

## Chapter 5 Sampling

### 5-1. General

The materials covered by this manual will be sampled lot by lot for acceptance. The manufacturer or supplier submits a product to the contractor in groups or lots which are accepted or rejected in their entirety on the basis of the performance of the samples taken from that lot. The manufacturing lot is considered the material produced under the same conditions such as single batch of raw materials, single production line, single production method, single production shift, and under a single curing period. The material may be sampled at the place of manufacture, at the point of delivery, or at the project site.

### 5-2. Material

All samples of waterstops and other preformed joint materials shall be submitted to CEWES-SC-EM<sup>1</sup> for determination of compliance with their respective specification requirements. The samples of materials must be representative of the material to be used in the construction project. The quantity of material necessary to conduct the required number of tests for determining compliance of the material to meet specification requirements will be sampled.

#### *a. Waterstops.*

(1) Metallic waterstops. Steel, stainless steel, copper, lead, bronze, and other metallic waterstops will be sampled and tested in accordance with their respective requirements. Generally, each material shall be sampled with sufficient material to produce a minimum of five test specimens for each test procedure required.

(2) Nonmetallic waterstops. Polyvinyl chloride and rubber waterstops will be sampled and tested in accordance with the requirements of CRD-C 572 and CRD-C 513, respectively. Nonmetallic waterstops are manufactured in lots or runs for a specified period of time or type or size of material needed to maintain supply by the manufacturers. Generally, each manufacturing lot or run shall be sampled with a minimum of 1 m (4 ft) of finished waterstop and each 61 m (200 ft) required for the project shall be sampled with a minimum of 300 mm (1 ft) of

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<sup>1</sup> See paragraphs 5-6.

finished waterstop. The 1-m (4-ft) sample shall be evaluated to determine compliance of the waterstop material to the specification requirements. Each of the 300-mm (1-ft) samples shall be evaluated to determine continuity of the waterstop throughout the manufacturing lot or run for the project. All tests will be performed on test specimens prepared from randomly taken samples representing the manufacturing lot or run.

*b. Preformed joint materials.* Preformed joint materials will be sampled in accordance with the requirements of CRD-C 531 (ASTM D 2628)<sup>2</sup> and CRD-C 547. In general, each manufacturing lot of lineal joint material will be sampled with a minimum of 3 m (9 ft) of preformed joint material.

*c. Miscellaneous joint materials.* Preformed elastomeric gaskets and joint materials shall be sampled in accordance with the requirements of CRD-C 549 (ASTM C 509). Preformed joint materials of the nonlinear (such as gaskets and tapes) nature that do not lend themselves to testing because of their complicated shapes, size, or component nature will be sampled for each particular project.

*d. Lubricants for installing preformed joint material.* The lubricant used in installing preformed joint materials will be sampled in accordance with the requirements of CRD-C 532 (ASTM D 2835). In general, the 1-L (1-qt) aliquot sample shall consist of a composite from three or more randomly chosen containers.

### 5-3. Sampling at the Manufacturer

When samples are to be taken at the manufacturing plant, the purchaser shall be notified by the contractor, supplier, or the manufacturer prior to sampling to allow arrangement for inspection and sampling. Upon obtaining each sample, the sample will be identified by lot number, specific location within the manufacturing lot where the sample was taken, date sampled, and name of the person conducting the sampling. The samples plus appropriate documentation indicating the Project, District, Contract Number, and Point of Contact, shall be sent to the laboratory.

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<sup>2</sup> Test methods cited in this manner are from the *Handbook of Concrete and Cement* (USAEWES 1949) and the American Society for Testing and Materials (ASTM) *Annual Book of ASTM Standards* (current edition), respectively.

#### **5-4. Sampling at the Project Site**

When samples are to be taken at the project site, the Project Engineer will be notified by the contractor prior to sampling to allow inspectors to observe the sampling procedure. Each sample will be uniquely identified by lot number, location within the lot of the material on site, date sampled, and the name of the person conducting the sampling. The samples, plus appropriate documentation of Project, District, Contract Number, and Point of Contact, will be sent to the laboratory.

#### **5-5. Retest Samples**

When the results of tests on the initial samples fail to comply with the project specifications, the Government

may request the contractor to submit additional samples from the same manufacturing lot or new samples from another manufacturing lot, in which case the Government inspector will be present to observe the sampling.

#### **5-6. Laboratory**

All waterstops and other preformed joint materials shall be sent to the U.S. Army Engineer Waterways Experiment Station, ATTN: CEWES-SC-EM, 3909 Halls Ferry Road, Vicksburg, Mississippi, 39180-6199.