

MINIMUM SHEET THICKNESS AND DESIGN DATA

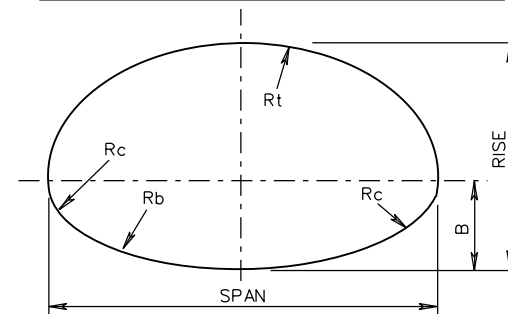
PIPE ARCH DIMENSION				MINIMUM SHEET THICKNESS REQUIRED INCHES (GAUGE)	MAXIMUM COVER HEIGHT IN FEET	
NOMINAL SIZE SPAN-RISE INCHES	EQUIVALENT PIPE DIAMETER INCHES	AREA SQ. FT.	Rc INCHES		MAXIMUM CORNER PRESSURE	
					4000 LBS./SQ. FT. (SEE NOTE 4)	6000 LBS./SQ. FT. (SEE NOTE 6)
2 2/3" x 1/2" CORRUGATIONS						
17 x 13	15	1.1	3"	0.060 (16)	11	17
21 x 15	18	1.6	3"	0.060 (16)	9	14
24 x 18	21	2.2	3"	0.060 (16)	8	12
28 x 20	24	2.8	3"	0.075 (14)	7	10
35 x 24	30	4.4	3"	0.075 (14)	5	8
42 x 29 ⊗	36	6.4	3 1/2"	0.105 (12)	5	8
49 x 33 ⊗	42	8.7	4"	0.105 (12)	5	8
57 x 38 ⊗	48	11.4	5"	0.135 (10)	5	8
64 x 43 ⊗	54	14.3	6"	0.135 (10)	6	9
71 x 47 ⊗	60	17.6	7"	0.164 (8)	6	9
3" x 1" CORRUGATIONS						
40 x 31 ⊗	36	6.4	5"	0.060 (16)	8	12
46 x 36 ⊗	42	8.7	6"	0.060 (16)	8	12
53 x 41 ⊗	48	11.4	7"	0.060 (16)	8	13
60 x 46 ⊗	54	14.3	8"	0.075 (14)	8	13
66 x 51 ⊗	60	17.6	9"	0.075 (14)	9	13
73 x 55	66	22.0	12"	0.105 (12)	11	16
81 x 59	72	26.0	14"	0.105 (12)	11	17
87 x 63	78	31.0	14"	0.135 (10)	10	16
95 x 67	84	35.0	16"	0.135 (10)	11	16
103 x 71	90	40.0	16"	0.164 (8)	10	15
112 x 75	96	46.0	18"	0.164 (8)	10	13
117 x 79	102	52.0	18"	0.164 (8)	10	11

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

NOTES:

- 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
- 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(HHEIGHT + 1/2 SPAN) ON EACH SIDE OF THE STRUCTURE OR TO THE INTERSECTION WITH A CUT.
- STANDARD MINIMUM FINISHED HEIGHT OF COVER FOR ALL PIPES SHALL BE 2'0" OR 1/8 SPAN, WHICHEVER IS GREATER. IN CASES IN WHICH THESE COVER HEIGHTS CANNOT BE ACHIEVED, AN ABSOLUTE MINIMUM FINISHED COVER HEIGHT OF 1.0' OR 1/8 SPAN, WHICHEVER IS GREATER, WILL BE ALLOWED ONLY IF ALL POSSIBLE MEANS TO OBTAIN THE STANDARD VALUE HAVE BEEN EXHAUSTED.
- SEE STANDARD PB-1 FOR PIPE BEDDING AND BACKFILL REQUIREMENTS.
- 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.
- WHEN DESIGN HEIGHT OF COVER REQUIRES THE USE OF THIS CATEGORY OF PIPE BEDDING FOUNDATION AND BACKFILL MUST BE APPROVED BY THE ENGINEER.
- LAPPED LONGITUDINAL SEAMS SHALL BE STAGGERED SO AS TO ALTERNATE ON EACH SIDE OF THE CENTER OF ARCH TOP BY APPROXIMATELY 15 PERCENT OF THE PERIPHERY.
- A TOLERANCE OF PLUS, OR MINUS, 1" IS PERMISSIBLE FOR DIMENSIONS OF SPAN, RISE, AND CORNER RADIUS.

PIPE DIAMETER	MINIMUM COVER HEIGHT DURING CONSTRUCTION (SEE NOTE 2)
17" TO 35"	18"
42" AND ABOVE	1/2 SPAN



SPECIFICATION REFERENCE

232
302

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.
CORRUGATED ALUMINUM ALLOY PIPE ARCH
HEIGHT OF COVER TABLE FOR HL-93 LIVE LOAD
 VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT

ROAD AND BRIDGE STANDARDS

REVISION DATE
11/15

SHEET 6 OF 18
107.10