

## **SECTION 3145 – HIGH DENSITY POLYETHYLENE GRAVITY SEWER PIPE**

### **PART 1 - GENERAL**

#### **1.1 SCOPE OF WORK:**

Provide all labor, materials, equipment and services required for furnishing and installing extra high molecular weight (EHMW) PE 3408 high density polyethylene (HDPE) piping and appurtenances specified herein.

#### **1.2 RELATED WORK SPECIFIED ELSEWHERE:**

- A. Trench Excavation: Section 3720
- B. Bedding and Backfill: Section 3730

### **PART 2 - PRODUCTS**

#### **2.1 EHMW PE 3408 HIGH DENSITY POLYETHYLENE (HDPE) NON-PRESSURE PIPE:**

- A. EHMW PE 3408 HDPE pipe may be used for sewers DIPS pipe size 10"-48". EHMW PE 3408 HDPE sewer pipe materials shall meet ASTM D 3350 as grade PE 34 with cell classifications 345464C (black) or 345464E (non-black and color). All pipe shall be joined by the butt fusion procedure qualified in accordance with Title 49 Code of Federal Register, Part 192.283.
- B. All pipe shall be suitable for use as a gravity sewer conduit. Pipe shall have green service identification striping extruded into the outer pipe surface to denote that the pipeline is a sanitary sewer.
- C. A manufacturer's certificate that the EHMW PE 3408 HDPE material and pipe was manufactured and tested in accordance with the appropriate ASTM specification shall be furnished to the ENGINEER prior to installation of the pipe.
- D. All pipe, fittings, and joints will be inspected by the ENGINEER or his authorized representative immediately prior to installation and all rejected pieces must be completely removed from the project. Pipe acceptable to the ENGINEER shall be substituted for rejected pieces at the CONTRACTOR's expense. No repaired pipe or fittings will be allowed; undamaged lengths of pipe may be salvaged by neatly facing off the damaged portion of the pipe.
- E. Pipe must be delivered to the job site by means that will adequately support it and not subject it to undue stresses. In particular, the load shall be so supported that the bottom rows of pipe are not damaged by crushing. Pipe shall be unloaded carefully and strung or stored as close to the final point of placement as practical.
- F. All EHMW PE 3408 HDPE pipe shall be tested for deflection as described in Section 3820 and hydrostatic tested for leakage as described by the pipe manufacturer's specifications.

#### **2.2 PIPE JOINTS:**

EHMW PE 3408 HDPE sewer pipe joints shall be formed by the butt fusion process. The CONTRACTOR shall furnish evidence of satisfactory performance of the joint for previous installations.

- A. Testing of EHMW PE 3408 HDPE sewer pipe joints, when so directed by the ENGINEER, shall be as follows:
  - 1. On every day butt fusions are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12" minimum or 30 times the wall thickness in length with the fusion in the center, and 1" minimum or 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be

made, cooled completely and tested. Butt fusion of pipe to be installed shall not commence until a trial fusion has passed the bent strap test. The ENGINEER shall reserve the right to require testing of any joint that appears to be of inferior composition.

The CONTRACTOR shall provide all equipment necessary to conduct the pipe joint test.

- B. Test Specimens - The ENGINEER or his authorized representative may initially and periodically select random sewer pipe for test purposes. The tests shall be performed on not less than two specimens and not more than 1 percent of the total pipe length of each size and joint type required for the project.

### **2.3 MANUFACTURERS:**

Approved manufacturers of EHMW PE 3408 HDPE sewer pipe are CP Chem Performance Pipe (Driscoplex Polyethylene Piping) or approved equal.

### **PART 3 - BASIS OF PAYMENT**

Payment for EHMW PE 3408 HDPE gravity sewer lines of the different sizes at the various depths of cut will be made at the contract unit price per linear foot in place, which price will include compensation for furnishing pipe, all trenching (including rock excavation), bedding, laying, jointing, testing, backfilling, surface restoration (except pavement replacement) connections to new manholes, and all plugs as required. The depth of cut to be paid for shall be measured from the existing ground surface at the top of the trench to the invert of the sewer line. The quantity of sewer to be paid for shall be the length of pipe measured along the centerline of the completed pipeline without deducting the length of branches, fittings and manhole inverts. Connections of existing sewers to new sewers will be incidental to this pay item.

END OF SECTION