KHI PRODUCTS
SPECIFICATION

MATERIAL & PIPE SPECIFICATION

Standard Specifcation	Chemical Composition (%)						Mechanical Strength			
	Grade	Application	C	Mn	P	S	Yield Strength		Ultimate Tensile Strength	
			max	max	max	max	Psi	N/mm2	Psi	N/mm2
API SL (*)	A25	Oil & Gas Line Pipe	0.21	0.60	0.03	0.03	25,382.00	175.0	44,962.40	310.0
	A		0.22	0.90	0.03	0.03	30,458.40	210.0	48,588.40	335.0
	B		0.26	1.20	0.03	0.03	35,534.80	245.0	60,191.60	415.0
	X42		0.26	1.30	0.03	0.03	42,061.60	290.0	74,695.60	515.0
	X46		0.26	1.40	0.03	0.03	46,412.80	320.0	63,092.40	435.0
	X52		0.26	1.40	0.03	0.03	52,214.40	360.0	66,718.40	460.0
	X56		0.26	1.40	0.03	0.03	56,565.60	390.0	71,069.60	490.0
	X60		0.26	1.40	0.03	0.03	60,191.60	415.0	75,420.80	520.0
	X65		0.26	1.45	0.03	0.03	65,268.00	450.0	77,596.40	535.0
	X70		0.26	1.65	0.03	0.03	70,344.40	485.0	82,672.80	530.0
ASTM A252	2	Steel Pipe Piles	-	-	0.050	-	34,809.60	240.0	60,191.60	415.0
	3		-	-	0.050	-	44,962.40	310.0	65,993.20	455.0
ASTM A139	A	Steel Pipe Piles	0.25	1.00	0.0350	0.0350	29,733.20	205.0	47,863.20	330.0
	B		0.26	1.00	0.0350	0.0350	34,809.60	240.0	60,191.60	415.0
	C		0.28	1.20	0.0350	0.0350	42,061.60	290.0	60,191.60	415.0
	D		0.30	1.30	0.0350	0.0350	45,687.60	315.0	60,191.60	415.0
	E		0.30	1.40	0.0350	0.0350	52,214.40	360.0	65,993.20	455.0
ASTM A283	A	Steel pipe Piles	0.14	0.9	0.035	0.04	23,931.60	165.0	44,962.40	310.0
									60,191.60	415.0
	B		0.17	0.9	0.035	0.04	26,832.40	185.0	50,038 80	345.0
									65,268.00	450.0
	C		0.24	0.9	0.035	0.04	29,733.20	205.0	55,115.20	380.0
									74,695.60	515.0
	D		0.27	0.9	0.035	0.04	33,359.20	230.0	60,191.60	415.0
									79,772.00	550.0
ASTM A53	A	Electric Resistance Welded	0.25	0.95	0.05	0.045	29,733.20	205.0	47,863.20	330.0
	B		0.30	1.20	0.05	0.045	34,809.60	240.0	60,191.60	415.0
ASTM A134		The Steel Grade Conform to ASTM A283								
JIS A5525	SKK 41/400	Steel Pipe Piles	0.25	-	0.04	0.04	34,084.40	235.0	58,016.00	400.0
	SKK 50/490		0.18	1.50	0.04	0.04	45,687.60	315.0	71,069.60	490.0
JIS A5530	SKY 41/400	Steel Pipe Piles	0.25	-	0.04	0.04	34,084.40	235.0	58,016.00	400.0
	SKY 50/490		0.18	1.50	0.04	0.04	45,687.60	315.0	71,069.60	490.0
JIS G3444	STK 30/290	General Structural Purpose	-	-	0.05	0.05	-	-	42,061.60	290.0
	STK 41/400		0.25	-	0.04	0.04	34,084.40	235.0	58,016.00	400.0
	STK 51/500		0.24	1.30	0.04	0.04	51,489.20	355.0	72,520.00	500.0
	STK 50/490		0.18	1.50	0.04	0.04	45,687.60	315.0	71,069.60	490.0
	STK 55/540		0.23	1.50	0.04	0.04	56,565.60	390.0	78,321.60	540.0
JIS G3101	SS 380	General Structural Purpose	-	-	0.050	0.050	28,282.80	195.0	47,863.20	330.0
									62,367.20	430.0
	SS 400		-	-	0.050	0.050	34,084.40	235.0	58,016.00	400.0
									73,970.40	510.0
	SS 490		-	-	0.050	0.050	39,886.00	275.0	71,069.60	490.0
									88,474.40	610.0
	SS 540		0.30	1.60	0.040	0.040	56,565.60	390.0	78,321.60	540.0
AWWA C200		The Steel Grade Conform to ASTM A283								
BS EN 10025**	S 355 J0	General Structural Purpose	0.20 (2)(3)	1.6	0.035	0.035	51,489	355	68168/91374	470/630
	S 355 Jr		0.22	1.6	0.035	0.035	51,489	355	68168/91374	470/630

* Applies only to API 5L 44th Ed PSL 1, for PSL 2 is as defined in API Spesification for Line Pipe book, table 5 & 7

** Detail specification refers to BS EN 10025** Standard

ERW/HFRW

Nominal Size : Dia. 1/2" - 20"
Wall Thickness : 3.2 – 16 mm
Pipe Length : 5 up to 18 meter/pcs

Line Pipe : API 5L Grade A up to API 5L X 80
Structural : ASTM A53, ASTM A252,
& General Purposes : AWWA C200, AS 1163, AS 1396, BS 1387, JIS G3444, SNI.

ASTM A53 Steel Line Pipe Grade A & B

Nominal Size In	Outside Diameter		Wall Thickness		Sch.No.	Weight		Test Pressure			
								Grade A		Grade B	
	In	mm	In	mm		lbs/ft	kg/m	psi	kPa	psi	kPa
1/2	0.840	21.3	0.109	2.77	40/STD	0.85	1.27	700	4800	700	4800
3/4	1.050	26.7	0.113	2.87	40/STD	1.13	1.69	700	4800	700	4800
1	1.315	33.4	0.133	3.38	40/STD	1.68	2.50	700	4800	700	4800
1 1/4	1.660	42.2	0.140	3.56	40/STD	2.27	3.39	1200	8300	1300	9000
1 1/2	1.900	48.3	0.145	3.68	40/STD	2.72	4.05	1200	8300	1300	9000
2	2.375	60.3	0.154	3.91	40/STD	3.66	5.44	2300	15900	2500	17200
2 1/2	2.875	73	0.203	5.16	40/STD	5.80	8.63	2500	17200	2500	17200
3	3.500	88.9	0.125	3.18	-	4.51	6.72	1290	8900	1500	1000
			0.156	3.96	-	5.58	8.29	1600	11000	1870	12900
			0.188	4.78	-	6.66	9.92	1930	13330	2260	15600
			0.216	5.49	40/STD	7.58	11.29	2220	15300	2500	17200
4	4.500	114.3	0.188	4.78	-	8.66	12.91	1500	10340	1750	12070
			0.219	5.56	-	10.01	14.91	1750	12070	2040	14070
			0.237	6.02	40/STD	10.79	16.07	1900	13100	2210	15240
			0.250	6.35	-	11.35	16.90	2000	13790	2330	16060
6	6.625	168.3	0.188	4.78	-	12.92	19.27	1020	7030	1190	8200
			0.219	5.56	-	14.98	22.31	1190	8200	1390	9580
			0.250	6.35	-	17.02	25.36	1360	9380	1580	10890
			0.280	7.11	40/STD	18.97	28.26	1520	10480	1780	12270
			0.312	7.92	-	21.04	31.32	1700	11720	1980	13650
			0.344	8.74	-	23.08	34.39	1870	12890	2180	15030
			0.375	9.52	-	25.03	37.28	2040	14070	2380	16410
8	8.625	219.1	0.188	4.78	-	16.94	25.26	780	5380	920	6340
			0.203	5.16	-	18.26	27.22	850	5860	1000	6890
			0.219	5.56	-	19.66	29.28	910	6270	1070	7380
			0.250	6.35	20	22.36	33.31	1040	7170	1220	8410
			0.277	7.04	30	24.70	36.31	1160	7800	1350	9310
			0,312	7.92	-	27.70	41.24	1300	8960	1520	10480
			0.322	8.18	40/STD	28.55	42.55	1340	9240	1570	10820
			0.344	8.74	-	30.42	45.34	1440	9930	1680	11580
			0.375	9.52	-	33.04	49.20	1570	10820	1830	12620
			0.406	10.31	60	35.64	53.08	1700	11720	2000	13790
			0.438	11.13	-	38.30	57.08	1830	12620	2130	14690
10	10.750	273.0	0.188	4.78	-	21.23	31.62	630	4300	730	5000
			0.203	5.16	-	22.89	34.08	680	4700	800	5500
			0.219	5.56	-	24.65	36.67	730	5000	860	5900
			0.250	6.35	20	28.06	41.75	840	5800	980	6800
			0.279	7.09	-	31.23	46.49	930	6400	1090	7500
			0.307	7.80	30	34.27	51.01	1030	7100	1200	8300
			0.344	8.74	-	38.27	56.96	1150	7900	1340	9200
			0.365	9.27	40/STD	40.52	60.29	1220	8400	1430	9900
			0.438	11.13	-	48.28	71.87	1470	10100	1710	11800

Nominal Size In	Outside Diameter		Wall Thickness		Sch.No.	Weight		Test Pressure			
								Grade A		Grade B	
	In	mm	In	mm		lbs/ft	kg/m	psi	kPa	psi	kPa
12	12.750	323.8	0.203	5.16	-	27.23	40.55	570	3900	670	4600
			0.219	5.56	-	29.34	43.63	620	4300	720	5000
			0.250	6.35	20	33.41	49.71	710	4900	820	5700
			0.281	7.14	-	37.46	55.75	790	5400	930	6400
			0.312	7.92	-	41.48	61.69	880	6100	1030	7100
			0.330	8.38	30	43.81	65.18	930	6400	1090	7500
			0.344	8.74	-	45.62	67.90	970	6700	1130	7800
			0.375	9.52	STD	49.61	73.78	1060	7300	1240	8500
			0.406	10.31	40	53.57	79.70	1150	7900	1340	9200
14	14.000	355.6	0.210	5.33	-	30.96	46.04	540	3700	630	4300
			1.219	5.56	-	32.26	47.99	560	3900	660	4500
			0.250	6.35	10	36.75	54.69	640	4400	750	5200
			0.281	7.14	-	41.21	61.35	720	5000	840	5800
			0.312	7.92	20	45.65	67.90	800	5500	940	6500
			0.344	8.74	-	50.22	74.76	880	6100	1030	7100
			0.375	9.52	30/STD	54.62	81.25	960	6600	1120	7700
			0.438	11.13	40	63.50	94.55	1130	7800	1310	9000
16	16.000	406.4	0.219	5.56	-	36.95	54.96	490	3400	570	3900
			0.250	6.35	10	42.09	62.64	560	3900	660	4500
			0.281	7.14	-	47.22	70.30	630	4300	740	5100
			0.312	7.92	20	52.32	77.83	700	4800	820	5700
			0.344	8.74	-	57.57	85.71	770	5300	900	6200
			0.375	9.52	30/STD	62.64	93.17	840	5800	980	6800
			0.438	11.13	-	72.86	108.49	990	6800	1150	7900
			0.469	11.91	-	82.85	115.86	1060	7300	1230	8500
			0.500	12.70	40/XS	107.60	123.30	1120	7700	1310	9000
18	18.000	457	0.250	6.35	10	47.44	70.60	500	3400	580	4000
			0.281	7.14	-	53.23	79.24	560	3900	660	4500
			0.312	7.92	20	58.99	87.75	620	4300	730	5000
			0.344	8.74	-	64.93	96.66	690	4800	800	5500
			0.375	9.52	STD	70.65	105.10	750	5200	880	6100
			0.406	10.31	-	76.36	113.62	810	5600	950	6500
			0.438	11.13	30	82.23	122.43	880	6100	1020	7000
			0.469	11.91	-	87.89	130.78	940	6500	1090	7500
			0.500	12.70	XS	93.54	139.20	1000	6900	1170	8100
			0.562	14.27	40	104.76	155.87	1120	7700	1310	9000

Nominal Size In	Outside Diameter		Wall Thickness		Sch.No.	Weight		Test Pressure			
								Grade A		Grade B	
	In	mm	In	mm		lbs/ft	kg/m	psi	kPa	psi	kPa
20	20.000	508	0.250	6.35	10	52.78	78.55	450	3100	520	3600
			0.281	7.14	-	59.23	88.19	510	3500	590	4100
			0.312	7.92	-	65.66	97.67	560	3900	660	4500
			0.344	8.74	-	72.28	107.60	620	4300	720	5000
			0.375	9.52	20/STD	78.67	117.02	680	4700	790	5400
			0.406	10.31	-	84.04	126.53	730	5000	850	5900
			0.438	11.13	-	91.59	136.37	790	5400	920	6300
			0.469	11.91	-	97.92	145.70	850	5900	950	6500
			0.500	12.70	30/XS	104.23	155.12	900	6200	1050	7200
			0.594	15.09	40	123.23	183.42	1170	8100	1250	8600

Chemical Composition (%)

ASTM A53	Carbon	Manganase	Phosphorus	Sulfur	Copper	Nickel	Chronium	Molybdenum	Vanadium	Cu+Ni+Cr+Mo+V
Grade A	0.25	0.950	0.05	0.045	0.40	0.40	0.40	0.15	0.08	1.00
Grade B	0.30	1.200	0.05	0.045	0.40	0.40	0.40	0.15	0.08	1.00

Mekanikal Properties :

	Yield Strength (mm)	Tensile Strength (mm)
Grade A	30,000 ps (205 Mpa)	48,000 psi (330 Mpa)
Grade B	35,000 ps (240 Mpa)	60,000 psi (415 Mpa)

Galvanized :

Zinc Coating Eight : 550 µ/m² (77 µm) minimum

Panjang pipa : 6 meter per batang

Toleransi panjang : ± 2%

Toleransi Tebal : Plus tidak terbatas

Minus (-) 12,5%

API 5L Standard Weights Plain End Line Pipe Dimensions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nominal Size Diameter	Specified Outside Diameter	Specified Wall Thickness		Weight	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)									
	D (mm)	(mm)	(in)	(kg/m)	d (mm)		Grade A	Grade B	Grade X42	Grade X46	Grade X52	Grade X56	Grade X60	Grade X65	Grade X70	Grade X80
4	114.3	4.8	0.19	12.96	104.70	STD	88	123	146	161	181	197	205	205	205	205
						ALT	110	154	183	202	227	246	261	283	306	350
		5.2	0.20	13.99	103.90	STD	96	134	158	175	197	205	205	205	205	205
						ALT	119	167	198	218	246	266	283	307	331	379
		5.6	0.22	15.01	103.10	STD	103	144	170	188	205	205	205	205	205	205
						ALT	129	180	213	235	265	287	305	331	356	408
		6.0	0.24	16.02	102.30	STD	110	154	183	202	205	205	205	205	205	205
						ALT	138	190	228	252	283	307	327	354	382	437
		6.4	0.25	17.03	101.50	STD	118	165	195	205	205	205	205	205	205	205
						ALT	147	190	244	269	302	328	349	378	407	466
6	168.3	4.8	0.19	19.35	158.68	STD	60	84	124	137	154	167	178	193	205	205
						ALT	75	105	124	137	154	167	178	193	208	237
		5.2	0.20	20.91	157.88	STD	65	91	134	148	167	181	192	205	205	205
						ALT	81	114	134	148	167	181	192	209	225	257
		5.6	0.22	22.46	157.08	STD	70	98	145	160	180	195	205	205	205	205
						ALT	87	122	145	160	180	195	207	225	242	277
		6.4	0.25	25.55	155.48	STD	80	112	165	183	205	205	205	205	205	205
						ALT	100	140	165	183	205	222	237	257	277	317
		7.1	0.28	28.22	154.08	STD	89	124	184	203	205	205	205	205	205	205
						ALT	111	155	184	203	228	247	263	285	307	351
		7.9	0.31	31.24	152.48	STD	99	138	204	205	205	205	205	205	205	205
						ALT	123	173	204	225	254	275	292	317	342	391
		8.7	0.34	34.24	150.88	STD	109	152	205	205	205	205	205	205	205	205
						ALT	136	190	225	248	279	302	322	349	376	430
		9.5	0.37	37.20	149.28	STD	119	166	205	205	205	205	205	205	205	205
						ALT	148	190	246	271	305	330	351	381	411	470
8	219.1	4.8	0.19	25.36	209.48	STD	46	64	95	105	118	128	136	148	159	182
						ALT	58	81	95	105	118	128	136	148	159	182
		5.2	0.20	27.43	208.68	STD	50	70	103	114	128	139	148	160	173	198
						ALT	62	87	103	114	128	139	148	160	173	198
		5.6	0.22	29.48	207.88	STD	54	75	111	123	138	150	159	173	186	205
						ALT	67	94	111	123	138	150	159	173	186	213
		6.4	0.25	33.57	206.28	STD	61	86	127	140	158	171	182	197	205	205
						ALT	77	107	127	140	158	171	182	197	213	243
		7.0	0.28	36.61	205.08	STD	67	95	141	156	175	190	202	205	205	205
						ALT	84	119	141	156	175	190	202	219	236	270
		7.9	0.31	41.14	203.28	STD	76	106	157	173	195	205	205	205	205	205
						ALT	95	133	157	173	195	211	224	243	262	300
		8.2	0.32	42.64	202.68	STD	79	110	163	180	202	205	205	205	205	205
						ALT	98	138	163	180	202	219	233	253	272	312
		8.7	0.34	45.13	201.68	STD	83	117	173	191	205	205	205	205	205	205
						ALT	104	146	173	191	214	232	247	268	289	331
		9.5	0.37	49.10	200.08	STD	91	127	189	205	205	205	205	205	205	205
						ALT	114	159	189	208	234	254	270	293	315	361
		11.1	0.44	56.93	196.88	STD	106	149	205	205	205	205	205	205	205	205
						ALT	133	186	220	243	274	296	315	342	369	422
10	273.1	4.8	0.19	31.75	263.45	STD	37	52	87	96	108	117	124	134	145	166
						ALT	46	65	87	96	108	117	124	134	145	166
		5.2	0.20	34.35	262.65	STD	40	56	94	104	117	126	134	146	157	180
						ALT	50	70	94	104	117	126	134	146	157	180
		5.6	0.22	36.93	261.85	STD	43	60	101	112	126	136	145	157	169	194
						ALT	54	75	101	112	126	136	145	157	169	194
		6.4	0.25	42.08	260.25	STD	49	69	116	128	143	155	165	179	193	205
						ALT	62	86	116	128	143	155	165	179	193	221
		7.1	0.28	46.56	258.85	STD	55	76	128	141	159	172	183	199	205	205
						ALT	68	96	128	141	159	172	183	199	214	245
		7.8	0.31	51.02	257.45	STD	60	84	141	155	175	189	202	205	205	205
						ALT	75	105	141	155	175	189	202	219	236	270
		8.7	0.34	56.71	255.65	STD	67	94	157	173	195	205	205	205	205	205
						ALT	84	117	157	173	195	211	225	244	263	301
		9.3	0.37	60.49	254.45	STD	72	100	168	185	205	205	205	205	205	205
						ALT	89	125	168	185	208	226	240	261	281	321
		11.1	0.44	71.70	250.85	STD	85	120	200	205	205	205	205	205	205	205
						ALT	107	149	200	221	249	270	287	311	335	384

API 5L Standard Weights Plain End Line Pipe Dimensions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nominal Size Diameter	Specified Outside Diameter	Specified Wall Thickness		Weight	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)									
	D (mm)	(mm)	(in)	(kg/m)	d (mm)		Grade A	Grade B	Grade X42	Grade X46	Grade X52	Grade X56	Grade X60	Grade X65	Grade X70	Grade X80
12	323.9	4.8	0.19	37.77	314.25	STD	31	44	73	81	91	98	105	113	122	140
						ALT	39	54	73	81	91	98	105	113	122	140
		5.2	0.20	40.86	313.45	STD	34	47	79	87	98	106	113	123	132	151
						ALT	42	59	79	87	98	106	113	123	132	151
		5.6	0.22	43.95	312.65	STD	36	51	85	94	106	115	122	132	143	163
						ALT	45	64	85	94	106	115	122	132	143	163
		6.4	0.25	50.10	311.05	STD	42	58	97	108	121	131	139	151	163	186
						ALT	52	73	97	108	121	131	139	151	163	186
		7.1	0.28	55.46	309.65	STD	46	64	108	119	134	145	155	168	181	205
						ALT	58	81	108	119	134	145	155	168	181	207
		7.9	0.31	61.55	308.05	STD	51	72	120	133	149	162	172	187	201	205
						ALT	64	90	120	133	149	162	172	187	201	230
		8.4	0.33	65.34	307.05	STD	54	76	128	141	159	172	183	198	205	205
						ALT	68	95	128	141	159	172	183	198	214	245
		8.7	0.34	67.61	306.45	STD	56	79	132	146	164	178	190	205	205	205
						ALT	71	99	132	146	164	178	190	206	221	253
		9.5	0.37	73.64	304.85	STD	62	86	145	160	180	194	205	205	205	205
						ALT	77	108	145	160	180	194	207	224	242	277
		10.3	0.41	79.64	303.25	STD	67	94	157	173	195	205	205	205	205	205
						ALT	83	117	157	173	195	211	224	243	262	300
		11.1	0.44	85.61	301.65	STD	72	101	169	186	205	205	205	205	205	205
						ALT	90	126	169	186	210	227	242	262	283	323
		12.7	0.50	97.45	298.45	STD	82	115	193	205	205	205	205	205	205	205
						ALT	103	144	193	213	240	260	277	300	323	370
14	355.6	4.8	0.19	41.52	346.00	STD	28	40	67	73	83	89	95	103	111	127
						ALT	35	50	67	73	83	89	95	103	111	127
		5.2	0.20	44.93	345.20	STD	31	43	72	80	89	97	103	112	121	138
						ALT	38	54	72	80	89	97	103	112	121	138
		5.6	0.22	48.33	344.40	STD	33	46	78	86	96	104	111	120	130	149
						ALT	41	58	78	86	96	104	111	120	130	149
		6.0	0.24	51.73	343.60	STD	35	50	83	92	103	112	119	129	139	159
						ALT	44	62	83	92	103	112	119	129	139	159
		6.4	0.25	55.11	342.80	STD	38	53	89	98	110	119	127	138	148	170
						ALT	47	66	89	98	110	119	127	138	148	170
		7.1	0.28	61.02	341.40	STD	42	59	98	109	122	132	141	153	165	188
						ALT	52	73	98	109	122	132	141	153	165	188
		7.9	0.31	67.74	339.80	STD	47	65	110	121	136	147	157	170	183	205
						ALT	58	82	110	121	136	147	157	170	183	210
		8.2	0.32	70.25	339.20	STD	48	68	114	125	141	153	163	176	190	205
						ALT	61	85	114	125	141	153	163	176	190	218
		8.4	0.33	71.92	338.80	STD	50	69	116	129	145	157	167	181	195	205
						ALT	62	87	116	129	145	157	167	181	195	223
		8.7	0.34	74.42	338.20	STD	51	72	121	133	150	162	173	187	202	205
						ALT	64	90	121	133	150	162	173	187	202	231
		9.3	0.37	79.42	337.00	STD	55	77	129	142	160	173	185	200	205	205
						ALT	69	96	129	142	160	173	185	200	216	247
		9.5	0.37	81.08	336.60	STD	56	79	132	145	163	177	188	204	205	205
						ALT	70	98	132	145	163	177	188	204	220	252
		10.3	0.41	87.71	335.00	STD	61	85	143	158	177	192	204	205	205	205
						ALT	76	106	143	158	177	192	204	222	239	273
		11.1	0.44	94.30	333.40	STD	66	92	154	170	191	205	205	205	205	205
						ALT	82	115	154	170	191	207	220	239	257	295
16	406.4	4.8	0.19	47.54	396.80	STD	25	35	58	64	72	78	83	90	97	111
						ALT	31	43	58	64	72	78	83	90	97	111
		5.2	0.20	51.45	396.00	STD	27	38	63	70	78	85	90	98	105	121
						ALT	34	47	63	70	78	85	90	98	105	121
		5.6	0.22	55.35	395.20	STD	29	41	68	75	84	91	97	105	114	130
						ALT	36	51	68	75	84	91	97	105	114	130
		6.0	0.24	59.24	394.40	STD	31	43	73	80	90	98	104	113	122	139
						ALT	39	54	73	80	90	98	104	113	122	139

API 5L Standard Weights Plain End Line Pipe Dimensions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nominal Size Diameter	Specified Outside Diameter	Specified Wall Thickness		Weight	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)									
	D (mm)	(mm)	(in)	(kg/m)	d (mm)		Grade A	Grade B	Grade X42	Grade X46	Grade X52	Grade X56	Grade X60	Grade X65	Grade X70	Grade X80
16	406.4	6.4	0.25	63.13	393.60	STD	33	46	78	86	96	104	111	120	130	149
						ALT	41	58	78	86	96	104	111	120	130	149
		7.1	0.28	69.91	392.20	STD	37	51	86	95	107	116	123	134	144	165
						ALT	46	64	86	95	107	116	123	134	144	165
		7.9	0.31	77.63	390.60	STD	41	57	96	106	119	129	137	149	160	183
						ALT	51	71	96	106	119	129	137	149	160	183
		8.2	0.32	80.52	390.00	STD	42	59	99	110	123	134	142	154	166	190
						ALT	53	74	99	110	123	134	142	154	166	190
		8.4	0.33	82.44	389.60	STD	43	61	102	112	126	137	146	158	170	195
						ALT	54	76	102	112	126	137	146	158	170	195
		8.7	0.34	85.32	389.00	STD	45	63	106	116	131	142	151	164	177	202
						ALT	56	79	106	116	131	142	151	164	177	202
		9.3	0.37	91.07	387.80	STD	48	67	113	124	140	152	161	175	189	205
						ALT	60	84	113	124	140	152	161	175	189	216
		9.5	0.37	92.98	387.40	STD	49	69	115	127	143	155	165	179	193	205
						ALT	61	86	115	127	143	155	165	179	193	221
		10.3	0.41	100.61	385.80	STD	53	75	125	138	155	168	179	194	205	205
						ALT	67	93	125	138	155	168	179	194	209	239
		11.1	0.44	108.20	384.20	STD	57	80	135	149	167	181	193	205	205	205
						ALT	72	100	135	149	167	181	193	209	225	258
		11.9	0.47	115.77	382.60	STD	61	86	144	159	179	194	205	205	205	205
						ALT	77	108	144	159	179	194	207	224	241	276
		12.0	0.47	116.71	382.40	STD	62	87	146	161	181	196	205	205	205	205
						ALT	78	109	146	161	181	196	208	226	243	279
		12.7	0.50	123.30	381.00	STD	66	92	154	170	191	205	205	205	205	205
						ALT	82	115	154	170	191	207	220	239	258	295
18	457.2	4.8	0.19	53.55	447.60	STD	22	31	52	57	64	70	74	80	87	99
						ALT	28	39	52	57	64	70	74	80	87	99
		5.2	0.20	57.96	446.80	STD	24	33	56	62	70	75	80	87	94	107
						ALT	30	42	56	62	70	75	80	87	94	107
		5.6	0.22	62.36	446.00	STD	26	36	60	67	75	81	86	94	101	116
						ALT	32	45	60	67	75	81	86	94	101	116
		6.0	0.24	66.76	445.20	STD	28	39	65	71	80	87	93	100	108	124
						ALT	34	48	65	71	80	87	93	100	108	124
		6.4	0.25	71.15	444.40	STD	29	41	69	76	86	93	99	107	115	132
						ALT	37	51	69	76	86	93	99	107	115	132
		7.1	0.28	78.81	443.00	STD	33	46	77	84	95	103	110	119	128	147
						ALT	41	57	77	84	95	103	110	119	128	147
		7.9	0.31	87.53	441.40	STD	36	51	85	94	106	115	122	132	142	163
						ALT	45	64	85	94	106	115	122	132	142	163
		8.2	0.32	90.79	440.80	STD	38	53	88	98	110	119	127	137	148	169
						ALT	47	66	88	98	110	119	127	137	148	169
		8.4	0.33	92.97	440.40	STD	39	54	91	100	112	122	130	141	151	173
						ALT	48	68	91	100	112	122	130	141	151	173
		8.7	0.34	96.22	439.80	STD	40	56	94	104	116	126	134	146	157	180
						ALT	50	70	94	104	116	126	134	146	157	180
		9.3	0.37	102.72	438.60	STD	43	60	100	111	124	135	144	156	168	192
						ALT	53	75	100	111	124	135	144	156	168	192
		9.5	0.37	104.88	438.20	STD	44	61	102	113	127	138	147	159	171	196
						ALT	55	76	102	113	127	138	147	159	171	196
		10.3	0.41	113.51	436.60	STD	47	66	111	123	138	149	159	172	186	205
						ALT	59	83	111	123	138	149	159	172	186	213
		11.1	0.44	122.11	435.00	STD	51	71	120	132	149	161	171	186	200	205
						ALT	64	89	120	132	149	161	171	186	200	229
		11.9	0.47	130.68	433.40	STD	55	77	128	142	159	173	184	199	205	205
						ALT	68	96	128	142	159	173	184	199	215	246
		12.0	0.47	131.74	433.20	STD	55	77	129	143	161	174	185	201	205	205
						ALT	69	96	129	143	161	174	185	201	216	248
		12.7	0.50	139.21	431.80	STD	58	82	137	151	170	184	196	205	205	205
						ALT	73	102	137	151	170	184	196	213	229	250
		14.0	0.55	153.01	429.20	STD	64	90	151	167	187	203	205	205	205	205
						ALT	80	113	151	167	187	203	216	234	250	250
		14.3	0.56	156.18	428.60	STD	66	92	154	170	191	205	205	205	205	205
						ALT	82	115	154	170	191	207	221	239	250	250

API 5L Standard Weights Plain End Line Pipe Dimensions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Nominal Size Diameter	Specified Outside Diameter	Specified Wall Thickness		Weight	Calculated Inside Diameter	Minimum Test Pressure (kPa x 100)									
	D (mm)	(mm)	(in)	(kg/m)	d (mm)		Grade A	Grade B	Grade X42	Grade X46	Grade X52	Grade X56	Grade X60	Grade X65	Grade X70	Grade X80
20	508	4.4	0.17	54.64	499.20	STD	18	25	45	50	56	61	65	70	76	87
						ALT	23	32	45	50	56	61	65	70	76	87
		4.8	0.19	59.56	498.40	STD	20	28	49	54	61	66	71	77	82	94
						ALT	25	35	49	54	61	66	71	77	82	94
		5.2	0.20	64.48	497.60	STD	21	30	53	59	66	72	76	83	89	102
						ALT	27	38	53	59	66	72	76	83	89	102
		5.6	0.22	69.38	496.80	STD	23	32	58	63	71	77	82	89	96	110
						ALT	29	41	58	63	71	77	82	89	96	110
		6.4	0.25	79.16	495.20	STD	26	37	66	73	82	88	94	102	110	126
						ALT	33	46	66	73	82	88	94	102	110	126
		7.1	0.28	87.70	493.80	STD	29	41	73	81	91	98	104	113	122	140
						ALT	37	51	73	81	91	98	104	113	122	140
		7.9	0.31	97.43	492.20	STD	33	46	81	90	101	109	116	126	136	155
						ALT	41	57	81	90	101	109	116	126	136	155
		8.2	0.32	101.07	491.60	STD	34	47	84	93	105	113	121	131	141	161
						ALT	42	59	84	93	105	113	121	131	141	161
		8.4	0.33	103.49	491.20	STD	35	49	86	95	107	116	124	134	144	165
						ALT	43	61	86	95	107	116	124	134	144	165
		8.7	0.34	107.12	490.60	STD	36	50	89	99	111	120	128	139	150	171
						ALT	45	63	89	99	111	120	128	139	150	171
		9.3	0.37	114.37	489.40	STD	38	54	96	105	119	129	137	148	160	183
						ALT	48	67	96	105	119	129	137	148	160	183
		9.5	0.37	116.78	489.00	STD	39	55	98	108	121	131	140	151	163	187
						ALT	49	69	98	108	121	131	140	151	163	187
		10.3	0.41	126.41	487.40	STD	43	60	106	117	131	142	151	164	177	203
						ALT	53	75	106	117	131	142	151	164	177	203
		11.1	0.44	136.01	485.80	STD	46	64	114	126	142	153	163	177	191	205
						ALT	57	80	114	126	142	153	163	177	191	218
		11.9	0.47	145.58	484.20	STD	49	69	122	135	152	164	175	190	205	205
						ALT	61	86	122	135	152	164	175	190	205	234
		12.0	0.47	146.78	484.00	STD	50	69	123	136	153	166	176	191	205	205
						ALT	62	87	123	136	153	166	176	191	206	236
		12.7	0.50	155.12	482.60	STD	53	74	131	144	162	176	187	203	205	205
						ALT	66	92	131	144	162	176	187	203	218	250
		14.0	0.55	170.55	480.00	STD	58	81	144	159	179	193	205	205	205	205
						ALT	72	101	144	159	179	193	206	223	241	250
		14.3	0.56	174.10	479.40	STD	59	83	147	162	182	198	205	205	205	205
						ALT	74	103	147	162	182	198	210	228	246	250
		15.9	0.63	192.95	476.20	STD	66	92	163	180	203	205	205	205	205	205
						ALT	82	115	163	180	203	220	234	250	250	250

ERW BS 1387 - 1985 Pipe for Ordinary Users (Medium Pipe)

Pipa Baja Medium Hitam (BSP)
Pipa Baja Medium Galvanis (GSP)

Grade	Nominal Size		Diameter Luar				Tebal	Berat
			Minimum		Maximum			
	In	mm	in	mm	in	mm	mm	Kg/m
Medium	1/2	15	0.831	21.1	0.856	21.7	2.60	1.21
	3/4	20	0.831	26.6	1.072	27.2	2.60	1.56
	1	25	1.047	33.4	1.346	34.2	3.20	2.41
	1 1/4	32	1.316	42.1	1.678	42.9	3.20	3.10
	1 1/2	40	1.657	48	1.919	48.8	3.20	3.57
	2	50	1.889	59.8	2.394	60.8	3.60	5.03
	2 1/2	65	2.354	75.4	3.014	76.6	3.60	6.43
	3	80	2.969	88.1	3.524	89.5	4.00	8.37
	4	100	3.459	113.3	4.524	114.9	4.50	12.20
	5	125	5.461	138.7	5.535	140.6	5.00	16.60
	6	150	6.46	164.1	6.539	166.1	5.00	19.70

Komposisi Kimia

Karbon	Manganase	Sulfur	Phasporus
0.20 % Max	1.20 % Max	0.045 % Max	0.045 % Max

Sifat Mekanik

Batas Mulur (N/mm2)	Kuat Tarik (N/mm2)	Regangan (Min)
195	320 - 460	20%

Panjang Pipa : 6 meter per batang
Toleransi panjang : ± 2%
Toleransi Tebal : Plus tidak terbatas
Minus (-) 12,5%

Catatan :
Pengujian Tekanan Air (Hydrostatic Test Pressure) : 50 kg/cm²
Pengujian Hydrostatic dapat diganti dengan Pegujian Ultrasonic atau Pengujian Eddy Current

EXPERIENCES

1. Spiral Line Pipe In Oil & Gas Industry

No.	Customer / Project	OD (inch)	Thickness (mm)	Volume (Ton)	Spec	Year
1.	PT JOB Pertamina-Medco E&P Tomori Sulawesi /Konstruksi Sipil Tomori Sulawesi	36,30	19.05, 15.87	3.736	ASTM A252 Gr. 2	2012
2.	PT Tripatra Engineers & Constructors/Senoro Development Project	30	17,55	5.783	API 5 L PSL 2	2012
3.	PT PGN, Tbk/CP 10 project	24	14,27	6.124	API 5 L X65	2013
4.	PT Pertagas/ Arun Belawan Project	24	12,7	3.602	API 5 L X52	2013
5.	PT Pertamina EP	30	12	372	ASTM A252 Gr. 2	2013
6.	Medco Tomori	36	19,05	2.775	ASTM A252 Gr. 2	2014
7.	Total E&P Indonesie	16	12,7	421	ASTM A252 Gr. 2	2014
8.	PT. PGN Region Jawa	16	16,6	2.738	API 5 L X-46	2015
9.	Byucksan Engineering Co. Tld, KSO	16	12,7	1.000	API 5 L X-52	2016

2. Spiral SAW Pile Pipe

No.	Customer / Project	OD (inch)	Thickness (mm)	Volume (Ton)	Spec	Year
1.	Mitsui & co (Australia) Ltd/LNG-PNG Papua Nugini	12,18,24	12,7	8.555	ASTM A252 Gr.3	2010-2011
2.	PT Adhi Karya/Pelabuhan Teluk Lamong, Jawa Timur	32,40	12,14,19	14.753	ASTM A252	2010
3.	PT. Posco E&C Indonesia/Krakatau-Posco, Cilegon	22,28	9,12	7.102	ASTM A252 Gr. 2	2011
4.	Performance Pipe Sdn. Bhd/SLNG Secondary Berth, Malaysia	56, 36	22, 19	2.623	BSEN 10219	2012
5.	PT KBS/ Jetty Dermaga 5, 6 & access road project,	35, 40	12, 19	7.195	ASTM A252 Gr. 2	2013
6.	PT Agro Nusa Abadi/ Astra Agro Project	24	14	1.030	ASTM A252 Gr. 2	2013
7.	PT Great Color Energy/ PLTM Bungin	47	6 dan 8	879	AWWA C200	2014
8.	PT Wijaya Karya (Persero), Tbk/ Tanjung Uban	36,40	14, 16, 18, 19	822	ASTM A252 Gr. 3	2014
9.	PT Wijaya Karya (Persero), Tbk/ Pulau Sambu	28, 32, 40	14, 16	3.202	ASTM A252 Gr. 3	2014
10.	PT Waskita Karya/ Pelabuhan Kuala Tanjung	32	16	3.432	ASTM A252 Gr. 3	2015
11.	PT Pembangunan Perumahan (Persero)/ Pelabuhan Kuala Tanjung	32	16	13.765	ASTM A252 Gr. 3	2015-2016

3. ERW/HFRW line Pipe

No.	Customer / Project	OD (inch)	Thickness (mm)	Volume (Ton)	Spec	Year
1.	PT Tripatra/NGL Project-Pertagas	8.62	6.35	2,898	API 5L Gr. B	2010
2.	PT. Energi Equity Epic (Sengkang) /CoatedLinepipe Project	8.62	8.18	1,276	API 5L Gr. B	2010
3.	PT. Chevron Pasivic Indonesia /Blanket Purchase Contract 2011	3.5-12	5.49-9.53	36,000	API 5L Gr. B & ASTM A.252 Gr. 2	2011-2013
4.	Conoco Philips /Letang Tengah Rawa Optimization (LTRO)	12	6.35-8.74	2,804	API 5L X-52 (Sour Service)	2011
5.	PT PGN (Persero), Tbk	12, 16	10.31,12.7	3,659	API 5 L PSL 2	2012
6.	PT Chevron Pasivic Indonesia/Blanket Purchase Contract 2011	3.5-12	5.49-9.53	36.000	API 5L Gr. B & ASTM A.252 Gr.2	2011-2013
7.	Conoco Philips/ Letang Tengah Rawa Optimization (LTRO)	12	6.35-8.74	2.804	API 5L X-52 (Sour Service)	2011
8.	PT PGN (Persero), Tbk	12, 16	10.31, 12.7	3.659	API 5 L PSL 2	2012
9.	Salamander Energy (Bangkanai) Ltd	4	6,02	385	API 5 L X52	2013
10.	PT Pertamina/ Pertamina gas kota project	8	8,18	1.175	API 5L Gr.B	2013
11.	PT PGN Tbk/PGN SBU II Project	12	9,53	296	API 5L Gr.B	2014
12.	PT Wijaya Karya (Persero), Tbk/ Tanjung Uban	6-20	7.11-15.06	1.456	ASTM A53 Gr A&B	2015
13.	PT Wijaya Karya (Persero), Tbk/ Pulau Sambu	4-20	6.02-9.53	1.317	API 5 L PSL 1	2015
14.	PT Chevron Pacific Indonesia/ Petapahan Kota Batak Project	18	9.53 & 12.7	2.161	API 5 L X52	2016
15.	PT Pertamina (Persero)/ Avtur Soekarno Hatta Terminal 3	20	15,09	3.668	API 5L Gr.B	2016

4. Coating

No.	Customer / Coating Type	OD (inch)	Volume (Ton)	Year
1.	Conoco Philips/Letang Tengah Rawa Optimization (LTRO)/ 3LPE	12	56.700	2011
2.	PT Pertagas/3LPE	8	41.274	2011
3.	CV Cahaya Budi Perkasa/TOTAL E&P INDONESIE/CWC	14	6.699	2012
4.	PT PGN, Tbk/ CP 7, 9 & 10 Project/ 3LPE & Internal Epoxy	24	91.190	2013
5.	PT Citra Panji Manunggal/ Talisman Project/ FBE& CWC	16	36.368	2013
6.	PT Pertamina/ Pertamina gas kota project/ Asphalt Enemel	8	18.295	2013
7.	PT Raga Perkasa Ekaguna/ CNOOC Project/3LPE&CWC	10	13.108	2014
8.	PT. PGN Region Jawa	16	21.820	2015
9.	Konsorsium WIKA - Rabana Kelsri/ Gresik Semarang - Pertagas Project	28	615.384	2015
10.	PT Menara Gading Putih/ Porong Grati - Pertagas Project	18	46.286	2015
11.	JO. Consorsium PCS/ Husky Project	16	133.060	2016