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British Standards Methods of test for

# Finishes for wooden furniture

## Part 3. Assessment of surface resistance to dry heat

Méthodes d'essai des finitions de meubles en bois
Partie 3. Evaluation de la tenue de la surface à la chaleur sèche

Prüfvorgang für die Oberflächenbehandlung von Holzmöbeln
Teil 3. Einschätzung des Oberflächenwiderstands gegen trockene Wärme

British Standards Institution

## Contents



## 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 It supersedes BS 3962 : Part 3 : 1980 which is withdrawn.

BS 3962 : Part 3 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 : Part 3, 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 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 10 °C below that which was previously specified for the liquid in the cup, within the range 90 °C to 160 °C. Thus, the previously recommended test temperatures of 100 °C, 120 °C, 140 °C and 160 °C for the liquid in the test cup are now superseded by the recommendation that test temperatures of 90 °C, 110 °C, 130 °C and 150 °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 hot meals are prepared or served. 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 foodware, such as dishes and plates, 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 foodware 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