

N-12[®] Dual Wall Pipe



The Standard in Drainage Pipe

Since 1987, Advanced Drainage Systems, Inc. has produced N-12 high-density polyethylene (HDPE) dual wall pipe - the standard in gravity-flow drainage pipe.

N-12 pipe, which is named for its Manning's 'n' value, combines an annular corrugated exterior for strength with a smooth interior wall that provides superior flow characteristics. ADS manufactures N-12 pipe with unsurpassed joint integrity, an inline bell design and manufactured installed joints.

N-12 pipe is available in 4"-60" (100-1500 mm) diameters and nominal 20' (6 m) and 13' (4 m) lengths. N-12's longer lengths than other pipe materials means fewer joints.

N-12 is light weight but its structural strength will support H-25 live loads with 12" (300 mm) minimum cover. 60" (1500 mm) pipe requires 24" (600 mm) cover for live loads.

HDPE is extremely durable and easily withstands normal impacts in shipping and installation. N-12 is also highly resistant to chemicals, soils and effluents.

The inline bell design allows for pipe ends to be pushed together for easy installation. The joint only requires lubricant and does not require additional gasket materials, grout or sealing bands, which leads to faster installation times than other pipe types. This all leads to installation cost savings based on lower shipping costs, reduced labor and less heavy equipment.

While storm sewers are the most pertinent application for N-12, the pipe can also be used for culverts, cross drains, retention/detention, recreation, foundation drains, ditch enclosures, recreation and waterways, athletic fields, railroad, landfills, mining, industrial and forestry.

Fittings

N-12 pipe can be easily handled and cut in the field for a variety of applications.

Therefore, ADS has a variety of fittings available, including tees, wyes, couplers, end caps, elbows and reducers. For smaller pipe diameters, ADS has injection molded fittings, while fabricated fittings are available for larger diameters of pipe.



Applicable Standards

ASTM F2306, Standard Specification for 12" to 60" (300 to 1500 mm) Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications

ASTM D2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity Flow Applications

ASTM F477, Standard Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

ASTM D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipe Using Flexible Elastomeric Joints

ASTM F2487, Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene Pipelines

ASTM F2648/F2648M-07, Standard Specification for 2" to 60" (50 to 1500 mm) Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications

ASTM F1417, Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air

ASTM F2510, Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures and Corrugated High Density Polyethylene Drainage Pipes

AASHTO M252, Standard Specifications for Corrugated Polyethylene Pipe, 3" to 10" (75 to 250 mm)

AASHTO M294, Standard Specification for Corrugated Polyethylene Pipe, 12" to 60" (300 to 1500 mm)

AASHTO LRFD Bridge Design Specification, Section 12: Buried Structures & Tunnel Liners

AASHTO Section 30, Construction Standard, Thermoplastic Pipe

CSA B182.8, Storm Sewer and Drainage Pipe and Fittings Polyethylene

Pipe Comparisons

Pounds per foot (kg per meter)

Diameter in (mm)	N-12	Reinforced Concrete	Corrugated Steel
4 (100)	0.44 (0.65)	n/a	n/a
6 (150)	0.85 (1.26)	n/a	6 (8.9)
8 (200)	1.5 (2.23)	n/a	7 (10.4)
10 (250)	2.3 (3.4)	50 (74.4)	9 (13.3)
12 (300)	3.3 (4.9)	79 (117.6)	11 (16.4)
15 (375)	4.6 (6.8)	103 (153.2)	13 (19.3)
18 (450)	6.4 (9.5)	131 (195.0)	16 (23.8)
24 (600)	11.0 (16.4)	264 (392.9)	19 (28.3)
30 (750)	15.4 (22.9)	384 (571.5)	24 (35.7)
36 (900)	19.8 (29.5)	524 (779.8)	29 (43.2)
42 (1050)	26.4 (39.3)	686 (1020.9)	34 (50.6)
48 (1200)	31.3 (46.6)	867 (1290.2)	38 (56.6)
60 (1500)	45.2 (67.3)	1,295 (1927.2)	60 (89.3)

Recommended Manning's 'n' for design

Diameter in (mm)	N-12	Reinforced Concrete	Corrugated Steel
4-10 (100-250)	.012	n/a	.024
12-15 (300-375)	.012	.012	.024
18-36 (450-900)	.012	.012	.024
42-60 (1050-1500)	.012	.012	.024



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