

SECTION 03 15 13

WATERSTOPS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Waterstops.

1.02 MEASUREMENT AND PAYMENT

- A. Measurement: Waterstops for concrete will not be measured separately for payment.
- B. Payment: Waterstops for concrete will be paid for as part of the indicated Contract unit price or lump-sum price for the associated concrete or paving work as indicated in the Bid Schedule of the Bid Form.

1.03 REFERENCES

- A. U. S. Army Corp of Engineers, Concrete Research Division (CRD):

1. CRD-C513 Rubber Waterstops
2. CRD-C572 Polyvinylchloride Waterstops

1.04 SUBMITTALS

- A. General: Refer to Section 01 33 00 - Submittal Procedures, and Section 01 33 23 - Shop Drawings, Product Data, and Samples, for submittal requirements and procedures.
- B. Shop Drawings: Submit drawings showing locations of all joints to receive waterstops and methods of supporting waterstops in forms without displacement from pressure of concrete placement.
- C. Product Data: Submit manufacturers' product data of proposed waterstops for review.
- D. Samples: Submit 12-inch long sample of typical waterstop and sample of field splice.

1.05 STORAGE AND HANDLING

- A. Store waterstops in a manner that provides free circulation of air around the material.
- B. Protect waterstop material from direct sunlight while in storage, and when only partially encased in concrete for over 48 hours.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Waterstops shall conform to CRD-C513 or CRD-C572, as applicable.

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- B. Material for rubber waterstops shall be natural rubber, suitable synthetic rubber, or a blend of natural and suitable synthetic rubber.
- C. Material for PVC waterstops shall be an elastomeric plastic compound, the basic resin of which shall be polyvinyl chloride and containing any additional resins, plasticizers, or other materials needed for the material to comply with the requirements specified.
- D. Waterstops shall be manufactured by such a process that they will be dense, homogenous, and free from holes and other imperfections. The cross section of the waterstop shall be uniform and symmetrical along its entire length.
- E. Waterstops shall have the cross-sectional shape and dimensions indicated. Split-leg waterstops will not be permitted.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Provide waterstops for all construction joints in exterior walls, base slabs, suspended slabs, roof slabs, and other locations as indicated.
- B. Install waterstops accurately in place and secure rigidly against movement by methods adequate to assure proper support and embedment during the placement of concrete.
- C. Unless otherwise indicated, install waterstops so that embedment in concrete will be equal on both sides of the joint.
- D. Install waterstops in the longest practicable length, with joints spliced to form a continuous watertight seal for the full length of the joint.
- E. Carefully place and consolidate concrete to ensure a complete filling and bond between the concrete and waterstop. A cement-sand grout slurry may be used where necessary to assure contact and bond of waterstop and concrete without voids.
- F. When installed in an expansion joint, locate waterstop so that the closed hollow center-bulb remains in the gap of the joint, to allow for maximum elongation with minimum stress on that portion of the waterstop embedded in the concrete. Install expansion joint material and a sealant in the joint, as indicated, to prevent foreign matter from accumulating in the joint area. When a sealant is used, place a separator (backer rod) between the sealant and the waterstop to assure that both the waterstop and sealant perform properly.
- G. Repair or replace damaged, defective or misaligned waterstop material in accordance with the manufacturer's instructions.

3.02 SPLICING

- A. PVC waterstops shall be butt-spliced by applying a thermostatically controlled electric source of heat and welding material in accordance with the manufacturer's splicing instructions. Rubber waterstops shall be butt-spliced by field vulcanizing. Lapped splices will not be permitted. Splices shall have a tensile strength not less than 60 percent of the unspliced materials' tensile

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strength. Maintain continuity of waterstop and bulbs.

3.03 FIELD QUALITY CONTROL

- A. Waterstops and their joints shall be inspected for misalignment, bubbles, inadequate bond, porosity, cracks, offsets, and other defects that could reduce the effectiveness of joints against water penetration.

END OF SECTION 03 15 13