

SECTION 35 51 13 - HDPE FLOATS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:
 - 1. Camels.
 - 2. Backing pipes.
- B. The Contractor shall furnish all tools, equipment, materials, and supplies, and shall perform all labor, supervision, fabrication, assembly, and installation of the complete HDPE float system and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.
- C. Related Requirements:
 - 1. Section 05 50 00 “Metal Fabrications” for connection hardware and chain.

1.3 COORDINATION

- A. Coordinate openings, profiles and anchorage with work in other Sections.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Welder qualifications.
- C. Shop Drawings: Submit prior to fabrication.
 - 1. Show layout of floats, details of all connections, and all other details necessary and pertinent to the construction of the floats.

1.5 QUALITY ASSURANCE

- A. The manufacturer must have an ongoing quality assurance program. At the option of the Engineer, the manufacturer shall submit a copy of their operational quality assurance program and shall construct no floats until the Engineer has approved this quality assurance program.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Contractor shall take care in establishing handling methods to avoid damage to floats during construction, storage, assembly, and installation.
- B. Storage of floatation units shall be on level surfaces. Care shall be taken to avoid damage caused by over-stacking.
- C. Materials delivered and stored shall be properly stored on dunnage or by other appropriate means to prevent direct contact with the ground and unnecessary damage.
- D. Floats shall be protected against damage from any cause.
- E. Any damaged units shall be rejected and removed from the assigned job.

PART 2 - PRODUCTS

2.1 HIGH DENSITY POLYETHYLENE (HDPE)

- A. High Density Polyethylene (HDPE) shall be per ASTM D3350 having a minimum cell classification of 345464C. All cell classifications shall meet the minimum property values as listed in ASTM D3350, Table 1. HDPE material shall be black in color. Materials shall contain a minimum of 2% carbon black and ultraviolet light stabilized meeting the minimum requirements for Clas C weather resistance. Material shall be compatible with thermoplastic welding.
- B. HDPE plate and sheet stock shall be Type IV, Grade W9 and weldable, meeting the minimum material properties as outlined in Table 4C of ASTM D1248. Material shall be compatible with thermoplastic welding. Color shall be black, containing 2% carbon black and ultraviolet light stabilized for long term atmospheric exposure. Test for density and tensile strength by test methods indicated in ASTM D1248.

2.2 EXPANDED POLYSTYRENE (EPS)

- A. Expanded Polystyrene shall be closed cell expanded polystyrene in accordance with ASTM C578 and conforming to the following minimum properties and ASTMs:
 - 1. Density: 0.9 lbs./cu. ft., ASTM C303 or D1622.
 - 2. Compression Strength: 10 psi, ASTM D1621.
 - 3. Flexural Strength: 25 psi, ASTM C203.
 - 4. Dimensional Stability: 2% Max., ASTM D2126.
 - 5. Moisture Absorption: 4% Max., ASTM C272.
 - 6. Buoyancy – Floatation: 60 lbs./cu. ft.

2.3 HARDWARE

- A. Unless otherwise noted, all connection hardware shall be hot-dipped galvanized or stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Contractor shall examine the job site before preparing shop drawings to verify all physical conditions and surroundings.

3.2 FABRICATION OF HDPE STRUCTURES

- A. HDPE pipe and plates shall be fabricated to the nominal dimensions and features indicated on the plans. Fabrication of plastic components shall be performed only in an environmentally controlled, covered shop facility by qualified personnel. Camel and backing pipes shall be fabricated using heat fusion methods to weld HDPE pipe and flat stock with full penetration fusion welds. Cut pipe and plates using sharp bladed power saws or other approved methods that will produce neat lines and accurate dimensions.
- B. Welding of plastics shall only be performed by qualified personnel with experience in thermos plastic welding procedures and equipment. Submit statement of welder's qualifications for approval prior to conducting any welding.

3.3 EXPANDED POLYSTYRENE FOAM

- A. Measure and document the internal dimensions of the HDPE float structure after allowing them to stabilize in the shop controlled environment. Order pre-cut foam as necessary and size them within tolerance of the HDPE structure using factory approved methods. Chamfer interior corners to allow for fillet welds as required. Insert foam into HDPE float structure, contacting inside walls. Care shall be taken to prevent excessive damage to foam.

3.4 INSTALLATION

- A. General: Install HDPE float structures with chain lengths and configuration to match existing conditions.

END OF SECTION