List of Tables

Table No.	Shapes: Rnd Pipe	Shapes: Pipe-Arch	Shapes: Arch	Loading: CL-625	Loading: E 80	Size of Corrugations, mm: 68 × 13	76 × 25	125 × 25	152 × 51	Spiral Rib
HC- 1	X			X	X	X				
HC- 2	X			X	X		X			
HC- 3	X			X	X			X		
HC- 4		X		X		X				
HC- 5		X		X			X	X		
HC- 6		X			X	X				
HC- 7	X			X	X				X	
HC- 8		X		X					X	
HC- 9			X	X					X	
HC-10			X		X				X	
HC-11	X			X						X
HC-12		X		X						X

Table HC-1

Corrugated Steel Pipe (CSP)
Corrugation Profile **68 x 13 mm**

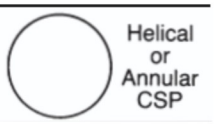
Inside Diameter mm	Minimum Cover: CL-625 mm	Minimum Cover: E-80 mm	Maximum Cover, m: Specified Wall Thickness, mm: 1.3	1.6	2.0	2.8	3.5	4.2
300	300	300	54	67	88			
400	300	300	41	51	67			
500	300	300	33	41	53	78		
600	300	300	27	34	45	65		
700	300	300		29	38	56		
800	300	300		26	34	49		
900	300	300		23	30	43	55	
1000	300	300		21	27	39	50	61
1200	300	300			22	33	42	51
1400	300	500				26	34	41
1600	300	500				21	27	33
1800	300	500					22	27
2000	300	500						21

Notes: (1) Important - please refer to foreword on these tables.
(2) Pipe sizes above the heavy line have flexibility factors (FF) not exceeding 0.245 mm/N.

*E-80 is Railway Loading, these vehicles are considered to be much heavier and slower moving than truck axle loading. E-80 loads are heavier and more concentrated than L-165 Off Highway loads. Cover Depths for E-80 loading can be considered conservative for Heavy Off Highway truck loads.

Table HC-2

Corrugated Steel Pipe (CSP)
Corrugation Profile **76 x 25 mm**



Inside Diameter mm	Minimum Cover		Maximum Cover, m				
	CL-625	E-80	Specified Wall Thickness, mm				
	mm		1.6	2.0	2.8	3.5	4.2
1200	300	500	19	25	37		
1400	300	500	17	22	32	41	
1600	300	500	15	19	28	36	44
1800	300	500	13	17	25	32	39
2000	300	500	12	15	22	28	35
2200	300	700	10	14	20	26	32
2400	300	700		13	19	24	29
2700	500	700		11	16	20	25
3000	500	1000			13	17	21
3300	500	1000			11	14	18
3600	500	1000				12	15

Notes: (1) Important - please refer to foreword on these tables.
(2) Pipe sizes above the heavy line have flexibility factors (FF) not exceeding 0.188 mm/N.

Table HC-3

Corrugated Steel Pipe (CSP)
Corrugation Profile **125 x 25 mm**

Inside Diameter mm	Minimum Cover		Maximum Cover, m				
	CL-625	E-80	Specified Wall Thickness, mm				
	mm		1.6	2.0	2.8	3.5	4.2
1200	300	500	17	23	33		
1400	300	500	15	19	28	36	44
1600	300	500	13	17	25	32	39
1800	300	500	11	15	22	28	34
2000	300	500	10	13	20	25	31
2200	300	700	9	12	18	23	28
2400	300	700	8	11	16	21	26
2700	500	700		10	15	19	23
3000	500	1000			12	16	19
3300	500	1000			10	13	16
3600	500	1000				11	14

Notes: (1) Important - please refer to foreword on these tables.
(2) Pipe sizes above the heavy line have flexibility factors (FF) not exceeding 0.188 mm/N.

Table HC-4

CL-625 Highway Loading
Corrugation Profile: **68 x 13 mm**

Span, mm	Rise, mm	Minimum Cover, mm	Minimum Specified Wall Thickness, mm	Maximum Depth of Cover, m to restrict Corner Pressure to the following:		
				200 kPa	300 kPa	400 kPa
560	420	300	1.6	4.8	7.4	9.9
680	500	300	1.6	5.0	7.6	10.1
800	580	300	1.6	4.9	7.4	9.9
910	660	300	1.6	4.9	7.5	10.0
1030	740	300	1.6	4.8	7.3	9.7
1150	820	300	1.6	4.7	7.2	9.6
1390	970	300	1.6	4.6	7.1	9.5
1630	1120	300	2.0	4.6	7.0	9.4
1880	1260	300	2.8	4.5	6.8	9.2
2130	1400	300	3.5	4.4	6.8	9.1

Notes: (1) Important - please refer to foreword on these tables.

Table HC-5

CL-625 Highway Loading
Corrugation Profiles
76 x 25 mm and 125 x 25 mm

Span, mm	Rise, mm	Minimum Cover, mm	Minimum Specified Wall Thickness, mm		Maximum Depth of Cover, m to restrict Corner Pressure to the following:		
			76 x 25	125 x 25	200 kPa	300 kPa	400 kPa
1330	1030	300	2.0	2.0	5.2	7.9	10.5
1550	1200	300	2.0	2.0	5.2	7.9	10.5
1780	1360	300	2.0	2.0	5.2	7.9	10.6
2010	1530	300	2.0	2.0	5.1	7.8	10.4
2230	1700	300	2.0	2.0	5.4	8.1	10.9
2500	1830	350	2.0	2.0	5.3	8.0	10.7
2800	1950	350	2.0	2.0	5.2	7.9	10.6

Notes: (1) Important - please refer to foreword on these tables.

Table HC-6

E-80 Railway Loading
Corrugation Profiles **68 x 13 mm**

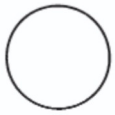
Span, mm	Rise, mm	Minimum Specified Wall Thickness, mm			
		Depth-of-Cover Range*, m			
		0.6 to 0.9 m	0.9 to 1.5	1.5 to 2.4	2.4 to 4.6
560	420	2.8	2.0	2.0	2.0
680	500	2.8	2.8	2.0	2.0
800	580	3.5	2.8	2.8	2.8
910	660	—	3.5	2.8	2.8
1030	740	—	3.5	3.5	2.8
1150	820	—	—	3.5	3.5
1390	970	—	—	—	3.5

* Values interpolated from empirical results gathered over 25 years.

NOTES: (1) Please refer to Foreword.
(2) Live load includes impact, and dead load is based on a unit weight of backfill material of 19 k N/m³.

Table HC-7

Depth-of-Cover Limits for SPCSP Round Pipe
Highway H-20, or Railway E-80 Loadings
Corrugation Profile **152 x 51 mm**



Inside Diameter mm	Periphery (Hole Spaces) N	Minimum Cover		Maximum Cover, m				
		CL-625	E-80	Specified Wall Thickness, mm				
		mm		3.0	4.0	5.0	6.0	7.0
1500	20N	300	500	31	43	55	67	79
1660	22N	300	500	28	39	50	61	71
1810	24N	300	500	26	36	46	56	65
1970	26N	300	500	24	33	42	51	60
2120	28N	300	500	22	31	39	48	56
2280	30N	300	500	21	29	37	45	52
2430	32N	500	500	19	27	34	42	49
2590	34N	500	700	18	25	32	39	46
2740	36N	500	700	17	24	31	37	43
3050	40N	500	700	15	21	27	33	39
3360	44N	500	700	14.5	19	25	30	35
3670	48N	500	1000	13	18	23	28	32
3990	52N	700	1000	12	16.5	21	25	30
4300	56N	700	1000	11	15.5	19.5	24	28
4610	60N	700	1000	10.5	14.5	18.5	22	26
4920	64N	700	1000	9.5	13.5	17	21	24.5
5230	68N	700	1250	9	12	15.5	19	22.5
5540	72N	700	1250		11	14.5	17.5	20.5
5850	76N	1000	1250		10.5	13	16	19
6160	80N	1000	1250			12	15	17.5
6470	84N	1000	1500			11	13.5	16
6780	88N	1000	1500			10	12.5	14.5
7090	92N	1000	1500				11.5	13.5
7400	96N	1000	1500				10.5	12
7710	100N	1000	1500					11
8020	104N	1000	1500					10

Notes: (1) Important - please refer to foreword on these tables.
(2) Pipe sizes above the heavy line have flexibility factors (FF) not exceeding 0.114 mm/N.

Table HC-8

Depth-of-Cover Limits for SPCSP Pipe-Arch
CL-625 Highway Loadings
Corrugation Profile **152 x 51 mm**

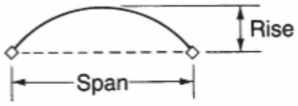
Span, mm	Rise, mm	Minimum Cover, mm	Minimum Thickness, mm	Maximum Depth of Cover, m to restrict Corner Pressure to the following:			
				100 kPa	200 kPa	300 kPa	400 kPa
2050	1520	300	3.0	2.9	6.0	9.1	12.2
2240	1630	300	3.0	2.7	5.6	8.6	11.5
2440	1750	350	3.0	2.5	5.4	8.2	11.0
2590	1880	350	3.0	2.5	5.4	8.2	11.0
2690	2080	350	3.0	2.8	5.9	8.9	11.9
3100	1980	400	3.0	1.9	4.1	6.3	8.4
3400	2010	450	3.0	1.4	3.3	5.1	6.9
3730	2290	500	3.0	1.5	3.5	5.3	7.2
3890	2690	500	3.0	1.9	4.2	6.4	8.6
4370	2870	550	3.0	1.6	3.6	5.6	7.5
4720	3070	600	3.0	1.5	3.4	5.2	7.0
5050	3330	650	3.0	1.5	3.3	5.0	6.8
5490	3530	700	3.0	1.3	3.0	4.6	6.2
5890	3710	750	3.0	1.2	2.8	4.3	5.8
6250	3910	800	4.0	1.1	2.6	4.1	5.5

Notes: (1) Important - please refer to foreword on these tables.

Table HC-9

Depth-of-Cover Limits for SPCSP Arches
CL-625 Highway Loadings
Corrugation Profile **152 x 51 mm**

$.30 \leq \frac{\text{Rise}}{\text{Span}} \leq .50$



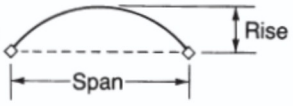
Inside Dimensions		Minimum Cover mm	Maximum Cover, m				
Span mm	Radius mm		Specified Wall Thickness, mm				
			3.0	4.0	5.0	6.0	7.0
1520	760	300	23	32	41	50	58
1830	930	300	19	27	34	41	48
	910	300	19	27	34	41	48
2130	1090	300	17	23	29	36	42
	1070	300	17	23	29	36	42
2440	1230	500	14	20	26	31	36
	1220	500	14	20	26	31	36
2740	1400	500	13	18	23	28	32
	1370	500	13	18	23	28	32
3050	1540	500	11	16	20	25	29
	1520	500	11	16	20	25	29
3350	1710	500	10.5	14	18	23	26
	1680	500	10.5	14	19	23	27
3660	1850	500	9.5	13	17	21	24
	1830	500	9.5	13	17	21	24
3960	2010	500	9	12	16	19	22
	1980	500	9	12	16	19	22
4270	2160	700	8.5	11	15	18	21
	2130	700	8.5	11	15	18	21
4570	2340	700	7.5	10	13	16	19
	2290	700	7.5	10	14	17	19
4880	2480	700		10	13	15	18
	2440	700		10	13	15	18
5180	2620	700		9	12	14	17
	2590	700		9	12	14	17
5490	2820	700		8	10	13	15
	2740	700		8.5	11	13	15
5790	2950	1000			10	12	14
	2900	1000			10	12	14
6100	3100	1000			9	11	13
	3050	1000			9	11	13

Notes: (1) Important - please refer to foreword on these tables.
(2) For structural plate arches R/S > .50, use round pip tables or 1.39 x these values.

Table HC-10

Depth-of-Cover Limits for SPCSP Arches
E-80 Railway Loadings
Corrugation Profile **152 x 51 mm**

$.30 \leq \frac{\text{Rise}}{\text{Span}} \leq .50$



Inside Dimensions*		Minimum Cover, mm	Maximum Depth-of-Cover, m				
			Specified Wall Thickness, mm				
Span, mm	Radius, mm		3.0	4.0	5.0	6.0	7.0
1520	760	500	24	34	43	52	61
1830	930		20	27	35	42	49
	910		20	28	36	43	51
2130	1090		17	23	30	36	42
	1070		17	24	30	37	43
2440	1230		15	21	26	32	37
	1220	500	15	21	27	32	38
2740	1400	700	13	18	23	28	33
	1370		14	19	24	29	34
3050	1540		12	17	21	26	30
	1520		12	17	21	26	30
3350	1710		11	15	19	23	27
	1680	700	11	15	19	23	27
3660	1850	1000	10	14	18	21	25
	1830		10	14	18	22	25
3960	2010		9	13	16	20	23
	1980		9.5	13	16	20	23
4270	2160		8	12	15	18	21
	2130		8.5	12	15	18	22
4570	2340		7	11	14	17	20
	2290		7.5	11	14	17	20
4880	2480			10	13	16	19
	2440	1000		10	13	16	19
5180	2620	1250		9.5	12	15	17
	2590			9.5	12	15	17
5490	2820			8.0	11	13	15
	2740			8.5	11	14	16
5790	2950				10	12	14
	2900				10	13	15
6100	3100				9.5	11	13
	3050	1250			9.5	12	14

For structural plate arches R/S ≥ .50 use round pipe tables or 1.39 × these values.

Table HC-11

Depth-of-Cover Limits for round Spiral Rib Pipes
19 x 19 x 190 mm rib profile
CL-625 live load

Diameter, mm	Minimum Cover, mm	Maximum Cover, m Specified Thickness, mm		
		1.6	2.0	2.8
450	300	22.7	33.6	
525	300	19.4	28.8	50.6
600	300	17.0	25.2	44.3
750	300	13.6	20.2	35.4
900	300	11.3	16.8	29.5
1050	300	9.7	14.4	25.3
1200	300	8.5*	12.6	22.1
1350	350	7.5*	11.2	19.7
1500	400	6.8*	10.1*	17.7
1650	450		9.1*	16.1
1800	450		8.4*	14.7
2100	550			12.6*
2400	600			11.0*

*These installations require attention to backfill material and compaction methods used. Refer to the "Design of Buried Structures With Spans Up To 3 m - Handling Stiffness" discussion for more details on the various installation types.