

INTERNATIONAL STANDARD

AMENDMENT 2

Electric cooking ranges, hobs, ovens and grills for household use – Methods for measuring performance

With amendments
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INTERNATIONAL STANDARD

AMENDMENT 2

Electric cooking ranges, hobs, ovens and grills for household use – Methods for measuring performance

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

FOREWORD

This amendment has been prepared by subcommittee 59K: Ovens and microwave ovens, cooking ranges and similar appliances, of IEC technical committee 59: Performance of household electrical appliances.

The text of this amendment is based on the following documents:

FDIS	Report on voting
59K/161/FDIS	59K/163/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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2 Normative references

Add, to the existing list, the title of the following standard:

IEC 62301:2005, *Household electrical appliances – Measurement of standby power*

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5 General conditions for the measurements

5.1 Test room

Replace the existing second paragraph, added in Amendment 1, by the following:

For tests 8.1, 8.3 and 8.4.2, $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ shall be maintained during the complete test.

5.3 Instrumentation

Add the following 8th dash at the end of the existing list added in Amendment 1:

- the scale for weighing the ingredients shall be accurate to $\pm 0,1$ g.

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6 Dimensions and mass

6.3 Internal dimensions of ovens

Replace the existing title and text of this subclause by the following:

6.3 Usable internal dimensions and usable volume of ovens

Removable items specified in the user instructions shall be removed before a measurement is carried out.

The measurement of the usable oven volume is to be carried out at ambient temperature.

The height, width and depth of the usable volume in the cavity shall be measured in accordance with 6.3.1 to 6.3.3. The measurement procedure is also shown in Figure 4a.

For verification purposes a gauge, as shown in Figure 4b, shall be used to determine all of the three dimensions. The gauge shall be used without appreciable force.

Dimensions are stated in millimetres.

6.3.1 Usable height

The usable height is the maximum length of a cylinder with a diameter of 200 mm reaching vertically from the centre of the cavity floor to the lowest point on the ceiling. The lowest point of the ceiling can be constituted by a lamp, a heating element or similar object in the area of the cylinder.

In the event that either the width or the depth of the cavity is less than 250 mm, the diameter of the cylinder to be measured shall be reduced to 120 mm.

NOTE The centre of the cavity bottom is defined by the middle of the usable depth and the middle of the usable width.

6.3.2 Usable width

The usable width is the maximum length of a cylinder with a diameter of 200 mm reaching horizontally from the left-hand side wall to the right-hand side wall of the cavity.

In the event that either the height or the depth of the cavity is less than 250 mm, the diameter of the cylinder to be measured shall be reduced to 120 mm.

NOTE The centre of the side wall of the cavity is defined by the middle of the usable depth and the middle of the usable height.

6.3.3 Usable depth

The usable depth is the maximum length of a cylinder with a diameter of 200 mm reaching horizontally from the centre of the rear wall to the inner face of the closed door.

In the event that either the width or the height of the cavity is less than 250 mm, the diameter of the cylinder to be measured shall be reduced to 120 mm.

For measuring the usable depth, the gauge is placed on a support in such a way that the axis lies horizontally in the centre of the cavity, the axis being extended slightly over the expected usable depth. The door is closed carefully so that the gauge is compressed to give the usable depth.

NOTE The centre of the rear wall of the cavity is defined by the middle of the usable height and the middle of the usable width.

6.3.4 Usable volume

The usable volume is calculated from these three dimensions and is stated in litres rounded to the next full litre.

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Add the following new subclause 6.4:

6.4 Overall internal dimensions and overall volume of ovens

Where the surfaces forming the boundaries of the cavity incorporate protrusions or depressions, the planes used for measurement shall be those comprising the largest percentages of the total areas of the surfaces. Holes in surfaces shall be disregarded when calculating areas for this determination.

The following volumes or spaces shall be disregarded:

- those occupied by removable items specified by the manufacturer as not essential for the operation of the appliance, such as shelves, racks or temperature probes;
- those occupied by heating elements;
- those occupied by minor irregularities in the cooking compartment walls, including covers over temperature sensors and lamps;
- those occupied by the convection baffle;
- corner radii smaller than 50 mm at the intersections of the interior surfaces of the cooking cavity.

Dimensions are stated in millimetres.

NOTE The overall dimensions of warming drawers may be measured using the same principles.

6.4.1 Overall height (H)

Overall height (H) is the maximum vertical distance in mm between the plane of the cooking cavity bottom and the plane of the cavity ceiling.

6.4.2 Overall width (W)

Overall width (W) is the maximum horizontal distance in mm between the planes of the cavity side walls.

6.4.3 Overall depth (D)

Overall depth (D) is the maximum horizontal distance in mm from the plane of the inside surface of the door when closed to the plane of the rear cavity wall.

6.4.4 Overall volume of rectangular cavities

The overall volume is the total internal volume of the cavity in which cooking takes place, expressed as the product of H , W and D determined as above, divided by 10^6 and rounded to the nearest litre.

6.4.5 Overall volume of non-rectangular cavities

Non-rectangular cavities shall have the volume of any non-conforming section such as a curved door or cavity wall determined by direct measurement and the application of conventional geometrical calculations. The remainder of the cavity shall be treated as a rectangular cavity and the individual volumes added together. The volume is expressed to the nearest litre.

Renumber existing subclauses 6.4 to 6.10 as 6.5 to 6.11, respectively.

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8.4.2 Small cakes

Replace the entire existing subclause 8.4.2 by the following new subclause:

8.4.2 Small cakes

This test is intended to assess the vertical and horizontal heat distribution, especially for a mixture that rises during cooking.

NOTE The test is carried out using the general conditions of measurements as stated in Clause 5.

8.4.2.1 Ingredients

The quantities of ingredients for 30 to 40 small cakes are indicated in Table 3. For a reproducible result always prepare the same amount and discard any surplus mixture.

Table 3 – Ingredients

Ingredients	Quantities g	Remarks
Butter, with a fat content of 83 % $\pm$ 2 %	340 $\pm$ 0,5	Unsalted butter should be used. If unsalted butter is not available the salt content of butter should be subtracted from the salt added to the mixture.
White sugar, fine (grain size 0,10 mm – 0,35 mm, d95/d05)	340 $\pm$ 0,5	d95/d05: 90 % of the sugar crystals shall have a grain size of 0,10 mm – 0,35 mm
Eggs	300 $\pm$ 1	Middle sized hen eggs (approximately 55 g $\pm$ 5 g) are beaten and sieved until homogeneous, then weighed. If frozen egg mixture is used, follow the instructions of Clause C.1.
Wheat flour without raising agent, unbleached Mineral content: maximum 0,5 % (dry substance)	450 $\pm$ 1	Gluten: at least 24,0 %
Baking powder	15 $\pm$ 0,5	Phosphate baking powder (double acting) shall be used (not baking soda).
Salt	6 $\pm$ 0,1	
NOTE 1 For reproducible results ingredients as defined in Annex C shall be used.		
NOTE 2 The eggs are sieved to remove any chalazae.		
NOTE 3 If more than 40 small cakes are required, two identical kitchen machines should be used simultaneously.		

8.4.2.2 Paper cases

As the paper quality affects the rising height and spreading, only the paper cases specified in Annex C shall be used for reproducible results. The paper cases are 48 mm in base diameter and 29 mm in height. They are made of 70 g/m² bleached greaseproof paper.

NOTE A supplier of paper cases is indicated in Annex C.

8.4.2.3 Quantity

The baking sheet shall be measured according to 6.4 and cover at least 80 % of the usable width and 70 % of the usable depth of the cavity measured according to 6.3. If the supplied baking sheet or the sheet recommended in the instructions fits these dimensions, this baking sheet shall be used. If the supplied or recommended baking sheet does not fit the above condition or no recommendation is given, then a baking sheet fitting the above condition, made of aluminium, no coating, matt finished, 0,9 mm $\pm$ 0,1 mm thickness, lip height maximum 6 mm shall be used.

The width and the depth of the baking sheets are measured in accordance with 6.4 and each divided by 75 mm to give the number of small cakes to be placed along its sides. The numbers are rounded down to give a whole number of cakes. Multiply the number of cakes from the depth and the width to give the total number for the whole tray.

Example:

A width of 470 mm divided by 75 mm equals 6,3. This gives 6 columns of cakes.

A depth of 295 mm divided by 75 mm equals 3,9. This gives 3 rows of cakes.

Therefore the total number of cakes on the tray is 18.

The base of the outermost cakes should be at a distance of approximately 14 mm from the edge of the usable area of the baking sheet measured according to 6.4. Distribute the cakes evenly on the tray, in such a way that they do not touch each other.

The manufacturer's instructions regarding the number of baking sheets which may be cooked simultaneously are followed.

8.4.2.4 Procedure

All ingredients shall be at ambient temperature before starting.

Beat together butter and sugar in a food mixer until it becomes soft and pale in colour so that all the sugar is incorporated into the mix. Gradually add the egg mixture. Sift the flour, baking powder and salt together and gently fold into the mixture; loosen the mixture as required from the edge of the bowl to ensure that the mixture is homogeneous.

The temperature of the mixture shall be $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ directly after mixing.

NOTE 1 A suitable food mixer for which the mixing time has been determined is indicated in Annex C.

NOTE 2 Ensure that the paper cases maintain a uniform circular shape by carefully peeling cases from the outside of the batch without distortion.

Weigh $28\text{ g} \pm 0,5\text{ g}$ of the mixture into the centre of the paper cases and place them evenly on the baking sheets. Bake immediately.

NOTE 3 The tests are carried out using corrected temperature control settings according to the differences determined by the test of 8.2.

a) Baking on one level

Follow the operating instructions with respect to the heating function, temperature, shelf position and preheating. If preheating is recommended, small cakes are placed in the oven when the end of the preheating phase is indicated, for example by visual or acoustic signal, or after a recommended pre-heating time. If no instructions are given, the oven is set to $160\text{ }^{\circ}\text{C}$ for forced air circulation function or to $185\text{ }^{\circ}\text{C}$ for conventional heating function and the baking sheet is placed in the middle of the usable cavity of the cold oven. While the small cakes are baking, the position of the baking sheet shall not be changed.

The baking time shall not exceed 40 min when baking on one level (including preheating time).

b) Baking on two levels

The baking sheets are placed simultaneously in the oven one above the other and removed simultaneously at the end of baking. While the small cakes are baking, the position of the baking sheets shall not be changed. Follow the operating instructions with respect to the heating function, temperature, shelf position and preheating. If preheating is recommended, the small cakes are placed in the oven when the end of the preheating phase is indicated, for example by visual or acoustic signal, or after a recommended pre-heating time.

If no instructions for small cakes on two levels are given, the oven is set to $160\text{ }^{\circ}\text{C}$ for forced air circulation function and the baking sheets are spaced evenly in the cold oven. The horizontal position of the baking sheets shall be in the middle of the cavity base area. The vertical position of the sheets shall be spaced at one third and two third of the usable height of the ovens as near as possible without modifying the shelf racks.

NOTE 4 Baking on two levels is not carried out for small oven cavities, as defined in 3.14

The baking time shall not exceed 50 min when baking on two levels (including preheating time).

c) Baking on more than two levels

If the operating instructions recommend baking on more than two levels simultaneously then cakes are baked in accordance with the instructions (heating function, temperature, shelf position, preheating and baking time).

8.4.2.5 Assessment

Within 30 min after baking, the paper cases are very carefully removed so that the largest base area possible can be assessed. For assessment according to 8.4.2.5.3, at least 50 % of the base shall be undamaged. Otherwise the test shall be repeated.

NOTE Cooling the small cakes quickly can aid clean removal of paper cases.

Browning of the top and base of the cakes, the differences of browning between these, and the evenness of rise, are assessed within one hour after baking. If small cakes have been baked on several levels simultaneously, each sheet shall be assessed separately (single result) and additionally they are assessed together (overall result).

The requirements of the results of these small cakes baked on one or more levels are different. This shall be considered in the evaluation.

8.4.2.5.1 Visual assessment

For comparative results the evaluation of browning may be done by a visual check using the criteria for assessment in 8.4.2.5.3.

The shade numbers of the Table B.1 of Annex B are used to evaluate browning. For a visual check, the same background colour and illumination shall be used for each tray.

8.4.2.5.2 Digital assessment

For reproducible results of the evaluation of browning any digital measurement system shall be used which meets the following requirements when the measurements are taken.

a) Evenness of light distribution on the measurement area

The reflection value R_y of a uniform coloured shade chart shall be measured over the entire surface to be analysed, for example, the size of the baking sheet or one small cake. The shade chart shall be coloured in shade number 10, which is defined in Annex B.

The mean value of the reflection value R_y over the entire surface is determined. More than 90 % of the entire surface may deviate from the mean value by up to ± 5 %. Less than 10 % of the entire surface may deviate by up to ± 8 %.

The entire surface is divided in 1 cm^2 sections. None of the mean values of the 1 cm^2 sections shall deviate by more than ± 5 % of the mean value of the entire surface.

NOTE 1 Shade number 10 is used to check the quality of the illumination as it is the most desired shade.

NOTE 2 Each small cake can be measured separately.

b) Recognition of the reference colours

The shade numbers defined in Annex B shall be confirmed in all positions of the surface to be assessed.

This is ensured using the following check:

Flat circular calibrated colour samples with a diameter of 70 mm in every shade number defined in Annex B are placed at a height of 28 mm. The reflection value R_y of the

calibrated colour samples shall be measured in the corners of the area to be assessed (where the outermost small cakes are positioned during the measurement), as well as in the centre.

The reflection value R_y of the calibrated colour samples shall be measured with the deviations given in Annex B.

NOTE 3 To ensure that the light conditions and the focal length which will be used for the assessment are comparable, the colour samples should be at the height of 28 mm.

NOTE 4 Squared colour samples with a length of 70 mm and width of 70 mm could be used as well.

NOTE 5 Technical details are not fixed in order to be open for technical progress (e.g. camera, software).

c) Consistent colour recognition on a convex surface

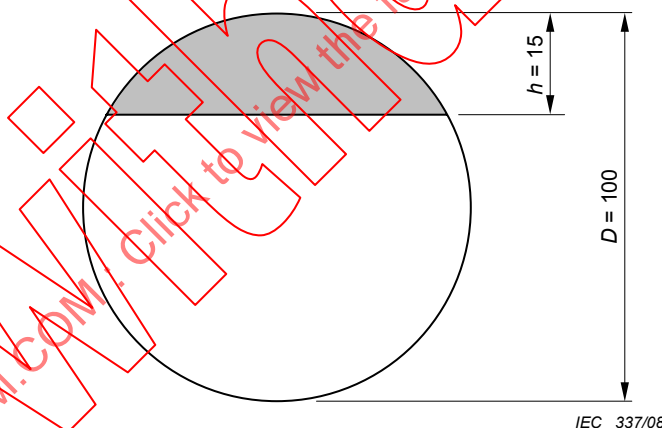
A convex colour sample (shape as defined in Figure 13) with a smooth and matt finished surface painted in shade number 10, is placed at a height of 13 mm in the corners of the area to be assessed (where the outermost small cakes are positioned during the measurement), as well as in the centre. The reflection value is measured in 13 sections (defined in Figure 14). The mean value of the reflection values of all sections in each position is calculated. The extreme values may deviate by $\pm 9\%$ of the mean value.

Definition of the convex colour sample: A ball with a smooth surface and a diameter of 100 mm is cut at a depth of 15 mm, as illustrated in Figure 13, and the smaller section is used as the convex colour sample.

NOTE 6 The surface of the convex colour sample should be < 35 specular gloss value for an angle of 85° (according to ISO 2813:1994).

NOTE 7 To ensure that the light conditions and the focal length which will be used for the assessment are comparable, the convex colour samples (height of convex colour sample is 15 mm) should be positioned at the height of 13 mm (total height 28 mm at the highest point).

Dimensions in millimetres



IEC 337/08

Figure 13 – Convex colour sample

d) Definition of the illuminance

The measurement is taken under a full spectral fluorescent triband or equivalent from 6 000 K to 7 000 K, colour rendering index $R_a > 90\%$ illumination.

NOTE 8 Suppliers for suitable lamps are indicated in Clause C.3.

NOTE 9 A supplier of a colour measuring system which meets these requirements, is given in Clause C.4.

8.4.2.5.3 Criteria for assessment (digital and visual)

a) Evaluation on the top of the small cakes

The top of each small cake is divided into 13 nearly equally sized sections, as shown schematically in Figure 14.

The values are adapted to the size and shape of each small cake.

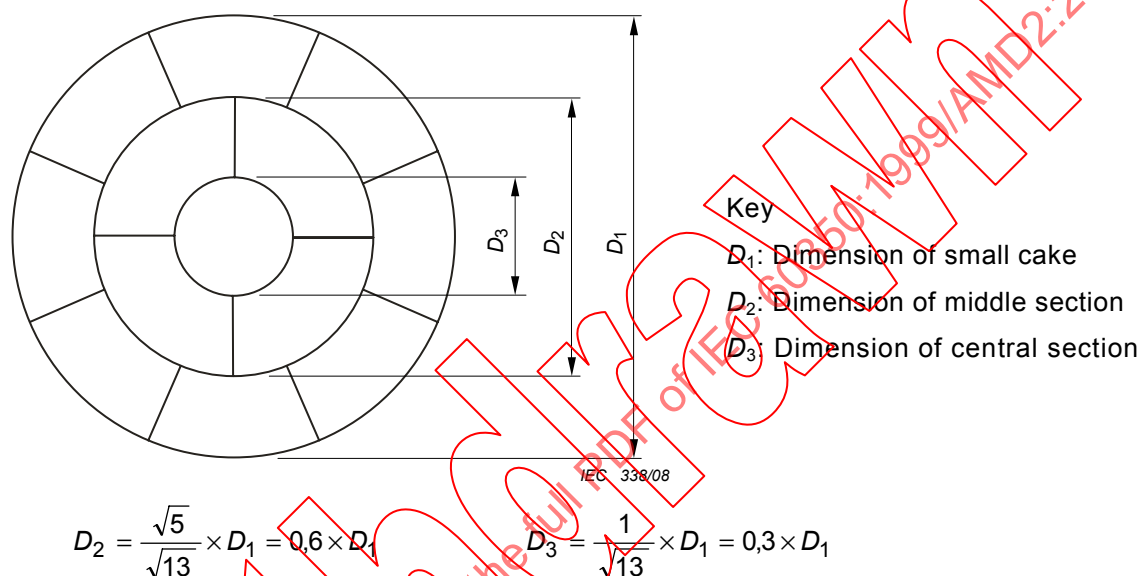


Figure 14 – Template for the sectioning of small cakes

The arithmetic average of reflection value R_y is calculated for the whole area of each section.

A shade number is determined according to Annex B and noted for each section.

1 Acceptable browning on the top

The average browning on the top of each single sheet and of all sheets baked simultaneously is calculated by dividing the sum of the shade numbers by thirteen times the number of cakes.

$$\text{average browning} = \frac{\text{sum of the shade numbers}}{13 \times \text{number of cakes}}$$

The average browning on the top is reported to one decimal place (single results per sheet and overall result).

Results of the test according to 8.4.2 shall only be accepted if the average browning on the top of all baking sheets baked simultaneously is in the range of 9,5 to 10,5. Otherwise, the test shall be repeated with a modified setting. If the baking time exceeds 40 min (preheating time included) for baking on one level or 50 min (preheating time included) for baking on two levels respectively, the oven temperature shall be increased accordingly.

NOTE 1 The average browning should be within the given range for a comparable result.

2 CPB (cakes properly browned) on the top

All cakes with at least one section having a shade number outside the range 8 to 12 are not included.

CPB = Number of cakes where all sections have shade numbers between 8 and 12

3 PPB (percentage properly browned) on the top

PPB = CPB / total number of cakes * 100 %

4 Browning difference on the top

The maximum difference between the shade numbers of all sections is determined and reported as browning difference on the top of each baking sheet separately and of all sheets baked simultaneously (single results per sheet and overall results).

b) Evaluation of the base of the small cakes

The reflection value R_y for the undamaged part of the base of each small cake is determined. A shade number is determined according to Annex E and noted for each small cake.

NOTE 2 At least 50 % of the base of each small cake should not be damaged after removing the paper case. Otherwise the test should be repeated.

1 Average browning on the base

The average browning on the base for each sheet separately and of all sheets baked simultaneously is calculated by dividing the sum of the shade numbers by the number of cakes.

$$\text{Average browning of the bottom} = \frac{\text{sum of the shade numbers}}{\text{number of cakes}}$$

The average browning on the base is reported to one decimal place (single results per sheet and overall result).

2 Browning difference on the base

The maximum browning difference between the shade numbers is determined and reported as browning difference on the base of each baking sheet separately and of all sheets baked simultaneously (single result per sheet and overall result).

c) Evaluation of the browning difference between top and base (top - base)

The browning difference between top and base is calculated by subtracting the average browning on the base from the average browning on the top.

$$\text{top} - \text{base} = |\text{average browning on the top} - \text{average browning on the base}|$$

The browning difference between top and base (absolute value) is reported for each sheet separately and of all sheets baked simultaneously (single results per sheet and overall result).

d) Measurement of the height of small cakes

The highest point of each small cake is measured and recorded in millimetres. Cutting or stabbing shall not affect the height of the cake.

The minimum height and the maximum height shall be recorded for each sheet separately.

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Add, after subclause 11.3, the following new clause.

12 Standby power

The standby power shall be determined in accordance to IEC 62301:2005 with the following modifications.

For multifunctional appliances which may consist of a variety of different hobs and ovens which are designed to be combined in a single range, the recommended combination as declared in the manufacturer's instruction are used for the test.

For the determination of standby power, the appliance shall be in the state recommended in the manufacturer's instructions, if any, when the product (intended function) is not in use.

NOTE 1 Appropriate advices in the manufacturer's instructions on how to reduce standby power has to be taken into account when preparing the appliance for test.

When testing appliances that are fitted with a clock, the clock shall be adjusted to the correct time and date as specified in the instructions. If an option is provided to switch off the display, it is tested in this mode.

NOTE 2 If the brightness of the display can be altered by the user, the brightest illumination should be selected for the measurement. If the brightness of the display is affected by the ambient light conditions, a steady state condition should be used during the measurement and the ambient illumination level recorded in the test report.

The appliance shall be at ambient temperature before the power is monitored.

The appliance shall be connected to the power source and allowed to stabilize before the measurements are made.

If the power reading is not stable the power consumption in each relevant mode shall be determined as an average power measurement over a period of not less than 30 min.

When preparing the test report for multifunction appliances the combination of types of main powered parts (hobs, ovens, grills, warming plates, griddles etc) used for the measurement shall be recorded in addition to the brand, model, type, and serial number of each part.

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Figure 4 – Internal dimensions of ovens

Replace the existing figure and its title by the following new Figure 4, encompassing Figures 4a and 4b.

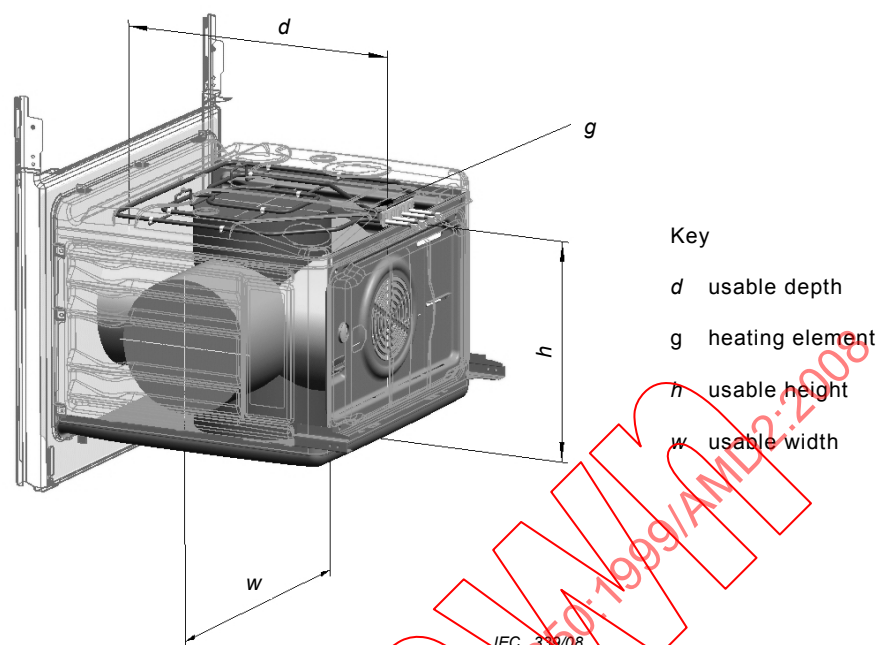


Figure 4a – Measurement procedure

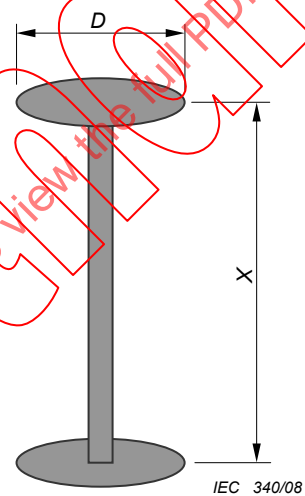


Figure 4b – Gauge for determining the usable volume

Figure 4 – Usable internal dimensions and usable volume of ovens

Replace the title and the entire text of Annex B by the following:

Annex B (normative)

Shade chart

This Annex specifies the relation between reflection value R_y and shade numbers corresponding to NCS shade charts.

Table B.1 – Classification of shade numbers

Measured reflection value R_y		Tolerances for 8.4.2.5.2	Shade number
$\geq$	$<$		
	7,2	$\pm 14 \%$	17
7,2	9,3	$\pm 13 \%$	16
9,3	12,2	$\pm 12 \%$	15
12,2	16,4	$\pm 11 \%$	14
16,4	20,1	$\pm 10 \%$	13
20,1	22,9	$\pm 10 \%$	12
22,9	26,5	$\pm 9 \%$	11
26,5	31,7	$\pm 9 \%$	10
31,7	38,5	$\pm 8 \%$	9
38,5	46,9	$\pm 8 \%$	8
46,9	54,2	$\pm 8 \%$	7
54,2	64,3	$\pm 8 \%$	6
64,3	75,2	$\pm 8 \%$	5
75,2		$\pm 8 \%$	4

Table B.2 – Examples for the shade charts

NCS		
Shade chart	L^*	R_y
S 8502-Y	30,3	6,4
S 7020-Y50R	34,4	8,2
S 6030-Y50R	38,6	10,4
S 5040-Y40R	44,5	14,2
S 4050-Y30R	50,4	18,8
S 4040-Y30R	53,4	21,4
S 4030-Y30R	56,6	24,5
S 3040-Y30R	60,5	28,7
S 2060-Y20R	65,7	34,9
S 2040-Y20R	71,1	42,3
S 1050-Y20R	77,1	51,7
S 1040-Y20R	80,1	56,9
S 0530-Y10R	88,1	72,3
S 0520-Y10R	90,9	78,3

NOTE 1 The measured reflection value R_y does not correlate linearly to the visual perception. Although the widths of the intervals given above increase with increasing reflection value R_y , visually the steps from shade number to shade number are fairly uniform.

NOTE 2 R_y Reflection values are calculated from the L^* values based on the CIE $L^*a^*b^*$ colour system. (D65 1964, T/8°).

NOTE 3 Shade numbers defined in Table B.1 are used for the visual and digital assessment instead of colour gauge, reference BS 3999: Part 5G to provide intermediate shades.

NOTE 4 The NCS shade charts can be ordered at official NCS Centres all over the world. The following address shows potential distributors.

Sweden (Head Office)
Scandinavian Colour Institute AB

Telephone: +46-(0)8-617 47 00

Fax: +46-(0)8-617 47 47

Visitors: Igeldammsgatan 30

Address: P.O. Box 49022, S-100 28 Stockholm

Internet: www.ncscolour.com

E-mail: info@ncscolour.com

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Replace the entire text of Annex C by the following:

Annex C (informative)

Addresses of suppliers

C.1 General

The following information is given for the convenience of users of this standard and does not constitute an endorsement by the IEC.

C.2 Testing ingredients for small cakes (see 8.4.2.5.2)

All ingredients for preparation of small cakes as specified in this standard and the paper cases may be obtained from: Stamminger & Demirel Testmaterialien

Telephone: +49 9123 98 89 75
Fax: +49 9123 98 84 89
e-mail: r.stamminger@web.de
Erbsenbodenstr. 31
D-91207 Lauf – Germany
www.sta-de.com

All ingredients used for reproducible results shall be from the same batch. It is recommended that the ingredients used match the definitions in the Table C.1.

Table C.1 – Ingredient specification

Ingredients	Problems of constant quality	Quality criteria
Butter	Variation with season and region of origin Salt content	Ingredients: cow's cream, lactobacilli Fat content 82,5 % (minimum 82 %) Water content <16 % Unsalted, pH value in serum 5,2 – 6,3
Sugar	Humidity uptake.	Disaccharide Saccharose, anhydrous Refined white sugar EU cat.1 "Raffinade fein RFF" grain size 0,10 mm – 0,35 mm d95/d05
Egg mixture	Variation of biochemical constitution of eggs with season and nutrition.	Hen's egg mixture, pasteurised, homogeneous Packed in Tetra Brik ¹ , deep frozen (at least – 18 °C) pH 6,4 – 7,0 Dry substance 22,7 % – 23,7 %
Flour	Variation with season and region of origin. Humidity uptake. Additives.	Wheat flour (triticum aestivum L.) Mineral content: maximum 0,5 % (dry substance) Humidity: maximum 15,0 % Falling number: at least 250 s Gluten: at least 24,0 % Sedimentation: at least 26 ml Protein: approx.10,6 % (dry substance) Fat: approx. 1,0 % Carbohydrates: approx. 70,9 % Energy: approx.1 409 kJ / approx.332 kcal Additive: ascorbic acid
Salt		Grain size <1 mm
Baking powder	Relation and sort of expanding agent	Substance of content: Natriumhydrogencarbonate (E 500, 33,3 %), Dinatriumdiphosphate (E 450, 46,7 %) Wheat starch

¹ Tetra Brik is the trade name of a product supplied by Stamminger & Demirel. Testmaterialien. This information is given for the convenience of users of this document and does not constitute an endorsement by IEC of the product named. Equivalent products may be used if they can be shown to lead to the same results.