PC-1

MINIMUM SHEET THICKNESS AND DESIGN DATA

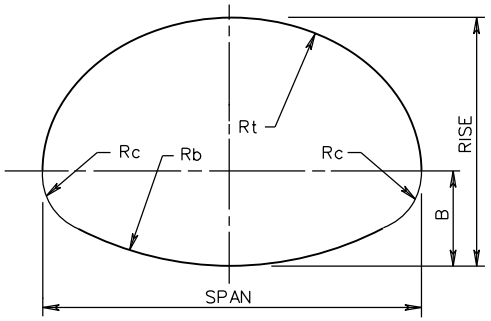
PIPE ARCH DIMENSION					MINIMUM SHEET THICKNESS REQUIRED	MAXIMUM COVER HEIGHT IN FEET	
						MAXIMUM CORNER PRESSURE	
NOMINAL SIZE SPAN - RISE INCHES	EQUIVALENT PIPE DIAMETER INCHES	AREA SQ. FT.	MAXIMUM "B" INCHES (SEE NOTE 7)	Rc INCHES	INCHES (GAUGE)	4000 LBS./SQ. FT. (SEE NOTE 4)	6000 LBS./SQ. FT. (SEE NOTE 6)
2 2/3" x 1/2" CORRUGATIONS							
17 x 13	15	1.1	5¼"	3	0.064 (16)	11	17
21 x 15	18	1.6	6"	3	0.064 (16)	9	14
24 x 18	21	2.2	7¼"	3	0.064 (16)	8	12
28 x 20	24	2.8	8"	3	0.064 (16)	7	10
35 x 24	30	4.4	9½"	3	0.064 (16)	5	8
42 x 29 ⊛	36	6.4	10½"	3½	0.064 (16)	5	8
49 x 33 ⊛	42	8.7	11½"	4	0.079 (14)	5	8
57 x 38 ⊛	48	11.4	13½"	5	0.109 (12)	5	8
64 x 43 ⊛	54	14.3	15"	6	0.109 (12)	6	9
71 x 47 ⊛	60	17.6	16½"	7	0.138 (10)	6	9
77 x 52 ⊛	66	21.3	18"	8	0.168 (8)	6	10
83 x 57 ⊛	72	25.3	20"	9	0.168 (8)	7	10
3" x 1" AND 5" x 1" CORRUGATIONS							
40 x 31 ⊛	36	6.4	9¾"	5	0.109 (12)	8	12
46 x 36 ⊛	42	8.7	11½"	6	0.109 (12)	8	12
53 x 41 ⊛	48	11.4	13"	7	0.109 (12)	8	13
60 x 46 ⊛	54	14.3	14¾"	8	0.109 (12)	8	13
66 x 51 ⊛	60	17.6	16½"	9	0.109 (12)	9	13
73 x 55 ⊛	66	22.0	21½"	12	0.109 (12)	11	16
81 x 59 ⊛	72	26.0	23"	14	0.109 (12)	11	17
87 x 63	78	31.0	24½"	14	0.109 (12)	10	16
95 x 67	84	35.0	26½"	16	0.109 (12)	11	16
103 x 71	90	40.0	27"	16	0.109 (12)	10	15
112 x 75	96	46.0	29"	18	0.109 (12)	10	16
117 x 79	102	52.0	30¾"	18	0.109 (12)	10	15
128 x 83	108	58.0	29½"	18	0.138 (10)	9	14
137 x 87	114	64.0	30¾"	18	0.138 (10)	8	13
142 x 91	120	71.0	32½"	18	0.168 (8)	8	12

⊛ INDICATES PIPE ARCHES FOR WHICH DIMENSIONS FOR EITHER CORRUGATION MAY BE USED WITHIN HEIGHT OF COVER LIMITATIONS.

NOTES:

1. COVER HEIGHTS INDICATED IN TABLES ARE FOR FINISHED CONSTRUCTION WHICH MATCH FORMER VDOT ALLOWABLE STRESS DESIGN TABLES. COVER HEIGHTS WERE NOT RE-CALCULATED USING LRFD
2. TO PROTECT PIPE DURING CONSTRUCTION, MINIMUM HEIGHT OF COVER TO BE IN ACCORDANCE WITH TABLE A PRIOR TO ALLOWING CONSTRUCTION TRAFFIC TO CROSS INSTALLATION. THE COVER SHALL EXTEND THE FULL LENGTH OF THE PIPE ARCH. THE APPROACH FILL RAMP IS TO EXTEND A MINIMUM OF 10(HEIGHT + ½ SPAN) ON EACH SIDE OF THE PIPE, OR TO THE INTERSECTION WITH A CUT.
3. STANDARD MINIMUM FINISHED HEIGHT OF COVER FOR ALL PIPES SHALL BE 2'0" OR ½ SPAN, WHICHEVER IS GREATER. IN CASES IN WHICH THESE COVER HEIGHTS CANNOT BE ACHIEVED, AN ABSOLUTE MINIMUM FINSHED COVER HEIGHT OF 1.0' OR ⅛ SPAN, WHICHEVER IS GREATER, WILL BE ALLOWED ONLY IF ALL POSSIBLE MEANS TO OBTAIN THE STANDARD VALUE HAVE BEEN EXHAUSTED. WHERE POLYMER COATED PIPE WILL BE USED AND THE SURFACE OVER THE TOP OF THE PIPE WILL BE ASPHALT, CLASS I BACKFILL MATERIAL IS TO BE PLACED UP TO A MINIMUM OF 6" ABOVE THE TOP OF THE PIPE.
4. SEE STANDARD PB-1 FOR PIPE BEDDING AND BACKFILL REQUIREMENTS.
5. THE MAXIMUM HEIGHT OF COVER SHOWN IN THE TABLES IS BASED ON A SOIL MODULUS OF 700 PSI. ALL OTHER DESIGN CRITERIA ARE IN ACCORDANCE WITH THE AASHTO SPECIFICATIONS AND VDOT MODIFICATIONS FOR SOIL CORRUGATED METAL STRUCTURE INTERACTION SYSTEMS.
6. WHEN DESIGN HEIGHT OF COVER REQUIRES THE USE OF THIS CATEGORY OF PIPE, FOUNDATION AND BACKFILL MUST BE APPROVED BY THE ENGINEER.
7. SPAN OF PIPE ARCHES IS MEASURED "B" INCHES ABOVE THE INVERT. SEE DIAGRAM BELOW FOR ILLUSTRATION OF "B" DIMENSION.

TABLE A	
PIPE ARCH SPAN	MINIMUM COVER HEIGHT DURING CONSTRUCTION (SEE NOTE 2)
17" TO 35"	18"
42" AND ABOVE	½ SPAN



VDOT
ROAD AND BRIDGE STANDARDS

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.

CORRUGATED STEEL PIPE ARCH
HEIGHT OF COVER TABLE FOR HL-93 LIVE LOAD

VIRGINIA DEPARTMENT OF TRANSPORTATION

SHEET 5 OF 18 | REVISION DATE 11/15
107.09

SPECIFICATION REFERENCE
232
302