

## N-12<sup>®</sup> LOW HEAD PIPE SPECIFICATION

### Scope

This specification describes 24- through 60-inch (600 to 1500 mm) N-12 Low Head pipe for use in low head / low pressure applications.

### Pipe Requirements

N-12 Low Head pipe shall have a smooth interior and annular exterior corrugations.

- 24- through 60-inch (600 to 1500 mm) pipe shall meet AASHTO M294, Type S or ASTM F2306 with the modifications listed herein.
- Manning's "n" value for use in design shall be 0.012.
- Where low head applications sustain continuous pressure, the sustained pressure shall not exceed 5psi and the surge pressure shall not exceed 10 psi.

### Joint Performance

Pipe shall be joined using a bell and spigot joint meeting the requirements of AASHTO M294 or ASTM F2306. The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gaskets are free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

### Fittings

Fittings shall conform to AASHTO M294 or ASTM F2306. Bell & spigot connections shall utilize a welded or integral bell & inline, valley or saddle gaskets meeting 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 ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

### Material Properties

Material for pipe and fitting production shall be high-density polyethylene conforming with the minimum requirements of cell classification 435400C for the corrugated exterior profile, and 445464C, for the interior liner as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The 24- through 60-inch (600 to 1500mm) pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in Sections 9.4 and 5.1 of AASHTO M294 and ASTM F2306 respectively. The interior liner resin shall have a material designation code of PE3408/PE3608 by the Plastic Pipe Institute and a Hydrostatic Design Basis of 1600 psi.

### Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exceptions that minimum cover in traffic areas for 24- through 48-inch (600 to 1200mm) diameters shall be one foot (0.3m) and for 60-inch (1500mm) diameter the minimum cover shall be 2-feet (0.6m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted) or Class 2 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.01. Contact your local ADS representative or visit our website at [www.adspipe.com](http://www.adspipe.com) for a copy of the installation guidelines.

### Build America, Buy America (BABA)

N-12 Low Head pipe, manufactured in accordance with AASHTO M294 or ASTM F2306, complies with the requirements in the Build America, Buy America (BABA) Act.

**Pipe Dimensions**

Pipe I.D. in (mm)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D.* in (mm)	27.8 (719)	36 (914)	42 (1067)	48 (1219)	54 (1372)	67 (1702)
Minimum Pipe Stiffness @ 5% Deflection #/in./in. (kN/m <sup>2</sup> )	28 (195)	28 (195)	22 (150)	20 (140)	18 (125)	14 (95)