BRITISH STANDARD

BS EN
1184 : 1997

Materials and articles in contact with foodstuffs — Test methods for translucency of ceramic articles

The European Standard EN 1184 : 1997 has the status of a British Standard

ICS 67.250

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee CW/29, Tableware, upon which the following bodies were represented:

Association of Consulting Scientists
Association of Metropolitan Authorities
Association of Public Analysts
British Ceramic Confederation
British Ceramic Gift and Tableware Manufacturers' Association
British Ceramic Research Ltd.
British Glass Manufacturers' Confederation
British Hardware and Housewares Manufacturers' Association
British Importers' Association
British Retail Consortium
CESA – The Association of Catering Equipment Manufacturers and Importers
Co-operative Union
Consumer Policy Committee of BSI
Department of Trade and Industry, Consumer Safety Unit
Stoneware Potteries Association
Vitreous Enamellers' Association

This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Board, was published under the authority of the Standards Board and comes into effect on 15 September 1997

Amendments issued since publication

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The following BSI references relate to the work on this standard:
Committee reference CW/29
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Contents

National foreword

This British Standard has been prepared by Technical Committee CW/29 and is the English language version of EN 1184 : 1997 *Materials and articles in contact with foodstuffs —Test methods for translucency of ceramic articles*, published by the European Committee for Standardization (CEN).

It was assumed during the preparation of this standard that the execution of its provisions would be entrusted to those who were appropriately qualified and experienced.

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

Summary of pages

This document comprises a front cover, and inside front cover, pages i and ii, the EN title page, pages 2 to 6, an inside back cover and a back cover.

EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 1184

May 1997

ICS 67.250

Descriptors: Kitchen utensils, tableware, ceramics, porcelain, food-container contact, tests, determination, transparency

English version

Materials and articles in contact with foodstuffs — Test methods for translucency of ceramic articles

Matériaux et objets en contact avec les denrées alimentaires — Méthodes d'essai visant à déterminer la translucidité des objets en céramiques

Werkstoffe und Gegenstände in Kontakt mit Lebensmitteln — Prüfverfahren für die Transparenz von kermischen Gegenständen

This European Standard was approved by CEN on 1997-02-14. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Ref. No. EN 1184 : 1997 E

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 194, Utensils in contact with food, the secretariat of which is held by BSI.

Further European Standards are being prepared with the following titles:

EN 1183 *Materials and articles in contact with foodstuffs — Test methods for thermal shock and thermal shock endurance*

EN 1217 *Materials and articles in contact with foodstuffs — Test method for water absorption of ceramic articles*

A further standard is proposed with the following title:

Materials and articles in contact with foodstuffs — Test method for crazing resistance of ceramic articles

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 1997, and conflicting national standards shall be withdrawn at the latest by September 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Contents

Introduction

This European Standard specifies two test methods for the determination of the translucency of ceramic articles. Translucency is the ability to transmit light, and is an important aesthetic property of china tableware. Translucency is one of the properties which is used to distinguish china tableware from other types of ceramic tableware.

Either test method is applicable but test method A is based on European Community Regulation No 679/72 'Customs classification of products to be allied to porcelain: 'Vitreous china' or 'Semivitreous china' type', and is for use, for such classification purposes.

Most commercial ceramic tableware articles lie within the thickness range specified for test method A.

1 Scope

This European Standard specifies test methods for the determination of the translucency of ceramic articles.

Two test methods are described:

– Test method A, a qualitative method for estimating translucency, applicable to ceramic articles within a specified thickness range.

– Test method B, a quantitative method for the determination of body translucency requiring test specimens to be cut from ceramic articles.

2 Definitions

For the purposes of this Standard, the following definitions apply:

2.1 translucency

Ability to transmit incident light.

NOTE. Translucency is dependent strongly upon the thickness of the sample.

2.2 body

Ceramic material shaped to constitute the ware, more or less vitrified, which is generally coated with glaze.

3 Test method A

3.1 Principle

The visibility of the outline of an opaque object through a 2 mm to 4 mm thick test specimen is examined under defined lighting and observation conditions.

3.2 Apparatus and material

3.2.1 *Light source box* with a square cross section as shown schematically in figure 1, painted matt white inside with a lamp placed at one end, radiating a luminous intensity of 4000 lx to 5000 lx. A circular hole is cut at the opposite end to the lamp to allow the outline of an opaque object to be seen through the test specimen.

3.2.2 *Calipers, or micrometer*, capable of measuring the thickness of the test specimen.

3.2.3 *Opaque object* sticking to the test specimen e.g. piece of plasticine.

3.3 Test specimen

The thickness of the test specimen in the viewing region shall be not less than 2 mm and not more than 4 mm.

NOTE. The test specimen may be a plate or a large item of holloware with a flat base which can be placed over the viewing aperture.

3.4 Procedure

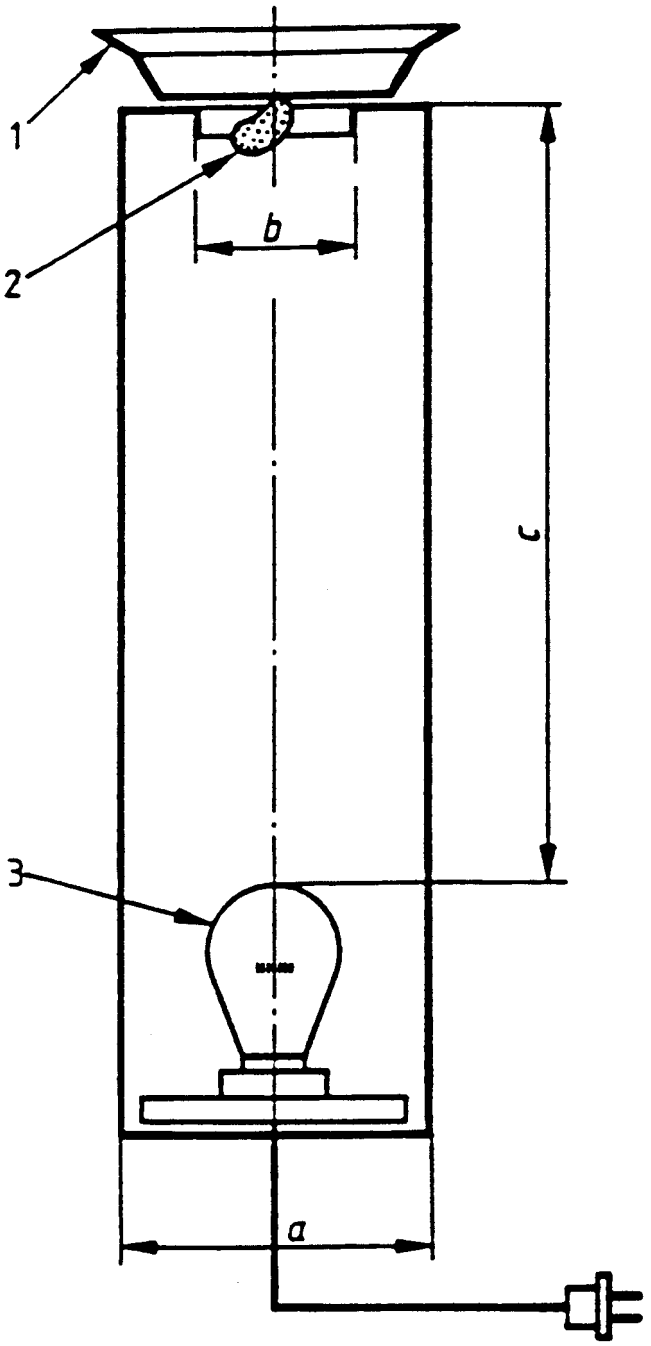
Fix the opaque object about 1 cm^2 in area to the back of the test specimen in the viewing region (see 3.3) and position the test specimen over the viewing aperture of the light source box (**3.2.1**).

Record whether the outline of the opaque object is visible.

3.5 Expression of result

If the outline of the opaque object is visible, the ceramic article is reported to be translucent.

If the outline of the opaque object cannot be observed the ceramic article is reported to be not translucent.



Dimensions in millimetres

1 - Test specimen

2 - Opaque object

3 - Lamp

a = Approximately 200 mm × 200 mm

b = Approximately 100 mm diameter

c = 500 mm ± 5 mm

Figure 1. Light source box (schematic diagram)

4 Test method B

4.1 Principle

The translucency of a ceramic article is assessed as the ratio of the intensity of light transmitted through a test specimen to the intensity of light incident upon it, expressed as a percentage for a test specimen thickness of 2 mm.

4.2 Apparatus

4.2.1 *Photometer*, having a light source capable of emitting white light of colour temperature *approximately 3400 K.*

NOTE. The photometer should provide incident light in the form of a parallel beam normal to the surface of the test specimen and all transmitted light should be collected; the use of an instrument incorporating an integrating sphere is recommended as a means of achieving the latter.

4.2.2 *Uniform reference samples* of known translucency in the range 0 % to 10 % for the calibration of the photometer.

NOTE. These may be calibrated diffusing standards, or in the absence of these, neutral density filters.

4.2.3 *Precision surface grinding equipment.*

4.2.4 *Micrometer.*

4.3 Preparation of test specimen

Cut a disc corresponding in size to the sample holder of the photometer from a ceramic article. Grind away the glaze on each surface to provide a test specimen with parallel unglazed faces 2,00 mm $\pm$ 0,01 mm thick.

4.4 Procedure

Calibrate the photometer (**4.2.1**) using the uniform reference samples (**4.2.2**).

Determine the transmission of light of the test specimen.

4.5 Expression of result

Express the translucency of the test specimen as the percentage of light transmitted through a thickness of 2 mm.

5 Test report

The test report shall include the following details:

a) a reference to this European Standard;

b) an identification of the article tested;

c) the test method used, i.e. A or B;

d) translucency:

– for method A, whether the article is considered translucent or not;

– for method B, the percentage of light transmitted through a test specimen at 2 mm thickness.

Annex A (informative)

Bibliography

[1] Regulation (CEE) No 679/72 of the Commission of 29 March 1972 concerning 'Customs classification of products to be allied to porcelain: 'Vitreous china'or 'Semivitreous china' type'

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