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BSI

British Standard Specification for

Assessment and labelling of textile floor coverings tested to BS 4790

Evaluation et étiquetage des revêtements de sol textiles essayés conformément à la norme BS 4790 — Spécifications

Beurteilung und Kennzeichnung nach BS 4790 geprüfter textiler Bodenbeläge

Foreword

This British Standard has been prepared under the direction of the Textiles and Clothing Standards Committee. It is a revision of BS 5287 : 1976 which is withdrawn. Assessment of the behaviour of textile floor coverings tested in accordance with BS 4790 is valuable in determining the ease with which the textile floor covering would ignite under practical conditions, e.g. when a burning cigarette, a hot coal, or a similar source of ignition is dropped on it.

It is emphasized that the method of test described in BS 4790 is not intended to give an overall indication of the potential fire hazard presented by a textile floor covering under actual conditions of use. Other methods of test, such as the radiant panel test* described in ASTM-E648 : 1978†, may be used to assess the performance of textile floor coverings in a fire situation. This test is intended to indicate the spread of flame under conditions of controlled heat flux and may lead to a further British Standard.

In this revision two forms of giving information on the performance of textile floor coverings when tested according to BS 4790 are specified. In the first a pass criterion is specified for textile floor coverings for domestic use. In the second three more detailed categories of performance for contract use are specified on the basis of the radius of the effects of ignition. Both forms of providing this information take account of the specimen mounting method used in the test. Information relating to the practical meaning of 'radius of ignition' is given in appendix A.

As a result of these considerations, very careful attention should be given to the statement made on the textile floor covering label and in sales literature in regard to flammability. It should be simple, unambiguous and authoritative.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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* At present the subject of an international interlaboratory trial in ISO/TC38, as Draft Proposal 9239.
† Available from the Library, BSI, Linford Wood, Milton Keynes MK14 6LE.

1 Scope

This British Standard specifies the form of assessment of the behaviour of textile floor coverings when subjected to the small source of ignition test described in BS 4790; and gives requirements for conveying the information obtained to domestic and contract users. It is applicable to all types of textile floor coverings used in the horizontal position.

NOTE 1. The test method described in BS 4790 is used in this standard to provide some assessment of the potential hazard of textile floor coverings being ignited from a small ignition source such as a lighted match, a burning cigarette or a glowing coal. In no circumstances should the test results thus obtained be used to assess the contribution the textile floor coverings will make to an established fire.

NOTE 2. The titles of the publications referred to in this standard are listed on page 3.

2 Testing and labelling

The textile floor coverings shall be tested in accordance with BS 4790 using the specimen mounting method 1, 2 or 3.

The mounting method selected shall be the one which most closely resembles the method to be used for laying the textile floor covering.

According to its observed behaviour under test, a specimen shall be considered satisfactory if the radius of the affected area is not greater than 75 mm. The minimum information to be given on the manufacturer's label for domestic users shall be:

BS 5287 flammability (effects of a small ignition source) : loose-laid : fully adhered : loose-laid with underlay PASS

For contract use the minimum information describing the observed behaviour under test shall be as given in table 1.

NOTE. Other tests, such as the radiant panel test referred to in the foreword, may be used to provide additional information on the label.

If both the area of the exposed use-surface and the area of the under-surface are measured in the test the greater of the two measurements shall be used to record the observed behaviour under test.

Table 1. Test results and labelling for contract use

Radius of affected area*	Information to be given on the label
mm Up to 35	When tested according to the appropriate method* of BS 4790 this floor covering has a low radius (up to 35 mm) of effects of ignition
Over 35 up to 75	When tested according to the appropriate method* of BS 4790 this floor covering has a medium radius (over 35 mm up to 75 mm) of effects of ignition
Over 75	When tested according to the appropriate method* of BS 4790 this floor covering has a high radius (over 75 mm) of effects of ignition

*Specimen mounting method 1, 2 or 3 of BS 4790, that is:
method 1 : loose-laid;
method 2 : fully-adhered;
method 3 : loose-laid with underlay.

Appendix A. Meaning of 'radius of effects of ignition'

The principle of the method of BS 4790 is that a stainless steel nut heated to 900 °C is placed on the use-surface of the material to be tested and the greatest radius of the effects of ignition from the point of application of the nut is measured both on the use-surface and on the under-surface.

A result up to and including 35 mm, which can be described as 'low radius of effects of ignition', indicates that if the material is ignited from a small source such as a lighted match or a glowing coal, it will not spread flame under normal conditions in the absence of supporting thermal radiation.

A result greater than 35 mm and up to 75 mm, which can be described as 'medium radius of effects of ignition', indicates that if the material is ignited it will spread flame to a limited extent only.

A result of over 75 mm, which can be described as 'high radius of effects of ignition', indicates that the material will ignite and may continue to spread flame.

Publications referred to

BS 4790	Method for determination of the effects of a small source of ignition on textile floor coverings (hot metal nut method)
*†ASTM-E648	Standard test method for critical radiant flux of floor covering systems using a radiant heat energy source
*ISO/DP 9239	Critical radiant flux of textile floor coverings using a radiant heat energy source

*Referred to in the foreword only.
†Available from the Library, BSI, Linford Wood, Milton Keynes MK14 6LE.