

CRD-C 301-67

METHODS FOR
SAMPLING, PACKAGING, MARKING, AND DELIVERY OF
MEMBRANE-FORMING COMPOUNDS FOR CURING CONCRETE

Scope

1. These methods outline the procedures to be followed in sampling, packaging, marking, and delivery of membrane-forming compounds for curing concrete.

Sampling

2. All test samples will be taken at the point of origin by an inspector representing one of the three Corps of Engineers testing laboratories designated to test membrane-forming compounds for curing concrete (Ohio River Division, Mariemont, Ohio; South Pacific Division, Sausalito, California; U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi). The laboratory that requests the sampling and performs the tests will be that situated nearest to the location of the material to be sampled. The source from which the compound is to be obtained shall be selected by the contractor well in advance of the time when the compound will be required in the work. The Contracting Officer will notify the laboratory of the source from which the compound is to be obtained. Details of the sampling procedure are given below.

Packaging and Marking

3. The material shall be packed in suitable containers. Immediately after sampling, all containers whose contents are represented by samples shall be sealed in such a manner that no material may be added or withdrawn from the containers without breaking the seals. The required seals shall be furnished by the manufacturer. Each container, except bulk storage tanks, shall be plainly marked with the following information:

Brand name and type designation,
Manufacturer's name,
Manufacturer's lot number,

Drum number (all of the drums containing material from a given lot shall be numbered consecutively), and
"AGITATE THOROUGHLY PRIOR TO USING."

Shipping containers filled with accepted material from bulk storage tanks shall be loaded and sealed in the presence of an inspector of the Corps of Engineers.

Delivery

4. No material sampled shall be shipped from the point of origin or manufacturer's or distributor's warehouse to the project prior to receipt of a notice of acceptance and an identifying symbol number from the laboratory. The seals shall be broken in the presence of a representative of the Contracting Officer at the time of use on the project.

Detailed Instructions

Introduction

5. These detailed instructions have been prepared for the purpose of familiarizing inspectors of the Corps of Engineers and manufacturers with the procedure to be followed in sampling of membrane-forming compounds at the manufacturer's plant or warehouse. Careful attention to and compliance with the sampling procedure described herein will assist materially in expediting the testing of the material.

Authority for Sampling

6. Upon receipt by the laboratory of requests for sampling and testing, the Corps of Engineers office nearest the location at which the material is stored will be requested by the laboratory to perform the sampling. Receipt of this request will be the

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authority for the office concerned to proceed with the sampling of the material and to charge the laboratory for costs incurred in accomplishing the work. The request for the sampling will include the following information on the material to be sampled:

Manufacturer's name and address,
Location of material to be sampled,
Brand name,
Type,
Total gallons to be sampled, and
Appropriation symbol chargeable
for costs of sampling and testing.

Time and Place of Sampling

7. The office that is to perform the sampling will obtain from the manufacturer information as to the time and place at which the material will be available for sampling.

Supplies Necessary for Sampling

8. The following supplies and equipment will be carried by the inspector or available to him at the sampling location by prior arrangement with the manufacturer.

(a) One-Quart Sample Containers.- Containers will be supplied by the manufacturer. Containers with friction lids which are sealed by soldering or clips are recommended.

(b) Labels.- Each sample shall be identified with a label securely attached to the sample container. The label shall contain the information called for on WES Form 897 (Fig. 1).

(c) Field Book.- A field book will be carried by the inspector for recording the brand and type of material, date sampled, sample numbers, lot numbers, total quantity sampled, and other pertinent information required to enable him to submit a complete report on the sampling operation.

(d) Bill of Lading.- Government bill of lading for forwarding the samples to the laboratory will be provided by the District performing the sampling.

Sampling

9. Samples may be obtained by

whichever of the following procedures appears to be most suitable:

(a) Bulk Storage.- Two samples, each approximately 2/3 qt in size, shall be taken from the top, middle, and bottom contents of the storage tank. The sample may be taken from drain cocks on the side of the tank, or by lowering weighted bottled or cans into the material. In the latter case, the bottle or can should be fitted with a stopper which can be removed by a string or wire attached to it after it has been lowered to the proper depth. The contents of the tank shall be agitated thoroughly prior to and during the sampling operation.

(b) Drum Storage.- Two samples will be taken, each approximately 2/3 qt in size, for every 275 gal (5 drums) or lesser amount of material, which is loaded in drums at the time of sampling. The containers from which the samples are taken shall be agitated thoroughly just prior to and during the sampling operation.

(c) During Filling of Drums.- In the event that the quantity of material to be sampled is to be discharged from bulk storage into drums in the presence of the inspector taking the samples, three pairs of samples, each approximately 2/3 qt in size, shall be taken: one pair during the filling of the first drum, one pair after half the drums have been filled, and one pair during the filling of the last drum.

Each sample container shall be filled approximately 2/3 full and sealed. One set of samples shall be packed securely in a suitable shipping container and shipped to the laboratory. The other set of samples will be kept by the sampling agency until the tests have been completed or until the laboratory has requested that they be shipped to it. If the laboratory does not request that they be shipped, they can be discarded when testing is complete. Each test sample will be marked with information listed in subparagraph 8(b).

Sealing and Marking

10. All containers whose contents are represented by samples shall be sealed immediately upon completion

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CORPS OF ENGINEERS U. S. ARMY _____ DIVISION	REPORT OF SAMPLING (CRD-C 13, CRD-C 301)	ADDRESS:
1. MATERIAL SAMPLED: <input type="checkbox"/> AIR-ENTRAINING ADMIXTURE <input type="checkbox"/> MEMBRANE-FORMING CURING COMPOUND <input type="checkbox"/> OTHER _____		
2. APPLICABLE SAMPLING METHOD: <input type="checkbox"/> CRD-C 13 (AIR-ENTRAINING ADMIXTURE) <input type="checkbox"/> CRD-C 301 (CURING COMPOUNDS) <input type="checkbox"/> OTHER _____		
3. OFFICE REQUESTING SAMPLING: _____		
4. DIVISION LABORATORY TO WHICH SAMPLES ARE SENT: _____		
5. INSPECTION OFFICE: _____		
6. MANUFACTURER OR DISTRIBUTOR: _____		
7. LOCATION AT WHICH SAMPLED: _____		
8. BRAND NAME: _____ TYPE: _____		
9. MANUFACTURER'S LOT NUMBER: _____		
10. TOTAL QUANTITY SAMPLED: _____ (GAL) (LB)		
11. TOTAL QUANTITY SAMPLED: _____ (DRUMS) (BAGS)		
12. SAMPLES TAKEN: <input type="checkbox"/> FROM FILLED DRUMS OR BAGS <input type="checkbox"/> FROM BULK STORAGE <input type="checkbox"/> DURING FILLING OF DRUMS OR BAGS <input type="checkbox"/> OTHER _____		
13. SAMPLE NO: _____ OF _____ SAMPLES		
14. QUANTITY REPRESENTED BY THIS SAMPLE: _____ (GAL) (LB)		
15. DRUM (BAG) NUMBERS REPRESENTED BY THIS SAMPLE: _____		
16. TYPE OF SEAL OR MARKING USED ON CONTAINERS REPRESENTED BY THIS SAMPLE: _____		
17. DATE SAMPLES TAKEN: _____		
18. DATE SAMPLES SHIPPED: _____		
19. BILL OF LADING NO. FOR SAMPLE SHIPMENT: _____		
20. PROJECT CONSIGNED TO: _____		
21. PROJECT CONTRACT NO. _____		
22. USING DISTRICT: _____		
23. CONTRACTOR: _____		
24. CONTRACTOR'S PURCHASE ORDER NO. _____		
25. DATE: _____		
26. INSPECTOR'S NAME: _____		
27. INSPECTOR'S TITLE: _____		
REMARKS _____		
NOTE: FOR SAMPLES OF JOINT SEALERS TO BE TESTED FOR COMPLIANCE WITH FEDERAL SPECIFICATIONS SS-S-00167 OR SS-S-164, THE FOLLOWING INFORMATION SHOULD BE OBTAINED FROM THE MANUFACTURER AND INSERTED BELOW: POUR POINT: _____ SAFE HEATING TEMPERATURE: _____		

WES FORM 897
DEC. '55

Fig. 1

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of sampling. The sealing will be done by and at the expense of the manufacturer under the supervision of the Government inspector. It will be the duty of the inspector to assure himself and the Government that the material is sealed in such a manner that there will be no possibility of adding or withdrawing material from the containers without destroying the seals. All shipping containers shall be sealed and marked with the brand name and type, manufacturer's name and address, manufacturer's lot number, and the laboratory number assigned to the drum. In the case of accepted material in bulk storage, the seals may be removed from the outlet of the tank under the supervision of an inspector of the Corps of Engineers for shipment, but should be replaced after each withdrawal until the supply has been exhausted.

Report of Sampling

11. As soon as possible after completion of the sampling, a complete report should be prepared on WES Form 897 (Fig. 1), and forwarded by the inspector with the bill of lading on which the samples were shipped to the laboratory.

General Information

12. This section is not concerned with the sampling, but describes the procedure set up for the testing and release of concrete during compounds. It is believed that this information maybe of assistance both to the using District and the office performing the sampling. Upon completion of the required tests, the laboratory will pro-

vide the office that performed the sampling with information as to the acceptance or rejection of the material sampled. If accepted, a laboratory symbol will be supplied which the manufacturer or distributor shall mark on each drum prior to shipping. If rejected, the sampling office will be requested to remove the seals and release the material to the manufacturer. The Project Engineer for all projects using the material from the lot numbers represented by the test samples will be provided by the laboratory with a completed copy of WES Form 783 (CRD-C 300, Fig. 1), which reports the test results and provides the symbol number or numbers with which all containers of accepted material should be marked. The manufacturer will advise the Project Engineer of each shipment of accepted material to the job. The laboratory symbol number reported on the shipment report provided by the manufacturer should agree with the laboratory symbol number assigned in the test report provided by the laboratory and the laboratory symbol number shown on the containers should agree with both. The information provided by the manufacturer at the time of shipment should include the following: brand name and type, name of laboratory that performed tests, date of shipment, name of contractor shipped to, name of project for use on, contract number, project location, company lot number, laboratory acceptance symbol, gallons shipped, drums shipped, truck or car number, total gallons in this shipment, number of gallons of this material remaining in stock under seal (exclusive of amounts reported above), and company name.