

Methods of test for

Finishes for wooden furniture —

**Part 2: Assessment of surface resistance
to wet heat**

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Committees responsible for this British Standard

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- Association of County Councils
- British Plastics Federation
- British Woodworking Federation
- Department of Education and Science
- Department of the Environment (Property Services Agency)
- Furniture Industry Research Association
- Paint Research Association
- Paintmakers' Association of Great Britain Ltd.

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Foreword

This Part of this British Standard has been prepared under the direction of the Pigments, Paints and Varnishes Standards Committee as one of a series of methods for testing and assessing the performance of finishes for wooden furniture. It supersedes BS 3962-2:1980 which is withdrawn.

BS 3962-2 was first published in 1968, in the series of methods for testing the performance of clear finishes for wooden furniture. It was revised in 1971 to include automatic procedures for carrying out the test which had been devised since the first publication and to adopt the method of rating more usual in the furniture industry, i.e. to give the higher rating to the most resistant material rather than rating according to damage. At the same time, it was decided to substitute oil for water as the heating liquid and to make slight changes in the procedure for assessing whether or not the material was acceptable.

An increase in the use of pigmented finishes for furniture made it desirable in 1980 to broaden the scope of the test method to include such finishes. In addition the opportunity was taken to amend the rating code to align with international practice. (This had the effect of increasing each numerical rating by 1 unit, from that given in the 1971 edition.)

The use of an oil-filled cup in the test procedure has caused the occurrence of occasional fires. These fires and the potential hazard for operators of burns from oil spillages have led to the present revision.

As the result of research by the Furniture Industry Research Association, an electrically-heated stainless steel block was developed which is considerably safer to use and, as a heat source, has been shown to give results comparable to those achieved with the previous method. Thus, in this revision, the use of a cup filled with hot oil is replaced by the electrically-heated block.

It is important to note that whereas in previous editions of BS 3962-2, the “test temperature” was that of the liquid in the cup, in this edition the test temperature is now that of the annular ring on the base of the electrically-heated block as measured by means of a thermocouple. As a consequence, it is essential that those product specifications or other documents demanding that the method of test given in this standard is carried out should clearly state that the test temperature is to be the temperature of the annular ring. Moreover, it should be noted that in order to permit comparison between the ratings obtained using the method given in recent editions of this standard and those obtained using that given in this new edition, the temperature of the annular ring should be 5 °C below that which was previously specified for the liquid in the cup, within the range 50 °C to 85 °C. Thus, the previously recommended test temperatures of 55 °C, 70 °C and 85 °C for the liquid in the test cup are now superseded by the recommendation that test temperatures of 50 °C, 65 °C and 80 °C, measured at the annular ring, should be used.

A description of the method using the oil-filled cup is given in Appendix A as it is appreciated that this form of the apparatus will continue to be used pending replacement by the less hazardous electrically-heated block. Nevertheless, it is the intention that this method, because of the hazards associated with the oil-filled cup, should be withdrawn at the next review of this Part of this standard.

Advantage has also been taken in the present revision to amend the description of certain ratings in order to cover experience of the test with finishes on particle board substrates.

The method described in this standard is designed to test finishes for wooden furniture on which containers of hot beverages may be placed with possible subsequent spillage. It provides a method for comparing different finishes, but can also be used to determine whether or not a sample complies with the requirements detailed in a product specification or other document.

The degrees of marking produced by drinking vessels, such as cups and beakers, vary considerably and it has, therefore, been necessary to devise a reproducible heat source for testing purposes. It is emphasized that the marking produced by this heat source may be more severe than that produced by cups and beakers filled with beverages at the same temperature. This possibility should be borne in mind by the purchaser of the wood finish if he decides to specify a minimum acceptable performance.

In view of the diversity of woods and finishing systems used in the furniture industry, it is impracticable to specify a test substrate and the method of preparation of the finishing system. These should be the subject of agreement between the purchaser and the supplier. This method seeks only to stipulate a procedure for testing a wooden panel coated with the appropriate finishing system.

Although the rating system used has been made as objective as possible, it still contains a large subjective component. Consequently, to cater for the inherent variability present when subjective decisions have to be made, it is recommended that not fewer than five observers should examine and assess the tested surface. Subject to agreement between the purchaser and the supplier, fewer observers may be used provided that these observers are experienced in the type of assessment. The rating in each test is the *median* value of the assessment of the observers, the assessments being determined by the procedure described in clause 7. A series of such tests is usually carried out at several different temperatures, and recommendations are made regarding suitable temperatures, although these may be varied, if necessary, by agreement between the purchaser and the supplier.

No attempt has been made to assess the ease with which the finish may be restored.

This Part of this British Standard describes a method of test only, to which reference may be made in a specification in which test conditions and performance requirements have been specified. A statement that a wood finishing system complies with BS 3962 should not be used, as it is meaningless.

Other Parts of this standard are:

- *Part 1: Assessment of low angle glare by measurement of specular gloss at 85°;*
- *Part 3: Assessment of surface resistance to dry heat;*
- *Part 4: Assessment of surface resistance to cold liquids;*
- *Part 5: Assessment of surface resistance to cold oils and fats;*
- *Part 6: Assessment of resistance to mechanical damage.*

It has been assumed in the drafting of this British Standard that it will be used and applied by those who are appropriately qualified and experienced and for whose guidance it has been prepared.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.