

HP Storm Pipe



HP Storm Pipe 12”–60” for Storm Applications

Overview

HP Storm is a high-performance polypropylene (PP) pipe for gravity-flow storm drainage applications. HP Storm is the product of choice when premium joint performance and/or greater pipe stiffness is required. HP Storm couples advanced polypropylene resin technology with a proven, dual-wall profile design for superior performance and durability.

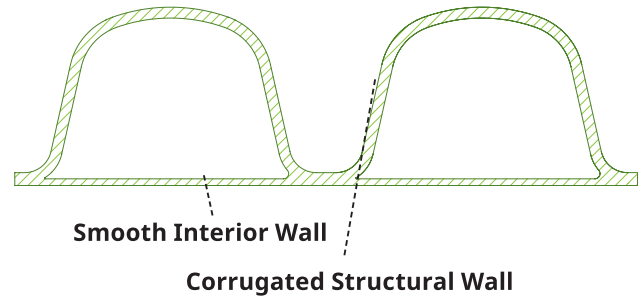
Specify HP Storm with confidence based on national standards and approvals. This innovative product meets or exceeds ASTM F2881 and AASHTO M330. From a federal perspective, polypropylene pipe is approved for use by the Army Corps of Engineers for storm drainage applications under Section 33 40 00 (Unified Facilities Guide Specifications). The Federal Aviation Authority (FAA) permits polypropylene pipe under airfield pavements per Item D-701, Pipe for Storm Drains and Culverts in AC 150/5370-10G (Standards for Specifying Construction of Airports). Additionally, the American Railway Engineering and Maintenance-of-Way Association (AREMA) approves polypropylene pipe in storm drainage applications under railroads.

Advanced Dual Wall Profile Construction

HP Storm pipe utilizes a dual wall construction, providing increased pipe stiffness. The additional stiffness and beam strength enhances jobsite performance in stringent line and grade requirements. The pipe profile is completed with a smooth interior which provides additional strength and excellent flow characteristics.

Superior Polypropylene Material

Made from an engineered impact modified co-polymer compound, the superior strength and material properties of polypropylene offer robust pipe stiffness, excellent handling characteristics, and long service life when compared to traditional storm sewer products. It is highly resistant to chemical attack and is unaffected by soils or effluents with PH ranges 1.5 to 14. The unique light grey resin color provides immediate jobsite recognition as well as improving the pipe's interior visibility during post-installation inspection.



Smooth Interior Wall



Polypropylene Resin

Superior Joint Performance

HP Storm pipe has an extended bell that adds an additional factor of safety within each joint. The joint performance meets or exceeds the 10.8 psi laboratory performance standards per ASTM D3212 requirements. Third party certification of joint performance is available upon request.

In the field, each section of HP Storm may be tested by a low pressure air test, according to ASTM F1417, which is a commonly used standard and specifies that 3.5 psi air pressure be held for a specified length of time based upon pipe diameter and length of run.

Where an infiltration/exfiltration test is preferred, ASTM F2487 specifies a simplistic method of verifying proper joint performance.

Fittings

Both standard and custom fittings are available for the HP Storm product line. A complete line of standard Nyloplast® PVC molded fittings are available in the 12"–30" (300-750 mm) mainline sizes.

Standard branch laterals are designed to accept SDR-35 or SDR-26 pipe.

Diameter Range

HP Storm is currently manufactured in the 12"–60" (300-1500 mm) size range and in 20-foot (6 m) lengths. The 20-foot (6 m) lengths aid in speed of installation and reduce the total number of joints.

Tap Connections

A standard tapping product, such as Inserta Tee®, is compatible with HP Storm.

Repair Couplers

Depending on local requirements, ADS offers a full range of repair coupling options. For soil-tight performance, split couplers and Mar Mac® repair bands are offered. Testable repair couplers are also available, which include stainless steel restraint bands and Nyloplast PVC repair sleeves.

12"–60" Structure Connections

Storm sewer structure connection requirements vary greatly by region. For soil-tight performance, HP Storm exterior corrugations provide an effective profile for grouted connections. For watertight performance, ADS offers a selection of options utilizing some of the most widely used manhole connectors from companies such as A-Lok®, Trelleborg® and Press Seal® Gasket Corporation.



Typical Inserta Tee Tap



Repair Coupler

HP Storm 12”–60” Pipe Specification

Scope

This specification describes 12- through 60-inch (300 to 1500 mm) ADS HP Storm pipe for use in gravity-flow storm drainage applications.

Pipe Requirements

ADS HP Storm pipe shall have a smooth interior and annular exterior corrugations.

- 12- through 60-inch (300 to 1500 mm) pipe shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2881 and AASHTO M330.
- Manning’s “n” value for use in design shall be 0.012.

Joint Performance

Pipe shall be joined using a bell and spigot joint meeting the requirements of ASTM F2881 or AASHTO M330. The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during joint assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have an exterior bell wrap installed by the manufacturer.

Fittings

Fittings shall conform to ASTM F2881 or AASHTO M330. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.

Field Pipe and Joint Performance

To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F1417 or F2487. Appropriate safety precautions must be used when field testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties

Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330, Section 6.1.

Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500 mm) diameters, the minimum cover shall be 2 feet (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1, Class 2 (minimum 90% SPD) or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.04. Contact your local ADS representative or visit our website at adspipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

| Nominal Diameter in (mm) | 12 (300) | 15 (375) | 18 (450) | 24 (600) | 30 (750) | 36 (900) | 42 (1050) | 48 (1200) | 60 (1500) |
|--|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|
| Average Pipe I.D. in. (mm) | 12.2 (310) | 15.1 (384) | 18.2 (462) | 24.1 (612) | 30.2 (767) | 36.0 (914) | 42.0 (1067) | 47.9 (1217) | 59.9 (1521) |
| Average Pipe O.D. in. (mm) | 14.5 (368) | 17.7 (450) | 21.4 (544) | 28.0 (711) | 35.5 (902) | 41.5 (1054) | 47.4 (1204) | 54.1 (1374) | 67.1 (1704) |
| Minimum Pipe Stiffness at 5% Deflection* #/in/in (kN/m ²) | 75 (517) | 60 (414) | 56 (386) | 50 (345) | 46 (317) | 40 (276) | 35 (241) | 35 (241) | 30 (207) |

* Minimum pipe stiffness values listed; contact a representative for maximum values.



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