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Standard Test Method for COATING AND STRIPPING OF BITUMEN-AGGREGATE MIXTURES¹

This standard is issued under the fixed designation D 1664; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

This method has been approved for use by agencies of the Department of Defense and for listing in the DoD Index of Specifications and Standards.

1. Scope

1.1 This method describes coating and static immersion procedures for determining the retention of a bituminous film on an aggregate surface in the presence of water. It is applicable to cutback, emulsified, and semisolid asphalts and to tars.

1.2 *This standard may involve hazardous materials, operations, and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of whoever uses this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Applicable Document

2.1 ASTM Standard:

E 11 Specification for Wire-Cloth Sieves for Testing Purposes²

3. Summary of Method

3.1 The selected and prepared aggregate is coated with the bitumen at a specified temperature appropriate to the grade of bitumen used. In the case of cutback asphalt and tar, the bitumen-coated aggregate is subjected to a curing period at 140°F (60°C). In the case of emulsified asphalt, the aggregate is coated with bitumen and subjected to a curing period at 275°F (135°C). After coating, in the case of semisolid asphalt and tar (Grades RT-10, RT-11, and RT-12), or after curing in the case of cutback asphalt, emulsified asphalt, and tar (Grades RT-1 through RT-9, RTCB-5 and RTCB-6), the coated aggregate is immersed in distilled water for 16 to 18 h. At the end of the soaking period, and with the bitumen-aggre-

gate mixture under water, the total area of the aggregate on which the bituminous film is retained is estimated visually as above or below 95 %.

NOTE 1—The 95 % level was selected because it has been determined by cooperative test, that only at this and at the 5 % retained coating levels, can a reasonable degree of the reproducibility be obtained when rating the same sample by visual estimation.

4. Significance and Use

4.1 This method should not be used as a measure of field performance because such correlation has not been established.

4.2 This procedure is suggested as a go-no-go test at the 95 % level because its precision is not satisfactory for application at lower levels. No attempt shall be made to evaluate the retention of a film below 95 %. This is a limitation of the method and does not intend to imply in any way that an aggregate-bitumen combination failing to retain a 95 % coating by this laboratory procedure will give unsatisfactory performance in the field.

NOTE 2—A stripping test employing a tracer salt method and a flame photometer technique, which provides for film evaluation below the 95 % level, has been published for information only in the 1963 Annual Report of Committee D-4.³ A statistical report on the work done to substantiate the method is available from ASTM Headquarters.⁴

¹ This method is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.22 on Effect of Water and Other Elements on Bituminous Coated Aggregates.

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² Annual Book of ASTM Standards, Vol 14.02.

³ Proceedings, Am. Soc. Testing Mats., Vol 64, 1964.

⁴ Available on loan from ASTM Headquarters, 1916 Race St., Philadelphia, Pa. 19103. Request Research Report No. RR: D04-127.