

## Mechanical, Hydraulical, Statical Values

Basic Pipe Data							Weight of 1 Meter					Flow Data		Statical			
Outside Dia		Allowable Working Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration
		GR-A	GR-B														
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
3 1/2	88.9	92	106	5/32	3.97	4	8.3	10.5	0.4	17	4.2	7.3	42	10.6	96	22	3.0
3 1/2	88.9	111	129	3/16	4.76	4	9.9	12.1	0.4	17	4.0	7.1	40	12.6	112	25	3.0
3 1/2	88.9	129	151	7/32	5.56	4	11.4	13.6	0.4	17	3.8	7.0	38	14.5	127	29	3.0
4 1/2	114.3	72	84	5/32	3.97	4	10.8	13.8	0.6	22	7.6	9.8	76	13.7	210	37	3.9
4 1/2	114.3	87	101	3/16	4.76	4	12.9	15.8	0.6	22	7.4	9.7	74	16.4	246	43	3.9
4 1/2	114.3	100	117	7/32	5.56	4	14.9	17.8	0.6	22	7.1	9.5	71	19.0	281	49	3.9
4 1/2	114.3	115	134	1/4	6.35	4	16.9	19.7	0.6	22	6.9	9.4	69	21.5	315	55	3.8
6 5/8	168.3	44	57	5/32	3.97	4	16.1	29.6	0.8	31	18.2	15.2	182	20.5	692	82	5.8
6 5/8	168.3	58	68	3/16	4.76	4	19.2	23.7	0.8	31	17.8	15.1	178	24.4	818	97	5.8
6 5/8	168.3	69	80	7/32	5.56	4	22.3	26.7	0.8	31	17.5	14.9	175	28.4	941	112	5.8
6 5/8	168.3	78	91	1/4	6.35	4	25.4	29.7	0.8	31	17.1	14.8	171	32.3	1060	126	5.7
6 5/8	168.3	87	102	9/32	7.14	4	28.4	32.7	0.8	31	16.7	14.6	167	36.1	1176	140	5.7
6 5/8	168.3	98	114	5/16	7.94	4	31.4	35.7	0.8	31	16.4	14.4	164	39.9	1288	153	5.7
6 5/8	168.3	117	137	3/8	9.53	4	37.3	41.5	0.8	31	15.7	14.1	157	47.4	1502	179	5.6
8 5/8	219.1	38	44	5/32	3.97	6	21.1	29.9	1.1	40	31.1	19.9	311	26.8	1552	142	7.6
8 5/8	219.1	45	52	3/16	4.76	6	25.2	34.0	1.1	40	30.7	19.8	307	32.0	1842	168	7.6
8 5/8	219.1	52	61	7/32	5.56	6	19.3	38.0	1.1	40	30.2	19.6	302	37.2	2126	194	7.6
8 5/8	219.1	60	70	1/4	6.35	6	33.3	42.0	1.1	40	29.7	19.4	297	42.4	2403	219	7.5
8 5/8	219.1	69	79	9/32	7.14	6	37.3	46.0	1.1	40	29.2	19.3	292	47.5	3674	144	7.5
8 5/8	219.1	75	87	5/16	7.94	6	41.3	49.9	1.1	40	28.7	19.1	287	52.6	2938	268	7.5
8 5/8	219.1	90	105	3/8	9.53	6	49.2	57.6	1.1	40	27.8	18.8	278	62.6	3449	315	7.5
8 5/8	219.1	105	122	7/16	11.11	6	57.0	65.3	1.1	40	26.8	18.5	268	72.5	3936	359	7.4

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight Per 1m' of pipe					Flow Data		Statical			
Outside Dia		Allowable Working Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration
		GR-B	X42														
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
10 3/4	273.1	35	42	5/32	3.97	6	26.3	37.6	1.4	42	50.3	25.3	503	33.5	3037	222	9.5
10 3/4	273.1	42	51	3/16	4.76	6	31.5	42.7	1.4	42	49.7	25.2	497	40.1	3613	265	9.5
10 3/4	273.1	49	59	7/32	5.56	6	36.7	47.7	1.4	42	49.1	25.0	491	46.6	4178	306	9.5
10 3/4	273.1	56	67	1/4	6.35	6	41.8	52.8	1.4	42	48.4	24.8	484	53.1	4733	347	9.4
10 3/4	273.1	63	76	9/32	7.14	6	46.8	57.8	1.4	42	47.8	24.7	478	59.6	5278	387	9.4
10 3/4	273.1	70	84	5/16	7.94	6	51.9	62.8	1.4	42	47.2	24.5	472	66.0	5814	426	9.4
10 3/4	273.1	84	101	3/8	9.53	6	61.9	72.7	1.4	42	46.0	24.2	460	78.8	6855	502	9.3
10 3/4	273.1	98	118	7/16	11.11	6	71.8	82.4	1.4	42	44.8	23.9	448	91.3	7857	576	9.3
10 3/4	273.1	112	135	1/2	12.7	6	81.5	92.0	1.4	42	43.6	23.6	436	103.7	8823	646	9.2
12 3/4	323.9	30	35	5/32	3.97	8	31.3	49.1	1.6	57	70.6	30.0	706	39.8	5102	315	11.3
12 3/4	323.9	35	43	3/16	4.76	8	37.5	55.2	1.6	57	69.9	29.8	699	47.7	6078	375	11.3
12 3/4	323.9	41	50	7/32	5.56	8	43.6	61.2	1.6	57	69.2	29.7	692	55.5	7039	435	11.3
12 3/4	323.9	47	57	1/4	6.35	8	49.7	67.2	1.6	57	68.4	29.5	684	63.3	7985	493	11.2
12 3/4	323.9	53	64	9/32	7.14	8	55.8	73.2	1.6	57	67.7	29.4	677	71.0	8917	551	11.3
12 3/4	323.9	59	71	5/16	7.94	8	61.8	79.2	1.6	57	67.0	29.2	670	78.7	9834	607	11.2
12 3/4	323.9	71	85	3/8	9.53	8	73.8	91.0	1.6	57	65.5	28.9	655	93.9	11627	718	11.1
12 3/4	323.9	83	99	7/16	11.11	8	85.7	102.7	1.6	57	64.1	28.6	641	109.0	13365	825	11.1
12 3/4	323.9	95	114	1/2	12.70	8	97.5	114.2	1.6	57	62.7	28.2	627	124.0	15049	929	11.0
14	355.6	27	32	5/32	3.97	8	34.4	54.1	1.8	63	86.4	33.2	864	43.8	6777	381	12.4
14	355.6	32	39	3/16	4.76	8	41.2	60.7	1.8	63	85.6	33.0	856	52.4	8087	454	12.4
14	355.6	38	45	7/32	5.56	8	48.0	67.4	1.8	63	84.7	32.8	847	61.0	9361	527	12.4
14	355.6	43	52	1/4	6.35	8	54.7	74.1	1.8	63	83.9	32.7	839	69.6	10627	598	12.4
14	355.6	48	58	9/32	7.14	8	61.4	80.7	1.8	63	83.1	32.5	831	78.1	11875	668	12.3
14	355.6	54	65	5/15	7.94	8	68.1	87.2	1.8	63	82.3	32.4	823	86.6	13106	737	12.3
14	355.6	65	78	3/8	9.53	8	81.3	100.3	1.8	63	80.7	32.1	807	103.4	15516	873	12.2
14	355.6	75	91	7/16	11.11	8	94.4	113.2	1.8	63	79.1	31.7	791	120.1	17859	1004	12.2
14	355.6	86	103	1/2	12.70	8	107.4	126.0	1.8	63	77.5	31.4	775	136.6	20137	1133	12.1
16	406.4	24	28	5/32	3.97	8	39.4	62.0	2.0	71	114.9	32.8	1149	50.1	10159	500	14.2
16	406.4	28	34	3/16	4.76	8	47.2	69.7	2.0	71	113.9	38.1	1139	60.0	12119	596	14.2
16	406.4	33	40	7/32	5.56	8	54.9	77.3	2.0	71	113.0	37.9	1130	69.9	14056	692	14.2
16	406.4	38	45	1/4	6.35	8	62.6	84.9	2.0	71	112.0	37.8	1120	79.7	15970	786	14.2
16	406.4	42	51	9/32	7.14	8	70.3	92.5	2.0	71	111.1	37.6	1111	89.5	17861	879	14.1
16	406.4	47	57	5/16	7.94	8	78.0	100.1	2.0	71	110.2	37.5	1102	99.2	19729	971	14.1
16	406.4	57	68	3/8	9.53	8	93.2	115.2	2.0	71	108.3	37.1	1083	118.6	23397	1151	14.0
16	406.4	66	79	7/16	11.11	8	108.3	130.1	2.0	71	106.5	36.8	1065	137.8	26976	1328	14.0
16	406.4	75	91	1/2	12.70	8	123.3	144.9	2.0	71	104.6	36.5	1046	156.9	30467	1149	13.9

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight of 1 Meter					Flow Data		Statical			
Outside Dia		Allowable Working Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration
		GR-B	X42														
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
18	457.2	21	25	5/32	3.97	8	44.4	69.9	2.3	80	147.4	43.3	1474	56.4	14512	635	16.0
18	457.2	25	30	3/16	4.76	8	53.1	78.6	2.3	80	146.4	43.2	1464	67.6	17324	758	16.0
18	457.2	29	35	7/32	5.56	8	61.9	87.2	2.3	80	145.3	43.0	1453	78.7	20106	880	16.0
18	457.2	34	40	1/4	6.35	8	70.6	95.8	2.3	80	144.2	42.9	1442	89.8	22858	1000	16.0
18	457.2	38	45	9/32	7.14	8	79.3	104.4	2.3	80	143.1	42.7	1431	100.9	25581	1119	15.9
18	457.2	42	50	5/16	7.94	8	87.9	113.0	2.3	80	142.1	42.5	1421	111.9	28275	1237	15.9
18	457.2	50	60	3/8	9.53	8	105.2	130.0	2.3	80	140.0	42.2	1400	133.8	33576	1469	15.8
18	457.2	59	70	7/16	11.11	8	122.3	146.9	2.3	80	137.9	41.9	1379	155.5	38764	1696	15.8
18	457.2	67	80	1/2	12.70	8	139.2	163.7	2.3	80	135.8	41.6	1358	177.1	43839	1918	15.7
20	508	19	23	5/32	3.97	8	49.3	77.8	2.6	88	184.0	48.4	1840	62.8	19959	786	17.8
20	508	23	27	3/16	4.76	8	59.1	87.5	2.6	88	182.8	48.2	1828	75.2	23838	939	17.8
20	508	26	32	7/32	5.56	8	68.8	97.1	2.6	88	181.6	48.1	1816	87.6	27681	1090	17.8
20	508	30	36	1/4	6.35	8	78.6	106.7	2.6	88	180.4	47.9	1804	99.9	31487	1240	17.7
20	508	34	41	9/32	7.14	8	88.2	116.3	2.6	88	179.2	47.8	1792	112.3	35256	1388	17.7
20	508	38	45	5/16	7.94	8	97.9	125.9	2.6	88	178.0	47.6	1780	124.5	38990	1535	17.7
20	508	45	54	3/8	9.53	8	117.1	144.9	2.6	88	175.7	47.3	1757	149.0	46349	1825	17.6
20	508	53	63	7/16	11.11	8	136.2	163.8	2.6	88	173.3	47.0	1733	173.2	53566	2109	17.6
20	508	60	72	1/2	12.70	8	155.1	182.6	2.6	88	171.0	46.7	1710	197.4	60643	2388	17.5
22	558.8	17	21	5/32	3.97	8	54.3	85.7	2.8	104	224.7	53.5	2247	69.1	26622	953	19.6
22	558.8	21	25	3/16	4.76	8	65.1	96.4	2.8	104	223.4	53.3	2234	82.8	31810	1139	19.6
22	558.8	24	29	7/32	5.56	8	75.8	107.0	2.8	104	222.0	53.2	2220	96.4	36954	1323	19.6
22	558.8	27	33	1/4	6.35	8	86.5	117.6	2.8	104	220.7	53.0	2207	110.1	42053	1505	19.5
22	558.8	31	37	9/32	7.14	8	97.2	128.2	2.8	104	219.4	52.9	2194	123.6	47107	1686	19.5
22	558.8	34	41	5/16	7.94	8	107.8	138.8	2.8	104	218.1	52.7	2181	137.2	52118	1865	19.5
22	558.8	41	49	3/8	9.53	8	129.0	159.8	2.8	104	215.4	52.4	2154	164.1	62008	2219	19.4
22	558.8	48	58	7/16	11.11	8	150.1	180.7	2.8	104	212.8	52.1	2128	190.9	71725	2567	19.4
22	558.8	55	66	1/2	12.70	8	171.0	201.4	2.8	104	210.3	51.7	2103	217.6	81271	2909	19.3
24	609.6	16	19	5/32	3.97	10	59.3	102.0	3.1	113	265.7	58.2	2657	75.4	34624	1136	21.4
24	609.6	19	23	3/16	4.76	10	71.0	113.7	3.1	113	264.3	58.0	2643	90.4	41387	1358	21.4
24	609.6	22	26	7/32	5.56	10	82.8	125.3	3.1	113	262.8	57.8	2628	105.3	48096	1578	21.4
24	609.6	25	30	1/4	6.35	10	94.5	136.9	3.1	113	261.4	57.7	2614	120.2	54752	1796	21.3
24	609.6	28	34	9/32	7.14	10	106.1	148.4	3.1	113	260.0	57.5	2600	135.0	61355	2013	21.3
24	609.6	31	38	5/16	7.94	10	117.8	160.6	3.1	113	258.5	57.4	2585	149.8	67905	2228	21.3
24	609.6	38	45	3/8	9.53	10	141.0	182.9	3.1	113	255.7	57.1	2557	179.3	80849	2653	21.2
24	609.6	44	53	7/16	11.11	10	164.0	205.7	3.1	113	252.8	56.7	2528	208.7	93586	3070	21.2
24	609.6	50	60	1/2	12.70	10	186.9	228.4	3.1	113	250.0	56.4	2500	237.8	106118	3482	21.1

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight of 1 Meter					Flow Data		Statical			
Outside Dia	Allowable Working Pressure		Wall thickness	C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration		
	GR-A	GR-B															
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
26	660.4	15	71	5/32	3.97	10	64.2	110.7	3.3	123	314.2	63.2	3142	81.7	44088	1355	23.2
26	660.4	17	21	3/16	4.76	10	77.0	123.3	3.3	123	312.6	63.1	3126	98.0	52715	1596	23.2
26	660.4	20	24	7/32	5.56	10	89.7	135.9	3.3	123	311.0	62.9	3110	114.2	61279	1856	23.2
26	660.4	23	28	1/4	6.35	10	102.4	148.5	3.3	123	309.5	62.8	3095	13.3	67980	2113	23.1
26	660.4	26	31	9/32	7.14	10	115.1	161.1	3.3	123	307.9	62.6	3079	146.4	78219	2369	23.1
26	660.4	29	35	5/16	7.94	10	127.7	173.6	3.3	123	306.3	62.5	3063	162.5	86596	2623	23.1
26	660.4	35	42	3/8	9.53	10	152.9	198.5	3.3	123	303.2	62.1	3032	194.5	103165	3124	23.0
26	660.4	41	49	7/16	11.11	10	177.9	223.3	3.3	123	300.1	61.8	3001	226.4	119490	3619	23.0
26	660.4	46	56	1/2	12.70	10	202.9	248.0	3.3	123	297.1	61.5	2971	258.1	135474	4106	22.9
28	711.2	13	16	5/32	3.97	10	69.2	119.3	3.6	132	366.7	68.3	3667	88.1	55136	1551	25.0
28	711.2	16	19	3/16	4.76	10	83.0	133.0	3.6	132	365.0	68.2	3650	105.6	65942	1854	25.0
28	711.2	19	23	7/32	5.56	10	96.7	146.6	3.6	132	363.3	68.0	3633	123.0	76674	2156	25.0
28	711.2	22	26	1/4	6.35	10	110.4	160.1	3.6	132	361.6	67.9	3616	140.4	87334	2456	24.9
28	711.2	24	29	9/32	7.14	10	124.0	173.7	3.6	132	359.9	67.7	3599	157.8	97921	2754	24.9
28	711.2	27	32	5/16	7.94	10	137.7	187.2	3.6	132	358.2	67.5	3582	175.1	108436	3049	24.9
28	711.2	32	39	3/8	9.53	10	164.8	214.1	3.6	132	354.8	67.2	3548	209.7	129252	3635	24.8
28	711.2	38	45	7/16	11.11	10	191.9	240.9	3.6	132	351.5	66.9	3515	244.1	149783	4212	24.8
28	711.2	43	52	1/2	12.70	10	218.8	267.6	3.6	132	348.2	66.6	3482	278.3	170032	4782	24.7
28	711.2	48	58	9/16	14.29	10	245.6	294.2	3.6	132	344.8	66.3	3448	312.4	190001	5343	24.7
30	762	13	15	5/32	3.97	10	74.2	128.0	3.8	142	423.2	73.4	4232	94.4	67891	1782	26.8
30	762	15	18	3/16	4.76	10	88.9	142.6	3.8	142	421.4	73.2	4214	113.1	81214	2132	26.8
30	762	18	21	7/32	5.56	10	103.7	157.2	3.8	142	419.6	73.1	4196	131.9	94454	2479	26.8
30	762	20	24	1/4	6.35	10	118.3	171.8	3.8	142	417.7	72.9	4177	150.5	107609	2824	26.7
30	762	23	27	9/32	7.14	10	133.0	186.3	3.8	142	415.9	72.8	4159	169.2	120682	3167	26.7
30	762	25	30	5/16	7.94	10	147.6	200.8	3.8	142	414.1	72.6	4141	187.8	133671	3508	26.7
30	762	30	36	3/8	9.53	10	176.8	229.7	3.8	142	410.5	72.3	4105	224.9	159402	4184	26.6
30	762	35	42	7/16	11.11	10	205.8	258.5	3.8	142	406.9	72.0	4069	261.8	184805	4851	26.6
30	762	40	48	1/2	12.70	10	234.7	287.2	3.8	142	403.3	71.7	4033	298.6	209884	5509	26.5
30	762	45	54	9/16	14.29	10	263.5	315.7	3.8	142	399.7	71.3	3997	335.2	234640	6159	26.5

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight of 1 Mmeter					Flow Data		Pipe Statical Values			
Outside Dia	Allowable Working Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration	
	GR-B	X42	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm	
32	812.8	12	14	5/32	3.97	10	79.2	136.6	4.1	150	483.8	78.5	4838	100.7	82475	2029	28.6
32	812.8	14	17	3/16	4.76	10	94.9	152.2	4.1	150	481.9	78.3	4819	120.7	98680	2428	28.6
32	812.8	16	20	7/32	5.56	10	110.6	167.8	4.1	150	479.9	78.2	4799	140.7	114789	2825	28.6
32	812.8	19	23	1/4	6.35	10	126.3	183.4	4.1	150	478.9	78.0	4780	160.7	130802	3219	28.5
32	812.8	21	25	9/32	7.14	10	141.9	198.9	4.1	150	476.0	77.9	4760	180.6	146721	3610	28.5
32	812.8	24	28	5/16	7.94	10	157.6	214.4	4.1	150	474.1	77.7	4741	200.4	162545	4000	28.5
32	812.8	28	34	3/8	9.53	10	189.7	245.3	4.1	150	470.2	77.4	4702	240.1	193911	4771	28.4
32	812.8	33	40	7/16	11.11	10	219.7	276.1	4.1	150	466.4	77.1	4664	297.5	224902	5534	28.4
32	812.8	38	45	1/2	12.70	10	256.6	306.8	4.1	150	462.5	76.7	4625	318.8	255522	6287	28.3
32	812.8	42	51	9/16	14.29	10	281.4	337.3	4.1	150	458.7	76.4	4587	357.9	285774	7032	28.3
36	914.4	13	15	3/16	4.76	10	106.8	171.5	4.6	205	615.0	88.5	6150	135.9	140778	3079	32.2
36	914.4	15	18	7/32	5.56	10	124.5	189.1	4.6	205	612.8	88.3	6128	158.4	163813	3583	32.2
36	914.4	17	20	1/4	6.35	10	142.2	206.6	4.6	205	610.6	88.2	6106	180.9	186727	4084	32.1
36	914.4	19	23	9/32	7.14	10	159.8	224.2	4.6	205	608.4	88.0	6084	203.3	209520	4583	32.1
36	914.4	21	25	5/16	7.94	10	177.4	241.6	4.6	205	606.2	87.9	6062	225.7	232193	5079	32.1
36	914.4	25	30	3/8	9.53	10	212.6	276.5	4.6	205	601.8	87.5	6018	270.4	277180	6063	32.0
36	914.4	29	35	7/16	11.11	10	247.5	311.3	4.6	205	597.4	87.2	5974	314.9	321691	7036	32.0
36	914.4	34	40	1/2	12.70	10	282.4	345.9	4.6	205	593.1	86.9	5931	359.3	365729	7999	31.9
36	914.4	38	45	9/16	14.29	10	317.2	380.4	4.6	205	588.8	86.6	5888	403.5	409297	8952	31.8
40	1016	11	14	3/16	4.76	13	118.8	212.1	5.1	227	755.0	96.0	7550	151.1	193414	3807	35.8
40	1016	13	16	7/32	5.56	13	138.5	231.6	5.1	227	752.6	97.9	7526	176.1	225120	4431	35.7
40	1016	15	18	1/4	6.35	13	158.1	251.1	5.1	227	750.1	97.7	7501	201.1	256677	5053	35.7
40	1016	17	20	9/32	7.14	13	177.7	270.6	5.1	227	747.7	97.6	7477	226.1	288084	5671	35.7
40	1016	19	23	5/16	7.94	13	193.3	290.1	5.1	227	745.3	97.4	7453	251.0	319342	6286	35.7
40	1016	23	27	3/8	9.53	13	236.4	328.9	5.1	227	740.4	97.1	7404	300.8	381413	7508	35.6
40	1016	26	32	7/16	11.11	13	275.4	367.5	5.1	227	733.6	96.8	7356	350.4	442894	8718	35.6
40	1016	30	36	1/2	12.70	13	314.2	406.1	5.1	227	730.8	96.5	7308	399.8	503789	9917	35.5
40	1016	34	41	9/16	14.29	13	353.0	444.5	5.1	227	726.0	96.1	7260	449.0	564101	11104	35.4
42	1066.8	11	13	3/16	4.76	13	124.7	222.8	5.4	238	835.3	103.1	8353	158.7	224051	4200	37.6
42	1066.8	13	15	7/32	5.56	13	145.4	243.4	5.4	238	832.3	103.0	8327	185.0	260809	4890	37.5
42	1066.8	14	17	1/4	6.35	13	166.1	263.9	5.4	238	830.2	102.8	8302	211.3	297401	5576	37.5
42	1066.8	16	19	9/32	7.14	13	186.7	284.3	5.4	238	827.6	102.7	8276	237.5	333892	6257	37.5
42	1066.8	18	22	5/16	7.94	13	207.3	304.8	5.4	238	825.0	102.5	8250	263.7	370092	6938	37.5
42	1066.8	22	26	3/8	9.53	13	248.4	345.6	5.4	238	819.9	102.2	8199	316.0	442127	8289	37.4
42	1066.8	25	30	7/16	11.11	13	289.3	386.2	5.4	238	814.8	101.9	8148	368.1	513510	9627	37.4
42	1066.8	29	34	1/2	12.70	13	330.1	426.8	5.4	238	809.8	101.5	8098	420.0	584245	10953	37.3
42	1066.8	32	39	9/16	14.29	13	370.9	467.2	5.4	238	804.7	101.2	8047	471.8	654336	12267	37.2
42	1066.8	36	43	5/8	15.88	13	411.4	507.4	5.4	238	799.9	100.9	7997	523.4	723787	13569	37.2

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight of 1 Meter					Flow Data		Statical			
Outside Dia		Permissible Work Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration
		GR-B	X42														
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
46	1168.4	10	12	3/16	4.76	13	136.7	244.3	5.9	260	1008.0	113.3	10080	173.9	294699	50445	41.2
46	1168.4	11	14	7/32	5.56	13	159.3	266.8	5.9	260	1005.2	113.1	10052	202.7	343114	873	41.1
46	1168.4	13	16	1/4	6.35	13	182.0	289.3	5.9	260	1002.3	113.0	10023	231.5	391331	6699	41.1
46	1168.4	15	18	9/32	7.14	13	204.6	311.8	5.9	260	999.5	112.8	9995	260.3	439349	7521	41.1
46	1168.4	16	20	5/16	7.94	13	227.2	334.2	5.9	260	996.7	112.7	9967	289.0	487170	8339	41.1
46	1168.4	20	24	3/8	9.53	13	272.2	379.0	5.9	260	991.1	112.3	9911	346.3	582220	9966	41.0
46	1168.4	23	28	7/16	11.11	13	317.2	423.6	5.9	260	958.5	112.0	9855	403.5	676486	11580	40.9
46	1168.4	26	31	1/2	12.70	13	362.0	468.1	5.9	260	979.9	111.7	9799	460.5	769971	13180	40.9
46	1168.4	30	35	9/16	14.29	13	406.7	512.5	5.9	260	974.4	111.4	9744	517.3	862681	14767	40.8
46	1168.4	33	39	5/8	15.88	13	451.2	556.8	5.9	260	968.8	111.1	9688	574.0	954619	16341	40.8
48	1219.2	9	11	3/16	4.76	13	142.6	255.0	6.1	271	1100.4	118.4	11004	181.5	335004	4595	43.0
48	1219.2	11	13	7/32	5.56	13	166.3	278.6	6.1	271	1097.5	118.2	10975	211.6	390075	6399	42.9
48	1219.2	13	15	1/4	6.35	13	189.9	302.0	6.1	271	1094.5	118.1	10945	241.6	449228	7299	42.9
48	1219.2	14	17	9/32	7.14	13	213.5	325.5	6.1	271	1091.6	117.9	10916	271.7	499566	8195	42.9
48	1219.2	16	19	5/16	7.94	13	237.1	348.9	6.1	271	1088.6	117.7	10886	301.6	553988	9088	42.9
48	1219.2	19	23	3/8	9.53	13	284.2	395.7	6.1	271	1082.8	117.4	10828	361.5	662188	10863	42.8
48	1219.2	22	26	7/16	11.11	13	311.1	442.3	6.1	271	1076.9	117.1	10796	421.2	769532	12624	42.7
48	1219.2	25	30	1/2	12.70	13	377.9	488.8	6.1	271	1071.1	116.8	10711	480.7	876026	14371	42.7
48	1219.2	28	34	9/16	14.29	13	424.6	535.2	6.1	271	1065.3	116.5	10653	541.1	981673	16104	42.6
48	1219.2	31	38	5/8	15.88	13	471.1	581.4	6.1	271	1059.5	116.1	10595	599.3	1086479	17823	42.6
50	1270.0	9	11	3/16	4.76	13	148.6	265.8	6.4	282	1196.9	123.4	11996	189.1	978826	5966	44.8
50	1270.0	11	13	7/32	5.56	13	173.3	290.3	6.4	282	1193.8	123.3	11938	220.4	441135	6947	44.7
50	1270.0	12	14	1/4	6.35	13	197.7	314.8	6.4	282	1190.7	123.1	11907	251.8	503209	7925	44.7
50	1270.0	14	16	9/32	7.14	13	222.5	339.2	6.4	282	1187.7	123.0	11877	283.0	565047	8898	44.7
50	1270.0	15	18	5/16	7.94	13	247.0	363.6	6.4	282	1184.6	122.8	11846	341.3	626652	9896	44.7
50	1270.0	18	22	3/8	9.53	13	296.1	412.4	6.4	282	1178.5	122.5	11785	376.7	749162	11798	44.6
50	1270.0	21	25	7/16	11.11	13	345.0	461.0	6.4	282	1172.4	122.2	11724	438.9	870742	13712	44.5
50	1270.0	24	29	1/2	12.70	13	393.8	509.5	6.4	282	1166.3	121.9	11663	501.0	991379	15613	44.5
50	1270.0	27	33	9/16	14.29	13	442.5	557.8	6.4	282	1160.2	121.5	11602	562.9	1111133	17498	44.4
50	1270.0	30	36	5/8	15.88	13	491.0	606.1	6.4	282	1154.2	121.2	11542	624.6	1229954	19369	44.4
52	1320.8	12	14	1/4	6.35	13	205.8	327.5	6.6	293	1291.0	128.2	12910	261.6	566396	8576	46.5
52	1320.8	13	16	9/32	7.14	13	231.4	352.9	6.6	293	1287.8	128.1	12878	294.4	636015	9631	46.5
52	1320.8	15	17	5/16	7.94	13	257.0	378.4	6.6	293	1284.6	127.9	12846	326.9	705408	10682	46.4
52	1320.8	17	21	3/8	9.53	13	308.0	492.1	6.6	293	1278.3	127.6	12783	391.9	843436	12772	46.4
52	1320.8	20	24	7/16	11.11	13	358.9	497.7	6.6	293	1271.9	127.3	12719	456.6	980458	14846	46.3
52	1320.8	23	28	1/2	12.70	13	409.7	530.2	6.6	293	1265.6	126.9	12656	521.2	1116479	16906	46.3
52	1320.8	26	31	9/16	14.29	13	460.4	580.5	6.6	293	1259.3	126.6	12593	585.7	1251503	18951	46.2
52	1320.8	29	35	5/8	15.88	13	510.9	630.7	6.6	293	1252.9	126.3	12529	649.9	1385536	20980	46.2

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight of 1 Meter					Flow Data		Statical			
Outside Dia		Allowable Working Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compr. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Inertia Momentum	Section Modulus	Radius of giration
		GR-B	X42														
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
54	1371.6	11	13	1/4	6.35	13	213.8	340.2	6.9	304	1395.4	133.3	13954	272.0	634604	9253	48.3
54	1371.6	13	15	9/32	7.14	13	240.4	366.7	6.9	304	1392.0	133.1	13920	305.8	712689	10392	48.3
54	1371.6	14	17	5/16	7.94	13	266.9	393.1	6.9	304	1388.7	133.0	13887	339.6	790501	11527	48.2
54	1371.6	17	20	3/8	9.53	13	320.0	445.8	6.9	304	1382.1	132.7	13821	407.0	945306	13784	48.2
54	1371.6	20	23	7/16	11.11	13	372.8	498.4	6.9	304	1375.5	132.3	13755	474.3	1099025	16025	48.1
54	1371.6	22	27	1/2	12.70	13	425.6	550.8	6.9	304	1368.9	132.0	13688	541.5	1251662	18251	48.1
54	1371.6	25	30	9/16	14.29	13	478.3	603.2	6.9	304	1362.3	131.7	13623	608.4	1403224	20461	48.0
54	1371.6	28	34	5/8	15.88	13	530.8	655.4	6.9	304	1355.8	131.4	13558	675.2	1553714	22655	48.0
56	1422.4	11	13	1/4	6.35	13	221.8	353.0	7.2	315	1503.7	138.4	15037	282.1	708111	9957	50.1
56	1422.4	12	15	9/32	7.14	13	249.3	380.4	7.2	315	1500.3	138.2	15003	317.2	795290	11187	50.1
56	1422.4	13	16	5/16	7.94	13	276.9	407.8	7.2	315	1496.9	138.1	14969	352.2	882175	12404	50.0
56	1422.4	16	19	3/8	9.53	13	331.9	462.5	7.2	315	1490.0	137.7	14900	422.2	1055064	14835	50.0
56	1422.4	19	23	7/16	11.11	13	386.8	517.1	7.2	315	1483.1	137.4	14831	490.2	1226784	17249	49.9
56	1422.4	22	26	1/2	12.70	13	441.5	571.5	7.2	315	1476.3	137.1	14763	561.7	1397340	19648	49.9
56	1422.4	24	29	9/16	14.29	13	496.2	625.9	7.2	315	1469.4	136.8	14694	631.2	1566737	22029	49.8
56	1422.4	27	32	5/8	15.88	13	550.7	680.1	7.2	315	1462.6	136.5	14626	700.5	1734980	24395	49.8
60	1524.0	10	12	1/4	6.35	13	237.7	387.4	7.7	337	1732.7	148.5	17327	302.4	871224	11440	53.7
60	1524.0	11	14	9/32	7.14	13	267.2	407.8	7.7	337	1729.0	148.4	17290	340.0	979157	12850	53.7
60	1524.0	13	15	5/16	7.94	13	296.8	437.2	7.7	337	1725.3	148.2	17253	377.6	1086250	14255	53.6
60	1524.0	15	18	3/8	9.53	13	355.8	495.9	7.7	337	1717.9	147.9	17179	542.6	1299426	17053	53.6
60	1524.0	18	21	7/16	11.11	13	414.6	554.5	7.7	337	1710.5	147.6	17105	627.5	1511256	19833	53.5
60	1524.0	20	24	1/2	12.70	13	473.3	612.9	7.7	337	1703.2	147.3	17032	702.2	1721747	22595	53.5
60	1524.0	23	27	9/16	14.29	13	531.9	671.2	7.7	337	1695.8	146.9	16958	776.7	1930905	25350	53.4
60	1524.0	25	30	5/8	15.88	13	590.4	729.4	7.7	337	1688.5	146.6	16885	851.1	2138735	28067	53.4
66	1676.6	10	12	9/32	7.14	13	294.1	449.0	8.4	370	2102.4	163.6	21024	374.1	1304927	15568	59.1
66	1676.6	11	14	5/16	7.94	13	326.6	481.4	8.4	370	2098.3	163.5	20983	415.5	1447858	17373	59.0
66	1676.6	14	16	3/8	9.53	13	391.6	546.0	8.4	370	2090.2	163.1	20902	498.1	1732492	20669	59.0
66	1676.6	16	19	7/16	11.11	13	456.4	610.5	8.4	370	2082.1	162.8	20821	588.6	2015495	24046	58.9
66	1676.6	18	22	1/2	12.70	13	521.1	674.9	8.4	370	2073.9	162.5	20739	682.9	2296874	27402	58.9
66	1676.6	21	25	9/16	14.29	13	585.6	739.2	8.4	370	2065.9	162.2	20659	785.1	2576633	30740	58.8
66	1676.6	23	27	5/8	15.88	13	650.1	803.4	8.4	370	2057.8	161.9	20578	897.1	2854780	34058	58.8
68	1727.2	10	12	9/32	7.14	13	302.8	462.5	8.65	381	2235	168.7	22350	385.8	1427729	16532	60.8
68	1727.2	11	13	5/16	7.94	13	336.6	496.1	8.65	381	2230	168.5	22300	428.8	1584173	18349	60.8
68	1727.2	13	16	3/8	9.53	13	403.7	563	8.65	381	2222	168.2	22220	514.3	1895767	21952	60.7
68	1727.2	15	18	7/16	11.11	13	470.2	629.1	8.65	381	2214	167.9	22140	599	2205623	25540	60.7
68	1727.2	18	21	1/2	12.7	13	537	695.6	8.65	381	2206	167.6	22060	684	2513756	29108	60.6
68	1727.2	20	23	9/16	14.29	13	603.7	762	8.65	381	2198	167.3	21980	769	2820652	32662	60.6
68	1727.2	22	26	5/8	15.88	13	670.2	828.2	8.65	381	2188	166.9	21880	853.7	3125825	36195	60.5
70	1778	10	12	9/32	7.14	13	311.8	476.3	8.9	392	2372	173.8	23720	397.2	1557994	17525	62.6
70	1778	11	13	5/16	7.94	13	346.6	510.9	8.9	392	2367	173.6	23670	441.5	1728788	19446	62.6
70	1778	13	16	3/8	9.53	13	415.6	579.6	8.9	392	2359	173.3	23590	529.5	2068986	23273	62.5
70	1778	15	18	7/16	11.11	13	484	647.7	8.9	392	2351	173	23510	616.7	2407349	27079	62.5
70	1778	17	21	1/2	12.7	13	552.9	716.3	8.9	392	2342	172.7	23420	704.3	2743881	30865	62.4
70	1778	19	23	9/16	14.29	13	621.5	784.6	8.9	392	2332	172.3	23320	791.8	3079111	34636	62.4
70	1778	21	26	5/8	15.88	13	690	852.8	8.9	392	2324	172	23240	879.1	3412521	38386	62.3

## Mechanical, Hydraulical, Statical Values (Cont.)

Basic Pipe Data							Weight of 1 Meter					Flow Data		Statical			
Outside Dia		Allowable Working Pressure		Wall thickness		C-M thickness	Pipe	Pipe + C-M	3 layer coat	Compd. concrete	Water content	Pip. C-M I.D	Cross section	Steel Cross Section	Moment of Inertia	Section Modulus	Radius of giration
		GR-B	X42														
Inch	mm	bar	bar	Inch	mm	mm	Kg	Kg	Kg	Kg	Kg	Cm	Cm <sup>2</sup>	Cm <sup>2</sup>	Cm <sup>4</sup>	Cm <sup>3</sup>	Cm
72	1828,8	9	11	9/32	7.14	13	320.8	488.7	20.1	403	2511	178.8	25109	408.6	1694984	18536	64.4
72	1828,8	10	12	5/16	7.94	13	356.5	524	20.1	403	2508	178.7	25080	454.2	1882399	20586	64.4
72	1828,8	13	15.5	3/8	9.53	13	427.6	594.6	20.1	403	2500	178.4	24996	544.7	2253499	24644	64.3
72	1828,8	15	18	7/16	11.11	13	498	664.4	20.1	403	2488	178	24884	634.4	2620296	28656	64.3
72	1828,8	17	20.5	1/2	12.70	13	568.8	734.6	20.1	403	2480	177.7	24800	724.6	2987458	32671	64.2
72	1828,8	19	23	9/16	14.29	13	639.4	804.6	20.1	403	2472	177.4	24717	814.6	3352712	36666	64.1
72	1828,8	21	25	5/8	15.88	13	710	874.6	20.1	403	2463	177.1	24633	904.4	3716007	40639	64.1
74	1879,6	9	11	9/32	7.14	13	329.7	502.4	20.7	414	2656	183.9	26561	420	1840774	19587	66.2
74	1879,6	10	12	5/16	7.94	13	366.5	538.9	20.7	414	2653	183.8	26533	466.9	2044388	21753	66.2
74	1879,6	12	14.5	3/8	9.53	13	439.5	611.3	20.7	414	2645	183.5	26446	559.9	2447542	26043	66.1
74	1879,6	14	17	7/16	11.11	13	512	683.2	20.7	414	2633	183.1	26330	652.2	2851383	30340	66.1
74	1879,6	16	19	1/2	12.70	13	584.7	755.3	20.7	414	2624	182.8	26245	744.9	3245230	34530	66
74	1879,6	18	21.5	9/16	14.29	13	657.4	827.4	20.7	414	2616	182.5	26159	837.4	3642228	38755	66
74	1879,6	20	24	5/8	15.88	13	730	899.4	20.7	414	2607	182.2	26073	929.8	4037185	42958	65.9
76	1930,4	9	11	9/32	7.14	13	338.7	516.1	21.2	425	2805	189	28055	431.4	1994662	20665	68
76	1930,4	10	12	5/16	7.94	13	374.4	551.5	21.2	425	2800	188.8	27995	497.5	2215408	22953	68
76	1930,4	12	14.5	3/8	9.53	13	451.5	628	21.2	425	2791	188.5	27907	575	2652481	27481	67.9
76	1930,4	14	17	7/16	11.11	13	525.9	701.8	21.2	425	2782	188.2	27818	669.9	3084646	31958	67.9
76	1930,4	16	19	1/2	12.70	13	600.6	776	21.2	425	2773	187.9	27730	765.1	3517399	36442	67.8
76	1930,4	18	21.5	9/16	14.29	13	675.3	850	21.2	425	2764	187.6	27641	860.2	3947993	40903	67.7
76	1930,4	20	24	5/8	15.88	13	749.8	924	21.2	425	2755	187.3	27553	955.1	4376378	45341	67.7
78	1981,2	10	12	5/16	7.94	13	386.4	568.3	21.8	436	2953	193.9	29529	492.2	2395755	24185	69.8
78	1981,2	11.5	14	3/8	9.53	13	463.4	644.7	21.8	436	2944	193.6	29437	590.3	2868564	28958	69.7
78	1981,2	13.5	16	7/16	11.11	13	539.8	720.5	21.8	436	2935	193.3	29346	687.6	3336169	33678	69.6
78	1981,2	15.5	18.5	1/2	12.70	13	616.5	796.6	21.8	436	2925	193	29255	785.4	3804113	38402	69.6
78	1981,2	17.5	21	9/16	14.29	13	693.2	872.7	21.8	436	2916	192.7	29164	883	4270399	43109	69.5
78	1981,2	19	23	5/8	15.88	13	769.7	948.6	21.8	436	2904	192.3	29043	980.5	4734126	47790	69.5
80	2032	9.5	11.5	5/16	7.94	13	396.3	583	22.4	447	3110	199	31102	504.4	2585575	25448	71.6
80	2032	11	13	3/8	9.53	13	475.3	661.4	22.4	447	3101	198.7	31009	605.5	3096083	30473	71.5
80	2032	13	15.5	7/16	11.11	13	553.7	739.2	22.4	447	3091	198.4	30915	705.3	3600946	36033	71.5
80	2032	15	18	1/2	12.70	13	632.4	817.3	22.4	447	3082	198.1	30821	805.7	4106594	40419	71.4
80	2032	17	20.5	9/16	14.29	13	711.1	895.4	22.4	447	3070	197.7	30697	905.8	4609886	45372	71.3
80	2032	19	23	5/8	15.88	13	789.6	973.3	22.4	447	3060	197.4	30604	1005.8	5110773	50303	71.3



# 100” Pipes

Tzinorot is currently entering a new era, an era that includes production of 100” pipes (2.5m).

These new pipes are designed for transmission of water in new lines that “Mekorot” is currently laying out from various desalination facilities towards the central Israeli region, and for construction of a new fifth line to Jerusalem.

The new 100” pipes include a new type of polymer-concrete coating that is suitable for transmission of water. This coating features several special properties such as: Elasticity, Strength and Adhesion and as such provides additional pipe protection for a longer period of time than do conventional Cement Mortar Linings.

Basic Pipe Data							Weight Per 1m of pipe		
Outside Diameter		Allowable Working pressure		Wall Thickness		Cement Coating Thickness	Pipe	Pipe + Internal cement-mortar	TRIO Coating
Inch	mm	Gr-B	X42	Inch	mm	mm	Kg	Kg	Kg
100	2540	12.1	14.5	1/2	12.7	8	790.7	974	50
100	2540	13.6	16.3	9/16	14.3	8	889.0	1072	50
100	2540	15.1	18.1	5/8	15.9	8	987.2	1171	50

