Designation: D2394 – 05 (Reapproved 2011)

Standard Test Methods for Simulated Service Testing of Wood and Wood-Base Finish Flooring[1]

This standard is issued under the fixed designation D2394; 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.

1. Scope

1.1 These test methods cover procedures for measuring the performance of finish flooring under the following service loadings and conditions:

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Loading Tests	
Concentrated Loading	7
Floor Surface Indentation from Small Area Loads	12
Falling-Ball Indentation	18
Rolling Load	23
Mechanical Tests	
Abrasion Resistance	28
Coefficient of Friction	33
Moisture Tests	
Surface Wetting	38

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1037 Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials

E72 Test Methods of Conducting Strength Tests of Panels for Building Construction

3. Significance and Use

3.1 The test methods presented herein are intended to provide both a factual and comparative means of appraising the suitability of finish flooring. The procedures developed simulate some conditions of use that may require either maintenance beyond that considered normal or replacement of the floor surface material.

3.2 It is important for some of the evaluations that the substrate to be used beneath the finish flooring be duplicated because the type and degree of support will have a direct influence on the value obtained from test. For example, in some present-day construction, low-density materials are used for sound-deadening immediately below the finish flooring. The way this substrate distributes loading and absorbs energy will have an influence on evaluations such as those in rolling and concentrated loads.

3.3 The test methods presented herein may be used to compare different finish floorings as to their resistance to severe and ordinary service loads and also may serve as the means to set specification limits. The properties obtained by these test methods are needed in addition to such basic material properties as stiffness, strength, hardness, and dimensional stability.

3.4 Not all test may be required for any specific investigation. There may be an interrelation between two tests, and when it has been demonstrated what the interrelation is, a complete evaluation will only be required as a final stage of a study. In each instance, therefore, it will be necessary to determine which evaluations should be made to fulfill the objectives.

4. Test Specimens

4.1 The number of specimens to be chosen for test and the method of their selection depend on the variability of the finish flooring material and on the purpose of the particular tests under consideration, so no general rule can be given to cover all instances. It is recommended that, whenever possible, sufficient replications be made to establish reliable mean values. Even for the most simple evaluation, a replication of three tests for each property is recommended.

5. Control of Moisture Content and Temperature

5.1 Wood and wood-base materials are hygroscopic. The moisture content at time of test will influence values obtained from tests. Therefore, material for test shall be conditioned to essentially constant weight at a condition of 65 ± 1 % relative humidity and a temperature of 68 ± 6°F (20 ± 3°C) (Note 1 and Note 2). If there is any departure from this recommended condition, it shall be so stated in the report. No tests shall be made on any material when it is not essentially stable in moisture content.

NOTE 1—In following the recommendation that the temperature be controlled to 68 ± 6°F (20 ± 3°C) it should be understood that it is desirable to maintain the temperature as nearly constant as possible at

[1] These test methods are under the jurisdiction of ASTM Committee D07 on Wood and are the direct responsibility of Subcommittee D07.01 on Fundamental Test Methods and Properties.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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