

SECTION 03 15 13

WATERSTOPS

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes:

1. Requirements for furnishing and installing waterstops in concrete.

1.02 REFERENCES

A. This Section incorporates by reference the latest revisions of following documents:

1. United States Army Corps of Engineers (COE)
 - a. COE CRD-C-513 Corps of Engineers Specifications for Rubber Waterstops
 - b. COE CRD-C-572 Corps of Engineers Specifications for Polyvinylchloride Waterstops

1.03 SUBMITTALS

A. Submit

1. Shop Drawings: Submit single-line diagram showing locations of all joints to receive waterstops, indicate type and size.
 - a. Include locations for shop fabricated and field fabricated splices to be used in the Work.
2. Detail Drawings:
 - a. Show location of waterstops.
 - b. Show details of supports.

B. Transmit

1. Product Data:
 - a. Manufacturers' product data.
 - b. Manufacturer's written instructions for storage, handling, and installation.
 - c. Material Safety Data Sheets.
2. Samples:
 - a. 12-inch long sample of each waterstop.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle waterstops in conformance with manufacturers' written instructions.

PART 2 - PRODUCTS

2.01 MANUFACTURED PRODUCTS

- A. PVC waterstops for construction and expansion joints meeting the requirements of COE CRD-C-572.
 1. The PVC waterstop shall be extruded from an elastomeric plastic material of which the basic resin is prime virgin polyvinyl chloride.
 2. The PVC compound shall not contain any scrapped or reclaimed material or pigment.
- B. Expansive waterstop comprised of hydrophilic, modified rubber meeting the requirements of COE CRD-C-513.
 1. The waterstop shall be a combination of chloroprene rubber and chloroprene rubber modified to impart hydrophilic properties.
 2. The waterstop shall have a delay coating to inhibit initial expansion due to moisture present in fresh concrete.
- C. Self-Expanding Butyl Strip Waterstops for use on hycrete concrete: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete. Locations shall be limited to use only with Hycrete concrete. Below grade use shall be limited to Hycrete concrete locations where complete waterproofing membranes are provided on the exterior of the concrete. Install per manufacturer's written instructions. Acceptable products include the following or approved equal:
 1. Cetco Waterstop Rx
 2. Sika Swellstop

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Provide waterstops types and extents in locations as indicated on Contract Drawings.
- B. Install waterstops in conformance with the manufacturer's written instructions.
 1. Install waterstops accurately in place and secure rigidly against movement by methods adequate to assure proper support and embedment during the placement of concrete.
 2. Install waterstops in the longest practicable length, with joints spliced to form a continuous watertight seal for the full length of the joint.
 3. Carefully place and consolidate concrete to ensure a complete filling and bond between the concrete and waterstop. Cement-sand grout slurry may be used

where necessary to assure contact and bond of waterstop and concrete without voids.

4. PVC waterstops:

- a. Field butt splices shall be heat fused welded using a Teflon covered thermostatically controlled waterstop splicing iron at approximately 380 degrees Fahrenheit. Follow manufacturer's recommendations.
- b. Lapping of waterstop and use of adhesives, or solvents shall not be allowed.
- c. Center waterstop in joint and secure waterstop in correct position using grommets, pre-punched holes, or hog rings spaced at 12" on centers along the length of the waterstop and wire tie to adjacent reinforcing steel.

5. Expansive waterstops:

- a. Cut coil ends square (or at proper angle for mitered corners) with shears or sharp blade to fit splices together without overlaps.
- b. Splices and exposed end cells shall be sealed using manufacturer's approved adhesive.

6. Self-Expanding Butyl Strip Waterstops:

- a. Cut coil ends square (or at proper angle for mitered corners) with shears or sharp blade to butt joints together without overlaps.
- b. Locate waterstops in center of joint unless otherwise indicated on Drawings. Position and secure using manufacturer's recommended adhesive, mechanical fasteners, or other methods to ensure there is sufficient concrete coverage on all sides and waterstop remains in place during concrete placement.
- c. Protect installed waterstop from premature expansion prior to concrete placement. Replace waterstop material that exhibits significant expansion prior to concrete encapsulation.

- C. Repair or replace damaged, defective or misaligned waterstop material in conformance with the manufacturer's instructions.

3.02 FIELD QUALITY CONTROL

- A. Waterstop installation will be subject to inspection and acceptance by the Resident Engineer. Allow access for inspections.

END OF SECTION