

SECTION 31 52 23
WATER INFLATED COFFERDAMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Water inflated cofferdams.

1.3 DEFINITIONS

- A. Freeboard – The amount of an installed water-inflated barrier above the surface of the water being blocked.
- B. Internal Baffle System – A device used to restrict movement of a water-inflated cofferdam parallel to a force exerted on the barrier.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated include material descriptions, dimensions of individual components and profiles, and accessories for each cofferdam.
- B. Worksite Assessment Sheet: Contractor to complete, sign and submit. Include all requested customer information, project information, and job site conditions.
- C. **[LEED Submittal:]**
 - 1. **[Product Data for SS Credit 5.1: For conserving existing natural areas.]**
 - 2. **[Product Data for ID Credit 1: [For innovative approach to dewatering site.][For exemplary performance in dewater site.]]**

1.5 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace cofferdam components that fail in materials or workmanship within specified warranty period.

1.6 QUALITY ASSURANCE

- A. ASTM Compliance:
 - 1. Comply with ASTM D-3776 for weight of PVC material.
 - 2. Comply with ASTM D 751 for tensile strength, tear strength and adhesion.

PART 2 - PRODUCTS

2.1 WATER INFLATED COFFERDAMS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Aqua-Barrier™ product as manufactured by Hydrological Solutions, Inc. or equal.
- B. General: Self-contained, UV protected, field repairable, welded seam, single tube with inner restraint baffle(s)/diaphragm(s) stabilization system, threaded fill and drain ports, and end lifting loops. The water-inflated dam must be capable of stand-alone installation without any external mechanical or gravitational stabilization devices and maintain mechanical stability in addition to providing anti rolling when exposed to uneven hydrostatic pressure from either side.
- C. Dam bladder and lifting loops: Heavy gauge, 30 oz/sq. yd., PVC fabric reinforced with polyester.
- D. Fill Ports: 4-inch I.D., industrial grade, with threaded cap.
- E. Drain Ports: 8-inch I.D., with threaded cap.
- F. Internal Baffle: Perforated PVC **[Single][Double]** baffle system.
- G. Accessories:
 - 1. Field repair kit: Vinyl adhesive and patch material.
 - 2. **[Fill Pipes.]**
 - 3. **[Protective membrane.]**
- H. Performance Ratings: Tested and rated according to ASTM D 751.
 - 1. Tensile Strength: 700x650 (±30) lbs./in.
 - 2. Tear Strength: 170x140 (±20) lbs.
 - 3. Adhesion: 20x17 (±2) lbs./in.
- I. Cold Crack and Low Temperature Flexibility: -22°F per MIL-C-20696.

PART 3 - EXECUTION

3.1 SHIPPING & STORAGE

- A. Dams shall be packaged on standard pallets for shipping and storage.

3.2 EXAMINATION

- A. Examine dams for shipping damage and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Place, maintain, and remove cofferdams in the locations **[that provide suitable access to the area of work required defined by the drawings.] [noted on the drawings.]**

- B. Locate cofferdams so as to cause the least possible interference with water borne traffic, the locations and extent of such cofferdams will be subject to the approval of the proper Authorities.
- C. Install individual units together by overlapping the end of the units the specific length which will create a watertight connection.
- D. Install and remove cofferdams in accordance with manufacturer's recommendations.
- E. Install cofferdams with a minimum of 25% freeboard (amount of barrier above water level). Increase freeboard as required by manufacturer for exposures to high water velocities, slick soil conditions or other relevant hydrostatic conditions. Do not stack cofferdams.
- F. Construct cofferdams so as to keep the dewatered area free from water, ice, or snow and to permit excavation to be carried to the required depth. Any and all damage caused by the failure of a cofferdam from any cause whatsoever, shall be the responsibility of the Contractor. It shall also be the Contractor's responsibility to protect any and all stream banks from erosion by reason of restriction of the channel caused by the erection of cofferdams. All material which erodes from the banks during the time that the cofferdams are in place shall be removed as required and replaced by the Contractor at his own expense.
- G. Remove debris from the area of installation to minimize the potential of puncturing the cofferdam.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to train Contractor's representative on the installation and operation of the cofferdams.
- B. Keep away from heat, welding, open flames, and sparks.
- C. Provide adequate ventilation when using vinyl cement for patching.

END OF SECTION 31 52 23