STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard METHODS OF TEST FOR TEXTILE FLOOR COVERINGS

AS 2111.16 DETERMINATION OF BOND STRENGTH BETWEEN BACKING COMPONENTS OF A TEXTILE FLOOR COVERING

1 SCOPE. This standard describes a method for determining the strength of the bond between the backing components of a textile floor covering which can be peeled apart.

2 APPLICATION. The method is applicable to tufted textile floor coverings which have primary and secondary backing materials forming a bonded composite substrate. It is not applicable to any textile floor covering with an integral non-textile backing.

3 DEFINITION. For the purpose of this standard, the following definition applies:

Bond strength—the mean force required to separate two backing components of a strip of textile floor covering as determined by the method described herein.

4 PRINCIPLE. A strip of the floor covering is manually separated at one end into two components. The component containing the wear surface is gripped in the moving jaws and the other component is gripped in the fixed jaws of a tensile testing machine of suitable capacity. The jaws are separated further and a record of the force required to separate the two components is obtained on a graph. The mean force is calculated from the five highest forces recorded.

5 APPARATUS.

5.1 Testing Machine. The testing machine shall meet the following requirements:

(a) It shall comply with the requirements for Grade C machines specified in AS 2193.*

(b) The capacity of the machine on the range selected shall be such that the value of the bond strength of the sample under test is not less than 10 percent of the capacity.

(c) The machine shall provide means of indicating the maximum and minimum load applied in separating the backing fabrics; the loads shall be indicated clearly and continuously on a chart, with the chart moving at the same speed as the moving jaws.

(d) The machine shall be capable of separating the backing fabrics at a constant rate of jaw separation of 100 ± 10 mm/min. The weighing mechanism shall allow little or no movement of the fixed jaws in the direction of the applied load.

(e) The jaws of the machine shall be wider than the test specimen and so constructed that they do not damage it. Suitable packing pieces or other embedding techniques may be used whenever necessary to prevent slipping of the test specimens in the jaws. The fixed and moving jaws shall be in the same plane and at right angles to the direction of traverse.

5.2 Conditioning Apparatus. Means of producing and maintaining the atmosphere of 20 ± 2°C and 65 ± 2 percent relative humidity as specified in AS 2001.1.1.†

6 SAMPLES AND TEST SPECIMENS.

6.1 Selection of Specimens. The samples and test specimens shall be selected in accordance with AS 2119.‡

6.2 Preparation of Specimens.

(a) Cut out five specimens parallel to the lengthwise direction, each measuring 300 mm in length and 50 mm in width. Repeat this procedure for five specimens from the widthwise direction.

(d) Where the samples have a woven secondary backing fabric, the thread direction of the secondary backing shall be followed if it is different from that of the primary structure.

7 TEST PROCEDURE. The test procedure shall be as follows:

(a) Condition the specimen in the standard atmosphere described in AS 2001.1.1 and test in the same atmosphere.

(b) Adjust the machine to operate in the manner prescribed in Clause 5, and set the jaws so that at the commencement of each test the distance between the jaws is 25 mm.

(c) Manually separate the components of the specimen in the longitudinal direction for a distance of 75 mm.

(d) Secure the component containing the wear surface centrally in the upper set of jaws of the

*AS 2193, Methods for the Calibration and Grading of Force-measuring Systems of Testing Machines.
†AS 2001.1.1, Methods of Test for Textiles—Conditioning Procedures (in course of preparation as a revision of AS 1090).
‡AS 2119, Method for Sampling and Cutting Specimens of Textile Floor Coverings for Testing.

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