.7	10,400	71.8	10,000	13,560
2 7/8	73.0	0.188	4.8	2.499	63.4	5.400	8.034	1.587	1,023.5	174,570	79,150	184,090	83,470	14,000	96.6	11,200	77.3	10,600	14,370
2 7/8	73.0	0.203	5.2	2.469	62.7	5.798	8.627	1.704	1,099.0	187,450	84,990	197,670	89,630	15,150	104.5	12,100	83.6	11,260	15,270
2 7/8	73.0	0.224	5.7	2.427	61.6	6.348	9.441	1.866	1,202.6	205,210	93,010	216,400	98,080	16,760	115.5	13,400	92.4	12,150	16,470
2 7/8	73.0	0.236	6.0	2.403	61.0	6.658	9.905	1.957	1,261.8	215,230	97,580	226,970	102,910	17,680	121.9	14,100	97.5	12,640	17,140
2 7/8	73.0	0.250	6.4	2.375	60.3	7.015	10.437	2.062	1,329.6	226,780	102,830	239,150	108,440	18,750	129.3	15,000	103.4	13,190	17,880

A Minimum wall thickness is 0.005" (0.13 mm) less than specified wall thickness.

B Pressures calculated based on t – 0.005" (0.13 mm).

C Maximum hydrostatic test pressure is 15,000 psi (103 MPa).

D Additional diameters and wall thicknesses may be available upon request.