

REINFORCED CONCRETE FULL CIRCLE PIPE														
IN CUT SECTIONS														
PIPE DIAMETER mm (in.)	REQUIRED PIPE CLASS													
	● MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (METERS)													
	300 mm to 600 mm	600 mm to 3.00	3.00 to 3.65	3.65 to 4.25	4.25 to 4.85	4.85 to 5.50	5.50 to 6.10	6.10 to 7.60	7.60 to 9.15	9.15 to 10.65	10.65 to 12.20	12.20 to 13.70	13.70 to 15.20	
300 12	IV	II	II	II	II	II	III	III	III	III	III	III	III	
375 15	III	II	II	II	II	II	II	III	III	III	III	III	III	
450 18	III	II	II	II	II	II	II	III	III	III	III	III	III	
525 21	III	II	II	II	II	II	II	III	III	III	III	III	III	
600 24	III	II	II	III	III	III	III	IV	IV	IV	IV	IV	IV	
675 27	II	II	II	III	III	III	III	IV	IV	IV	IV	IV	IV	
750 30	II	II	II	III	III	III	III	IV	IV	IV	IV	IV	IV	
900 36	II	II	III	III	IV	IV	IV	IV	IV/V	IV/V	IV/V	IV/V	IV/V	
1050 42	II	II	III	III	III	IV	IV	IV	IV	IV/V	V	IV/V	IV/V	
1200 48	II	II	II	III	III	IV	IV	IV	IV	IV/V	V	IV/V	IV/V	
1350 54	II	II	III	III	III	IV	IV	IV	IV	IV/V	V	IV/V	IV/V	
1500 60	II	II	III	III	IV	IV	IV	IV	IV/V	IV/V	V	V	V	
1650 66	II	II	III	III	IV	IV	IV	IV	IV/V	IV/V	V	V	V	
1800 72	II	II	III	III	IV	IV	IV	IV	IV/V	IV/V	V	V	V	
1950 78	II	II	III	III	III	IV	IV	IV	IV/V	IV/V	V	V	V	
2100 84	II	II	III	III	III	IV	IV	IV	IV/V	IV/V	V	V	V	
2250 90	II	II	II	III	III	IV	IV	IV	IV/V	IV/V	V	V	V	
2400 96	II	II	II	III	III	IV	IV	IV	IV/V	IV/V	V	V	V	
2550 102	II	II	II	III	III	IV	IV	IV	IV/V	IV/V	V	V	V	
2700 108	II	II	II	III	III	IV	IV	IV	IV/V	IV/V	V	V	V	
IN FILL SECTIONS														
REQUIRED PIPE CLASS														
PIPE DIAMETER mm (in.)	● MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (METERS)													
	300 mm to 600 mm	600 mm to 3.00	3.00 to 3.65	3.65 to 4.25	4.25 to 4.85	4.85 to 5.50	5.50 to 6.10	6.10 to 7.60	7.60 to 9.15	9.15 to 10.65	10.65 to 12.20	12.20 to 13.70	13.70 to 15.20	
300 12	IV	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
375 15	III	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
450 18	III	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
525 21	III	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
600 24	III	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
675 27	II	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
750 30	II	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
900 36	II	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
1050 42	II	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
1200 48	II	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
1350 54	II	II	III	III	IV	IV	IV	IV/V	V	*	*	*	*	
1500 60	II	II	III	III	III	IV	IV	IV/V	V	*	*	*	*	
1650 66	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
1800 72	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
1950 78	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
2100 84	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
2250 90	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
2400 96	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
2550 102	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	
2700 108	II	II	II	III	III	IV	IV	IV/V	V	V	*	*	*	

* SPECIAL DESIGN PIPE DESIGN METHOD TO CONFORM TO CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

● FILL HEIGHT MEASURED FROM TOP OF PIPE TO TOP OF SUBGRADE.

REINFORCED CONCRETE – ARCH / ELLIPTICAL PIPE					
APPROXIMATE EQUIVALENT ROUND PIPE mm (in.)	CLASS A - III ARCH CLASS HE - III HORIZONTAL ELLIPTICAL CLASS VE - IV VERTICAL ELLIPTICAL				
	ARCH SIZE SPAN x RISE (mm)	HORIZONTAL ELLIPTICAL SIZE RISE x SPAN (mm)	VERTICAL ELLIPTICAL SIZE RISE x SPAN (mm)	MINIMUM COVER (m)	MAXIMUM COVER (m)
375 15	460 x 280	————	————	0.3	3.0
450 18	560 x 345	365 x 575	575 x 365	0.3	3.0
525 21	660 x 395	————	————	0.3	3.0
600 24	725 x 460	490 x 770	770 x 490	0.3	3.0
750 30	920 x 570	610 x 960	960 x 610	0.3	3.0
900 36	1110 x 675	730 x 1150	1150 x 730	0.3	3.0
1050 42	1300 x 795	855 x 1345	1345 x 855	0.3	3.0
1200 48	1485 x 915	975 x 1535	1535 x 975	0.3	3.0
1350 54	1650 x 1015	1095 x 1730	1730 x 1095	0.3	3.0
1500 60	1855 x 1145	1220 x 1920	1920 x 1220	0.3	3.0
1650 66		1340 x 2110	2110 x 1340	0.3	3.0
1800 72	2235 x 1370	1465 x 2305	2305 x 1465	0.3	3.0
1950 78		1585 x 2495	2495 x 1585	0.3	3.0
2100 84	2590 x 1575	1705 x 2690	2690 x 1705	0.3	3.0
2250 90	2920 x 1830	1830 x 2880	2880 x 1830	0.3	3.0
2400 96	3100 x 1960	1950 x 3070	3070 x 1950	0.3	3.0
2550 102		2075 x 3265	3265 x 2075	0.3	3.0
2700 108	3505 x 2215	2195 x 3455	3455 x 2195	0.3	3.0
2850 114		2315 x 3648	3648 x 2315	0.3	3.0
3000 120	3910 x 2460	2440 x 3840	3840 x 2440	0.3	3.0

GENERAL NOTES

- FILL HEIGHT DESIGNS ARE BASED ON A CLASS B BEDDING, NEGATIVE PROJECTION, HS-20 LIVE LOADING AND 1925 KILOGRAMS PER CUBIC METER SOIL WEIGHT.
- MINIMUM HEIGHT OF COVER FROM TOP OF PIPE TO TOP OF SUBGRADE FOR REINFORCED CONCRETE PIPE SHALL BE 300 MILLIMETERS.
- IN THE EVENT LOADS IN EXCESS OF HS-20 ARE TO BE OPERATED OVER OR ADJACENT TO THE PIPE INSTALLATION DURING THE CONSTRUCTION PHASE, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A MINIMUM OF 1.25 METERS OF COVER OVER THE PIPE AT WHEEL OR TRACK PATHS.
- PROPER INSTALLATION PRACTICES MUST BE ADHERED TO AS SHOWN ON 1999 METRIC ROADWAY STANDARD DRAWING SPL-3.
- ANY PIPE CRACKED PRIOR TO FINAL ACCEPTANCE SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE. SURFACE DISTRESS MUST BE REPAIRED TO THE SATISFACTION OF THE ENGINEER OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- PIPE DIMENSIONS LISTED IN TABLES CONFORM TO 1998 AASHTO DESIGNATIONS.
- CLASS IV/V REINFORCED CONCRETE PIPE SHALL MEET STRENGTH TEST REQUIREMENTS CONFORMING TO TEST PROCEDURE AASHTO T-280-94(1).