

Technical information for Corrugated HDPE pipes

HDPE Pipes Minimum and Maximum Cover: Cement Stabilised Backfill

Minimum & Maximum Cover in meters

Pipe Size	SN rating	Min. Trench Width	Multi Barrel Min Spacing From outside edge of pipe	Minimum Cover			Maximum Cover
				Traffic Load - AS5100.2 SM1600 Load *See note 4	Construction Equipment - Cat 793F Wheel Load *See note 6	Railway Load - AS4799-2000 Table A1 (Average Intensity Railway Load) *See note 3	
225	8	0.8	0.15	0.5	0.9	0.7	13.2
300	8	0.9	0.15	0.5	1.0	0.7	11.7
375	8	1.0	0.15	0.5	1.0	0.7	10.9
450	8	1.3	0.15	0.5	1.0	0.7	12.1
525	8	1.5	0.20	0.5	1.0	0.7	12.1
600	8	1.6	0.20	0.5	1.0	0.7	11.3
750	8	1.9	0.20	0.5	1.1	0.7	10.5
900	8	2.1	0.20	0.5	1.2	0.7	9.6
1050	8	2.3	0.20	0.5	1.3	0.7	8.9
1200	8	2.5	0.20	0.5	1.3	0.7	8.8
1500	8	2.8	0.20	0.5	1.4	0.7	8.0
1600	8	3.0	0.20	0.5	1.4	0.7	7.0
1800	4	3.2	0.20	0.6	1.9	1.5	5.0
2000	4	3.6	0.20	0.7	1.9	2.8	5.0

Minimum covers in accordance to AS2566.1-1998

Not subject to vehicular loading	0.3 m
Subject to vehicular loading - not in roadways	0.45 m
in sealed roadways	0.60 m
under unsealed roadways	0.75 m
Subject to construction equipment loading	0.75 m

Conditions to these datasheets:

- 1 Based on a native soil (surrounding cement stabilised backfill) having a compaction of 90% MMDD, consisting of coarse-grained soil with more than 12% fines.
- 2 Backfill material shall be a cement stabilised granular soil, achieving a minimum moduli of 25MPa, mixed in accordance to Appendix L of AS2566.2-Buried flexible pipelines Part 2: Installation.
- 3 Minimum cover for rail installations has been specified from top of pipe to top of sub-ballast.
- 4 SM1600 loading incorporates W80, A160, M1600, and S1600 traffic design loads detailed in AS5100.2-2004:
A160 traffic loads have an axle load of 160kN
M1600 traffic loads have an axle load of 120kN
S1600 traffic loads have an axle load of 80kN
- 5 Railway loads have been designed for a single axle weight of 240kN
- 6 Construction Cat 793F loads have been designed for a single axle weight of 2500kN, with maximum vehicle weight of 390 tonnes
- 7 Minimum covers presented in the table are only suited to Culvert, Gravity, Sewer, and Storm and have been calculated through detailed design and require advanced installation methods to be achieved.

RCP pipe VS Corrugated HDPE

RCP Size	Corrugated Size	Class 2	Allowable Depths (m)	Class 3	Allowable Depths (m)	Class 4	Allowable Depths (m)	Class 6	Allowable Depths (m)	Class 8	Allowable Depths (m)	Class 10	Allowable Depths (m)
225	225	SN4	ALL	SN8	0.6 - 7.3	SN8	0.6 - 7.3	-	-	-	-	-	-
300	300	SN2	ALL	SN6	ALL	SN8	0.6 - 7.3	SN8	0.6 - 7.3	SN8	0.6 - 7.3	SN8	0.6 - 7.3
375	375	SN2	ALL	SN6	ALL	SN8	0.6 - 7.2	SN8	0.6 - 7.2	SN8	0.6 - 7.2	SN8	0.6 - 7.2
450	450	SN2	ALL	SN4	ALL	SN8	ALL	SN8	0.6 - 7.2	SN8	0.6 - 7.2	SN8	0.6 - 7.2
525	525	SN2	ALL	SN4	ALL	SN8	ALL	SN8	0.6 - 7.1	SN8	0.6 - 7.1	SN8	0.6 - 7.1
600	600	SN2	ALL	SN4	ALL	SN8	ALL	SN8	0.6 - 7.1	SN8	0.6 - 7.1	SN8	0.6 - 7.1
750	750	SN2	ALL	SN4	ALL	SN8	ALL	SN8	0.6 - 6.8	SN8	0.6 - 6.8	SN8	0.6 - 6.8
900	900	SN2	ALL	SN4	ALL	SN8	ALL	SN8	0.6 - 6.9	SN8	0.6 - 6.9	SN8	0.6 - 6.9
1050	1050	SN2	ALL	SN4	ALL	SN8	ALL	SN8	0.6 - 6.6	SN8	0.6 - 6.6	SN8	0.6 - 6.6
1200	1200	SN2	ALL	SN4	ALL	SN6	ALL	SN8	0.6 - 6.6	SN8	0.6 - 6.6	SN8	0.6 - 6.6
1500	1500	SN2	ALL	SN4	ALL	SN6	ALL	SN8	0.6 - 6.6	SN8	0.6 - 6.6	SN8	0.6 - 6.6
1650	1600	SN2	ALL	SN4	ALL	SN6	ALL	SN8	0.6 - 6.5	SN8	0.6 - 6.5	SN8	0.6 - 6.5
1800	1800	SN2	ALL	SN4	ALL	SN6	ALL	SN8	0.6 - 6.5	SN8	0.6 - 6.5	SN8	0.6 - 6.5
1950	2000	SN2	ALL	SN4	ALL	SN6	ALL	SN8	0.6 - 6.5	SN8	0.6 - 6.5	SN8	0.6 - 6.5

Notes:

1. This table should be used for reference only, detailed design is required based on site conditions and pipe types.
2. Pipe strength comparisons are for buried pipes only, as the design relies upon the surrounding soil to achieve their design capacities.
3. Refer to the minimum and maximum load tables to determine the required SN rating for the applied load and design covers.
4. bedding assumptions:
Based on a native soil (surrounding cement stabilised backfill) having a compaction of 90% MMDD, consisting of coarse-grained soil with more than 12% fines. Backfill material shall be sand and coarse-grained soil with less than 12% fines, achieving a minimum compaction of 90% MMDD.
5. Concrete pipe bedding assumed to be sand and gravel in trench conditions
6. Live loads are based on SM1600 loading criteria, and incorporate W80, A160, M1600, and S1600 traffic design loads detailed in AS5100.2-2004