

SECTION 02619

HIGH DENSITY POLYETHYLENE (HDPE)
SOLID WALL PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. High Density Polyethylene (HDPE) pipe for gravity sewers and drains, including fittings.
- B. HDPE pipe for sanitary sewer force mains, including fittings.

1.02 UNIT PRICES

- A. No separate payment will be made for HDPE pipe under this Section. Include cost in unit prices for gravity sanitary sewers and storm sewers.

1.03 SUBMITTALS

- A. Conform to requirements of all sections and provisions of these specifications.
- B. Submit shop drawings showing design of pipe and fittings indicating alignment and grade, laying dimensions, fabrication, fittings, flanges, and special details.

1.04 QUALITY CONTROL

- A. Provide the manufacturer's certificate of conformance to the Specifications.

1.05 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with documented experience of minimum 5 years of pipe installations that have been in successful, continuous service for same type of service as proposed Work.

PART 2 PRODUCTS

2.01 APPROVED AND PREAPPROVED PRODUCTS

- A. For pipe bursting/crushing existing sanitary sewers refer to Section 02768 – Pipe Bursting/Crushing Sanitary Sewers
- B. Solid wall pipe shall be produced with plain end construction for heat-joining (butt fusion) conforming to ASTM D2657. Utilize controlled temperatures and pressures for joining to produce a fused leak-free joint.

- B. Furnish solid wall pipe for sanitary sewer force mains with minimum working pressure rating of 150 psi, and with inside diameter equal to or greater than nominal pipe size indicated on Drawings.

2.02 MATERIALS

- A. Pipe and Fittings: High density, high molecular weight polyethylene pipe material meeting the requirements of Type III, Class C, Category 5, Grade P34, as defined in ASTM D1248. Material meeting the requirements of cell classification in accordance with ASTM D3350 is also suitable for making pipe products under these specifications.

- B. Gaskets

1. Use gaskets meeting requirement of ASTM F477. Use gasket molded into a circular form or extruded to the proper section and then spliced into circular form. When no contaminant is identified, use gaskets of a properly cured, high-grade elastomeric compound. The basic polymer shall be natural rubber, synthetic elastomer, or a blend of both.
2. Pipes to be installed in potentially contaminated areas as shown on the plans or indentified in the filed by the owner representative, especially where free product is found near the elevation of the proposed sewer, shall have the following gasket materials for the noted contaminants:

CONTAMINANT	GASKET MATERIAL REQUIRED
Petroleum (diesel, gasoline)	Nitrile Rubber
Other Contaminants	As recommended by the pipe manufacturer

- C. Lubricant. Use a lubricant for assembly of gasketed joints which has no detrimental effect on the gasket or on the pipe, in accordance with manufacturer's recommendations.

2.03 WORKMANSHIP

- A. Furnish pipe and fittings that are homogeneous throughout and free from visible cracks, holes, foreign inclusions, or other injurious defects. Provide pipe as uniform as commercially practical in color, opacity, density, and other physical properties.

2.04 INSPECTIONS

- A. The Owner Representative reserves the right to inspect pipes or witness pipe manufacturing. Such inspection shall in no way relieve the manufacturer of the responsibilities to provide products that comply with the applicable standards and these Specifications.
- B. Manufacturer's Notification to Customer. Should the Owner Representative wish to witness the manufacture of specific pipes, the manufacturer shall provide the Owner's Representative with adequate advance notice of when and where the production of those specific pipes will take place.

- C. Failure to Inspect. Approval of the products or tests is not implied by the Owner Representative's decision not to inspect the manufacturing, testing, or finished pipes.

2.05 TEST METHODS

- A. Conditioning. Conditioning of samples prior to and during tests is subject to approval by the Owner Representative. When referee tests are required, condition the specimens in accordance with Procedure A in ASTM D618 at 73.4 degrees F plus or minus 3.6 degrees F (23 degrees C plus or minus 2 degrees C) and 50 percent relative humidity plus or minus 5 percent relative humidity for not less than 40 hours prior to test. Conduct tests under the same conditions of temperature and humidity unless otherwise specified.
- B. Flattening. Flatten three specimens of pipe, prepared in accordance with Paragraph 2.05A, in a suitable press until the internal diameter has been reduced to 40 percent of the original inside diameter of the pipe. The rate of loading shall be uniform and at 2-inches per minute. The test specimens, when examined under normal light and with the unaided eye, shall show no evidence of splitting, cracking, breaking, or separation of the pipe walls or bracing profiles.
- C. Joint Tightness. Test for joint tightness in accordance with ASTM D3212, except replace the shear load transfer bars and supports with 6-inch-wide support blocks that can be either flat or contoured to conform to the pipe's outer contour.
- D. Purpose of Tests. The flattening and the joint tightness tests are not intended to be routine quality control tests, but rather to qualify pipe to a specified level of performance.

2.06 MARKING

- A. Mark each standard and random length of pipe in compliance with these Specifications with the following information:
 - 1. Pipe size
 - 2. Pipe class
 - 3. Production code
 - 4. Material designation

PART 2 EXECUTION

2.01 INSTALLATION

- A. Conform to requirements of the following Sections:
 - 1. Section 02730 - Gravity Sanitary Sewers
 - 2. Section 02761 - Sliplining Sanitary Sewers

- B. Install pipe in accordance with the manufacturer's recommended installation procedures.

END OF SECTION