

INSTALLATION CONSIDERATIONS

Excel piping products are designed for potable cold water lateral distribution lines. Although the many applications that Excel 80, 100, 125, 160 and 200 PSI is suited for, some of the more common applications are listed.

- * Irrigation & Sprinkling Systems
- * Ice Rink reffridgerant pipe
- * Swimming Pool suction & return lines
- * Swimming Pool sloar heating lines
- * Shallow well pump distribution lines
- * Lateral distribution supply lines

TRENCHING & BACKFILLING

Trench bottom shall be as consistent as possible & pipe shall be buried 12" below typical ground frost penetration using a minimum buried depth of 18".

EXPANSION, CONTRACTION

Excel pipe expands & contracts more than metal when exposed to temperature extremes. One should allow for a minimum of 6" and generally more than 12" per 100' to compensate for thermal expansion or contraction. (Coefficient of .00007 inch/inch/°F or approximately 1.7"/10° F/200' Length).

CUTTING & CLAMPING

Pipe should be cut squarely with a hacksaw, knife, or tube cutter designed for cutting plastic pipe. Only ALL STAINLESS CLAMPS should be used with Excel flexible pipe, and when buried, it doesn't hurt to add an extra degree of safety by using two clamps per joint with the screw head 180° opposite each other. Insert fittings are meant to "fit" tightly. The tighter the "fit" the better assurance one has of a "water tight" joint.

INSPECTION

Before installing, inspect the pipe for any damage. Damaged spots can be cut out and the pipe recoupled. Never install any pipe that has been "kinked" or damaged in some manner which better judgement would indicate that the damaged area should be removed before installation. Although Excel is manufactured of the highest quality materials, and will withstand many unnatural abuses, it is always wise to assure your system integrity by removing damaged areas.

CODES AND SPECIFICATIONS

EXCEL 80, 100, 125, 160 and 200 PSI PIPE conforms to the following standards.

STANDARD #14 OF THE NATIONAL SANITATION FOUNDATION FOR USE IN PRESSURE POTABLE WATER APPLICATIONS, FOR 800 DESIGN STRESS MATERIALS.

MEETS AND EXCEEDS ASTM D-1248, D-2239, PRODUCT STANDARD PS-11-69 FHA MATERIALS BULLETIN UM 31-D, AND FEDERAL SPECIFICATION L-P 315.

EXCEL 80 PSI CONFORMS TO AN SDR 19

EXCEL 100 PSI CONFORMS TO SDR 15

EXCEL 125 PSI CONFORMS TO SDR 11.5

EXCEL 160 CTS CONFORMS TO SDR 11

EXCEL 160 PSI, I.P.S., CONFORMS TO SDR 9

EXCEL 200 PSI, I.P.S., CONFORMS TO SDR 7

THESE ABOVE STANDARDS ASSURE YOU TO CONSISTENT QUALITY WHILE PROVIDING COST COMPETITIVE INSTALLATION IN ALL ACCEPTABLE APPLICATIONS.

Figure 1. Pressure drop/100' with insert fittings.

Temperature Working Pressure (psi)			
° F.	80 psi	100 psi	160 psi
50° F.	95	118	188
73.4° F.	80	100	160
100° F.	56	70	112
120° F.	40	50	80

Ftg. Type	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Adapt	1.0	1.5	2.0	2.8	3.5	5.0
Coup	.5	.75	1.0	1.3	1.5	2.0
Ell	1.3	1.9	2.6	3.5	4.1	5.0
Teel	2.5	3.0	5.2	7.0	8.1	10.0

* If pipe is to be buried less than 2 feet below the surface, and unless you know otherwise, than 100° F. should be used as the basis to establish the safe working pressure.

Figure 2. Pressure drop per 100 feet of EXCEL pipe.

Size	1/2"			3/4"			1"			1 1/4"			1 1/2"			2"		
	Veloc-ity	Drop		Veloc-ity	Drop		Veloc-ity	Drop		Veloc-ity	Drop		Veloc-ity	Drop		Veloc-ity	Drop	
	Gal/Min.	ft/sec	ft of head psi	ft/sec	ft of head psi	ft/sec	ft of head psi	ft/sec	ft of head psi	ft/sec	ft of head psi	ft/sec	ft of head psi	ft/sec	ft of head psi	ft/sec	ft of head psi	
1	1.06	1.0	0.43															
2	2.11	3.6	1.54	1.20	0.9	0.39												
3	3.17	7.6	3.29	1.80	1.9	0.83	1.11	0.6	0.26									
4	4.22	12.9	5.59	2.40	3.3	1.42	1.49	1.0	0.44	0.86	0.3	0.12						
5	5.28	19.5	8.45	3.00	5.0	2.15	1.86	1.5	0.66	1.07	0.4	0.17	0.79	0.2	0.08			
6	6.33	27.4	11.84	3.60	7.0	3.01	2.23	2.2	0.93	1.29	0.6	0.25	0.95	0.3	0.12	0.57	0.1	0.03
8	8.45	46.6	20.17	4.80	11.9	5.13	2.97	3.7	1.59	1.71	1.1	0.47	1.26	0.5	0.20	0.76	0.1	0.06
10	10.60	70.5	30.50	6.00	17.9	7.76	3.71	5.5	2.40	2.14	1.5	0.63	1.58	0.7	0.30	0.96	0.2	0.09
15				9.01	38.0	16.45	5.57	11.7	5.08	3.21	3.1	1.34	2.36	1.5	0.63	1.43	0.4	0.19
20				12.00	64.7	28.00	7.43	20.0	8.66	4.28	5.3	2.28	3.15	2.5	1.08	1.91	0.7	0.32
25							9.28	30.2	13.09	5.35	8.0	3.45	3.94	3.8	1.63	2.39	1.1	0.48
30							11.14	42.4	18.34	6.43	11.2	4.83	4.73	5.3	2.28	2.87	1.6	0.68
40										8.57	19.0	8.23	6.30	9.0	3.89	3.82	2.7	1.15
50										10.71	28.7	12.44	7.88	13.6	5.88	4.78	4.0	1.74
60													9.45	19.0	8.24	5.74	5.6	2.44
70													11.03	25.3	10.96	6.69	7.5	3.25
80																7.65	9.6	4.16
100																9.61	14.6	6.30

Formula for pressure drop/100 ft
 William & Hazen with
 roughness constant 150

$$\Delta P = .04255 \times \frac{g^{1.852}}{d^{4.8655}}$$
 g = gallons/min flowing
 d = inside diameter/inches
 ft of head/100 ft = (2.31)ΔP

EXCEL 80 PSI, ASTM D-2239, SDR 19, N.S.F.

SIZE	O.D.	I.D.	WALL	WT/C	COIL LGTH.
3/4"	.944	.824	.060	7.3	100' & 400'
1"	1.169	1.049	.060	9.5	100' & 300'
1-1/4"	1.526	1.380	.073	14.8	100' & 300'
1-1/2"	1.780	1.610	.085	20.2	100' & 300'
2"	2.285	2.067	.109	33.1	100' & 200'

EXCEL 100 PSI, ASTM D-2239, SDR 15, N.S.F.

SIZE	O.D.	I.D.	WALL	WT/C	COIL LGTH.
1/2"	.742	.622	.060	5.6	100' & 400'
3/4"	.944	.824	.060	7.3	100' & 400'
1"	1.189	1.049	.070	10.9	100' & 300'
1-1/4"	1.564	1.380	.092	18.7	100' & 300'
1-1/2"	1.824	1.610	.107	25.4	100' & 300'
2"	2.345	2.067	.138	41.8	100' & 200'

EXCEL 125 PSI, ASTM D-2239, SDR 11.5, N.S.F.

SIZE	O.D.	I.D.	WALL	WT/C	COIL LGTH.
1/2"	.742	.622	.060	5.6	100' & 400'
3/4"	.968	.824	.072	8.8	100' & 400'
1"	1.231	1.049	.091	14.3	100' & 300'
1-1/4"	1.620	1.380	.120	24.8	100' & 300'
1-1/2"	1.890	1.610	.140	33.6	100' & 300'
2"	2.427	2.067	.180	55.5	100' & 200'

EXCEL 160 PSI, ASTM D-2239, SDR 9

SIZE	O.D.	I.D.	WALL	WT/C	COIL LGTH.
3/4"	1.008	.824	.092	11.7	100' & 300'
1"	1.283	1.049	.117	18.8	100' & 300'
1-1/4"	1.686	1.380	.153	32.3	100' & 300'
1-1/2"	1.968	1.610	.179	50.1	100' & 300'
2"	2.527	2.067	.230	79.5	100'

EXCEL 160 PSI, CTS, ASTM D-2737, SDR11

SIZE	O.D.	I.D.	WALL	WT/C	COIL LGTH.
3/4"	.875	.715	.080	8.7	100' & 500'
1"	1.125	.921	.102	14.2	100' & 300'
1-1/4"	1.375	1.125	.125	21.4	100' & 300'
1-1/2"	1.625	1.329	.148	29.9	100' & 300'
2"	2.125	1.739	.193	51.2	100'

EXCEL 200 PSI, I.P.S., ASTM D-2239, SDR 7, N.S.F.

SIZE	O.D.	I.D.	WALL	WT/C	COIL LGTH.
3/4"	1.070	.824	.118	15.2	100' + 300'
1"	1.359	1.049	.150	24.3	100' + 300'
1-1/4"	1.786	1.380	.197	41.8	100' + 300'
1-1/2"	2.086	1.610	.230	58.9	100'
2"	2.675	2.067	.295	93.5	100'