

Mechanical dishwashing resistance of utensils —

Part 2: Inspection of non-metallic articles

The European Standard EN 12875-2:2001 has the status of a
British Standard

ICS 97.040.60

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee CW/29, Tableware, which has the responsibility to:

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Mechanical dishwashing resistance of utensils - Part 2: Inspection of non-metallic articles

Résistance mécanique au lave-vaisselle des ustensiles -
Partie 2: Inspection des articles non-métalliques

Spülmaschinenfestigkeit von Gegenständen - Teil 2:
Inspektion von nichtmetallischen Gegenständen

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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.

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of an identical text or by endorsement, at the latest by May 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

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

Introduction

This European Standard specifies the conditions for visual inspection of non-metallic tableware in connection with the standardized dishwashing resistance tests including the expression of results. Other parts of this standard already published or in preparation are:

Part 1: Reference test method

Part 3: Inspection of metallic articles

Part 4: Rapid test for domestic ceramic articles

Part 5: Rapid test for ceramic catering articles

The marking procedure in this draft is only for non-metallic tableware.

NOTE The marking based on these test results is primarily intended as consumer information. In the opinion of consumers other features of equivalent importance exist which are not always compatible with high dishwashing resistance requirement. Therefore it does not seem feasible to fix minimum requirements for the dishwashing resistance of non-metallic tableware.

1 Scope

This European Standard specifies the conditions for the visual inspection of non-metallic tableware in contact with foodstuffs after testing its dishwashing resistance according to the procedures described in the relevant parts of the EN 12875 series for articles for domestic, industrial and catering use.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ENV 12875-1:1998, *Mechanical dishwashing resistance of domestic utensils - Part 1: Reference test method.*

3 Principle

The surface of at least three samples which have been tested is visually inspected under defined conditions in comparison with an unused sample by two inspectors. Depending on the type of article, the differences in the surface of the tested samples from the surface of the unused sample are recorded.

4 Inspectors

At least two inspectors are required who are preferably familiar with the inspection procedure described in this document. Each inspector shall be able to see the surface of the specimens clearly with the naked eye (or with a

habitual vision aid) and shall have normal colour vision.

NOTE Suitable methods for assessing colour vision are the H-R-R-Pseudoisochromatic Plates or the Ishihara Test for Colour Blindness [1].

5 Apparatus

5.1 Linen cloth for wiping decorated ware

5.2 Inspection site

An inspection site, which:

- is protected from external light, and illuminated vertically by a diffuse daylight (3500 to 4500) K lamp yielding (1000 to 1500) lx near the specimens;
- shows grey colour and a dull surface finish on all surfaces exposed to the artificial light;
- has sufficient table area to accommodate all of the specimens of one type simultaneously.

6 Samples

For each article at least three unused test specimens of identical shape, size and surface finish shall be tested, and a fourth test specimen shall be retained for reference.

7 Procedure

7.1 General

Before inspection, easily removable deposits shall be eliminated by wiping with a cloth and/or a one-minute dip in a 10 % (m/m) aqueous solution of citric acid at about 50 °C followed by rinsing and drying.

7.2 Inspection

Inspection is carried out from a distance of (30 ± 10) cm, while the viewing angle is changed.

Each inspector independently records visible changes in the characteristics listed in Table 1, using the classification numbers listed in Table 2.

For each inspector, an average is calculated from the figures given in the three samples for each of the criteria listed in Table 1. The average values are rounded to one decimal.

For samples consisting of more than one material, e.g. tea pots with plastic handles, report the result separately for each material.

The maximum number of test cycles according to ENV 12875-1, or other test method, for which none of the criteria from Table 1 receives an average value above 1,0 shall be the test result.

If one of the inspection criteria from Table 1 receives an average value above 1,0 then the test for this article is finished

Table 1 — Inspection criteria

articles with or without decoration	colour ¹⁾	gloss	clouding	resistant deposits and iridescent layers ²⁾	other aspects
Ceramic tableware	+	+		+	+ ^{3) 4) 5)}
Glass, glass ceramic ware	+	+	+ ⁶⁾	+	+ ^{4) 5)}
Vitreous enamelled tableware	+	+		+	+ ^{3) 4) 5)}
Plastics articles	+	+	+ ⁶⁾	+	+ ^{7) 3)}

(+) = to be inspected

- 1) If several colours are present on one article to be inspected, the colour with the greatest change shall be chosen.
- 2) For the elimination of easily removable deposits see 7.1.
- 3) e.g. crazing.
- 4) The adherence of decorations shall be tested by repeated wiping with a moist linen cloth under slight pressure.
- 5) Abrasion which is caused by friction during the dishwasher treatment shall be disregarded.
- 6) Transparent articles only.
- 7) Swelling, deformation, cracking, or delamination.

Table 2 — Evaluation of inspection criteria

Classification	Rating
0	no visible change
1	first discernible change
2	clearly visible change

8 Test report

The test report shall contain:

- a) a reference to this European Standard;
- b) the identification of the articles tested (description), for example type, origin and designation of the sample and manufacturer or supplier;
- c) the place and date of sampling;
- d) the date of receipt and date of testing the sample;
- e) the test method applied, e.g. ENV 12875-1;
- f) the number of inspectors and their names;
- g) the maximum number of test cycles after which the average value of 1,0 for each inspector was not exceeded;
- h) the category of article according to Table 1 and average of figures of all inspectors according to Table 2.

NOTE Any unusual features noted during the inspection should also be reported.

9 Marking

The symbol shown in Figure 1 may be used for marking articles tested in accordance with one of the parts of the EN 12875 series and evaluated according to clause 7 (Example shown for 500 cycles).

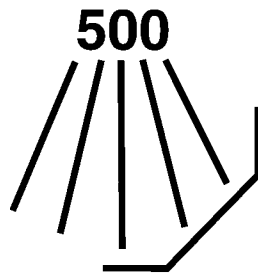


Figure 1 — Symbol to be used for marking containing the number of test cycles (500 in this example) corresponding to the test result

NOTE The article and/or packaging can be marked by the symbol using any conventional method.

When an article is made from different materials the symbol shall show the number of cycles for the material with the lowest test result.

Bibliography

- [1] ISHIHARA, S.: Tests for colour blindness, Kanahara Shuppau Co. Ltd. Toyko-Kyoto 1971

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