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Standard**

**ISO 5644**

**Porcelain Tableware —  
Specification and test method**

*Vaisselle en porcelaine — Spécification et méthode d'essai*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 166, *Ceramic ware, glassware and glass ceramic ware in contact with food*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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# Porcelain Tableware — Specification and test method

## 1 Scope

This document gives specifications, test methods, sampling, marking and labelling of porcelain tableware that is used for the preparation and serving of foods.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6486-1, *Ceramic ware, glass ceramic ware and glass dinnerware in contact with food — Release of lead and cadmium — Part 1: Test method*

ISO 6486-2, *Ceramic ware, glass-ceramic ware and glass dinnerware in contact with food — Release of lead and cadmium — Part 2: Permissible limits*

ASTM C368-88, *Standard test method for impact resistance of ceramic tableware*

EN 1217:1998, *Materials and articles in contact with foodstuff. Test methods for water absorption of ceramic articles*

EN 1184:1997, *Materials and articles in contact with foodstuffs- Test methods for translucency of ceramic articles*

EN 1183:1997, *Materials and articles in contact with foodstuffs. Test methods for thermal shock and thermal shock endurance*

BS 8654, *Domestic and hospitality use ceramic tableware articles intended for contact with foodstuffs – Specification*

EN 15284, *Materials and articles in contact with food stuffs. Test method for the resistance to microwave heating of ceramic, glass, glass-ceramic or plastic cookware*

EN 13834, *Cookware. Ovenware for use in traditional domestic ovens*

EN 12875-2, *Mechanical dishwashing resistance of domestic utensils. Inspection of nonmetallic articles*

EN 12875-4, *Mechanical dishwashing resistance of utensils. Rapid test for domestic ceramic articles*

EN 12980, *Materials and articles in contact with foodstuffs. Non-metallic articles for catering and industrial use. Method of test for the determination of impact resistance*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **ceramic**

inorganic non-metallic material made by firing a mixture of raw materials at high temperature

Note 1 to entry: The firing temperature is high enough to give the necessary strength to the article, which is already shaped, but lower than the temperature which is necessary to achieve complete fusion of the mixture<sup>[8]</sup>.

### 3.2

#### **glaze**

substance resulting from the melting or sintering of inorganic constituents and designed to form a surface layer which is fused, in one or more coats, during the firing process

Note 1 to entry: Glazes can be opaque or transparent<sup>[8]</sup>.

### 3.3

#### **porcelain**

glazed ceramic material, vitrified, impervious, white (or artificially coloured), translucent and resonant

Note 1 to entry: It is generally made from kaolin (or other china clays), silica, feldspar or feldspathic fluxes and sometimes calcium carbonate or alumina. When determined in accordance with EN 1217:1998, Test Method A, the water absorption of the body is less than 0,5 %. Porcelain is generally fired in a kiln at temperatures of between 1,200 °C and 1,400 °C (2,200 °F and 2,600 °F). The fired body presents the simultaneous coexistence of a glassy phase and a mullitic crystalline phase according respectively to the proportions 60 %-80 % and 40 %-20 %<sup>[8]</sup>.

#### 3.3.1

##### **hard (hard paste) porcelain**

porcelain made from a body composed of kaolin, quartz, feldspar and sometimes calcium carbonate

Note 1 to entry: After an initial low temperature firing, it is normally covered with a colourless transparent glaze fired at the same time as the body and thus fused together with it. The second firing temperature is conventionally between 1 360 °C and 1 400 °C. When determined in accordance with EN 1217:1998, Test Method A, the water absorption of the body is less than 0,5 %<sup>[9]</sup>.

#### 3.3.2

##### **soft (soft paste) porcelain**

porcelain usually containing less alumina but more silica and fluxes than hard paste porcelain

Note 1 to entry: After an initial high temperature firing to produce a vitreous biscuit piece, it is normally covered with a colourless transparent glaze and then fired at a lower temperature to mature the glaze. The first firing temperature is generally above 1 220 °C. When determined in accordance with EN 1217:1998, Test Method A, the water absorption of the body is less than 0,5 %<sup>[9]</sup>.

#### 3.3.2.1

##### **china**

glazed ceramic material, vitrified, impervious, white (or artificially coloured), translucent and resonant

Note 1 to entry: Type of soft paste porcelain generally made from kaolin (or other china clays), silica, feldspar or feldspathic fluxes and sometimes calcium carbonate or alumina. When determined in accordance with EN 1217:1998, Test Method A, the water absorption of the body is less than 0,5 %<sup>[8]</sup>.

#### 3.3.2.2

##### **bone china**

type of soft paste porcelain containing at least 35 % by mass of the fired body, of tricalcium orthophosphate, which can be introduced in the form of bone ash. When determined in accordance with EN 1217:1998, Test Method A, the water absorption of the body is less than 0,5 %<sup>[8]</sup>

#### 3.3.2.3

##### **vitreous china**

glazed ceramic bodies vitrified, impervious, white (or artificially coloured), slightly translucent

Note 1 to entry: It is made from clays, silica, feldspar and sometimes alumina. When determined in accordance with EN 1217:1998, Test Method A, the water absorption of the body is less than 0,5 %<sup>[8]</sup>.