

SLOVENSKI STANDARD
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Stanovanjske grelne naprave na trdna goriva - 2-3. del: Štedilniki

Residential solid fuel burning appliances - Part 2-3: Cookers

Häusliche Heizgeräte für feste Brennstoffe - Teil 2-3: Herde

Équipement de chauffage domestique - Partie 2-3 : Guisinières

Ta slovenski standard je istoveten z: prEN 16510-2-3

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97.040.20	Štedilniki, delovni pulti, pečice in podobni aparati	Cooking ranges, working tables, ovens and similar appliances
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Residential solid fuel burning appliances - Part 2-3: Cookers

Équipement de chauffage domestique - Partie 2-3 :
Cuisinières

Häusliche Heizgeräte für feste Brennstoffe - Teil 2-3: Herde

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 295.

If this draft becomes a European Standard, 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (prEN 16510-2-3:2013) has been prepared by Technical Committee CEN/TC 295 "Residential solid fuel burning appliances", the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12815:2001.

EN 13240:2001, EN 13229:2001, EN 12815:2001 and EN 12809:2001 will be totally superseded by EN 16510 series. The revision of these European Standards takes into account the comments received at their 5-year review.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive 89/106/EEC, see informative Annex ZA, which is an integral part of this document.

The structure of EN 16510, *Residential solid fuel burning appliances*, is as follows:

- Part 1: General requirements and test methods;
- Part 2-1: Roomheaters;
- Part 2-2: Inset appliances including open fires;
- Part 2-3: Cookers;
- Part 2-4: Independent boilers – Nominal heat output up to 50 kW.

Principally it is possible to add further parts 2 at a later stage in order to cover other residential solid fuel burning appliances such as pellet stoves or slow heat release appliances.

This Part 2-3 is to be used in conjunction with the latest edition of EN 16510-1 and its amendments. It was established on the basis of prEN 16510-1:2013.

This Part 2-3 supplements or modifies the corresponding clauses in EN 16510-1, so as to convert that publication into the European Standard: *Residential solid fuel burning appliances – Requirements and test methods for cookers*.

When a particular subclause of Part 1 is not mentioned in this Part 2-3, that subclause applies as far as is reasonable. When this Part 2-3 states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

NOTE The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

prEN 16510-2-3:2013 (E)**1 Scope**

This Part 2-3 of EN 16510 is applicable to hand fired residential cookers whose primary function is to cook and whose secondary function is to provide heat into the space in which they are installed. Additionally, where fitted with a boiler, they also provide domestic hot water and/or central heating. These appliances may burn either solid mineral fuels, lignite briquettes, peat briquettes, natural or manufactured wood logs or be multi-fuel in accordance with the appliance manufacturer's instructions.

This Part 2-3 of EN 16510 is not applicable to appliances with fan assisted combustion air or appliances that are mechanically fired.

2 Normative references

prEN 16510-1:2013, Clause 2, is applicable.

3 Terms and definitions

prEN 16510-1:2013, Clause 3 is applicable.

4 Classification of appliances and system boundary for roomsealed appliances

prEN 16510-1:2013, Clause 4, is applicable.

5 Materials, design and construction

prEN 16510-1:2013, Clause 5, is applicable with the following modifications.

5.2.2.2 Nominal minimum wall thicknesses (steel)

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Differing from the requirement given in Table 2 for walls of water backed surfaced of the combustion chamber in contact with burning fuel or products of combustion the minimum wall thickness for non-alloy steels is 4 mm for cookers.

5.2.6 Ashpan and ash removal

prEN 16510-1:2013, 5.2.6, is applicable with the following modification.

Replacement of the 1st paragraph:

A means of removing ash residue from the appliance shall be provided. Where an ashpan is provided its capacity shall be not less than 0,75 dm³ per kW nominal output for appliances without a boiler and 0,3 dm³ per kW nominal output for appliances with a boiler whilst retaining sufficient space above to allow adequate primary air - flow through the bottomgrate or firebed. If the ashpan resides in the appliance it shall locate in the ashpit in such a way that it allows the free passage of primary air and in such a position that it does not obstruct any primary air inlet control.

5.2.7 Bottomgrate

prEN 16510-1:2013, 5.2.7, is applicable with the following modification.

Replacement of the 1st paragraph:

The bottomgrate, excluding those with water - cooled firebars, shall be capable of being removed and shall be so designed or marked as to ensure correct assembly. A de-ashing mechanism shall be fitted where fuels other than wood are burned. The bottomgrate shall not become dislodged during the de-ashing process.

5.2.10 Firedoors and charging doors

prEN 16510-1:2013, 5.2.10, is not applicable.

Replacement of the whole subclause 5.2.10:

Firedoors and charging doors shall be designed to prevent accidental opening and to facilitate positive closure. Door seals shall be either metal to metal or of flexible non-combustible material.

Means shall be provided to maintain the fit of any door sealed with flexible non-combustible material.

When open firedoors shall not obstruct the firebox opening and shall be capable of opening to an angle greater than 90°.

If fitted, hotplate charging doors shall either be removable or capable of being opened to an angle greater than 90°.

NOTE Designed air inlets around the periphery of the door(s) are permitted.

Addition of the following new subclause:

5.101 Additional requirements for cookers

5.101.1 Oven door

When open, side hinged oven doors shall not obstruct the oven opening and shall be capable of opening to an angle greater than 90°.

When drop down doors are completely open, they shall form an angle of between 85° and 90° to the vertical and remain in this position. When tested in accordance with A.4.101.5, the drop down door shall not sag by more than 15 mm, and the cooker shall not tilt.

5.101.2 Hotplate and top plate

The top plate shall incorporate a metal or ceramic surface in the form of a hotplate. Part of the hotplate shall be designed as a boiling plate area.

When the cooker is assembled in accordance with the appliance manufacturer's installation instructions, complete with any legs or plinth supplied as an integral part of the appliance, the height from the floor to the cooking surface(s) shall be between 800 mm and 930 mm.

5.101.3 Main/additional ovens

Where a compartment or compartments are provided as an oven or ovens, their purpose shall be specified in the appliance operating instructions.

The main oven and any additional oven shall be provided with at least two shelf runner positions.

When tested in accordance with the test method detailed in A.4.101.4, the angle of inclination of any oven shelf when under load shall not exceed 10° from the horizontal.

5.101.4 Ashpit and ashpit cover/door

The ashpit shall be so designed that when the ashpan is in position it shall not restrict the primary air inlet.

The ashpit cover/door shall be designed to ensure that

— its closure is not prevented by spilled residue material,

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- it cannot be accidentally dislodged,
- when hot it can be handled safely with the tools provided,
- the ashpit is of sufficient size to accommodate the ashpan.

5.101.5 Oven temperature indicators

For a cooker with an oven(s) to which an oven temperature indicator is fitted, the indicator shall be readable without opening the oven door.

6 Safety requirements

prEN 16510-1:2013, Clause 6, is applicable.

7 Performance requirements

prEN 16510-1:2013, Clause 7, is applicable with the following modifications.

7.3 Efficiency

prEN 16510-1:2013, 7.3, is applicable with the following modification.

Addition after 1st paragraph:

The manufacturer's declared efficiency value shall be equal to or exceed 70 %.

7.5 Recovery test

prEN 16510-1:2013, 7.5, is applicable with the following modification.

Replacement of the 2nd paragraph:

Recovery shall be deemed to be satisfactory if the refuel charge is visibly ignited under the test conditions described in A.4.8.4 within a time of 30 min with a flue draught of (10_0^{+2}) Pa.

7.6 Refuelling intervals

prEN 16510-1:2013, 7.6, is applicable with the following modification.

Replacement of Table 8:

Table 8 — Minimum refuelling intervals

Appliance type	Test fuel type (as detailed in Table B.1)	Minimum refuelling interval hours
At nominal heat output		
Automatically controlled Wet or dry cooker	Wood logs, lignite briquettes or peat briquettes	1
	All other test fuels	3
Manually controlled wet or dry cooker	Wood logs, lignite briquettes or peat briquettes	1
	All other test fuels	2
At slow combustion		
Continuous operating appliance	Wood logs, lignite briquettes or peat briquettes	3
	All other test fuels	12
Intermittent operating appliance	Wood logs, lignite briquettes or peat briquettes	No requirement
	All other test fuels	No requirement

Addition of the following new subclause:

7.101 Additional requirements for cookers

7.101.1 Oven heating

When tested in accordance with A.4.101.3, at the same flue draught as used during the performance test at nominal heat output, the strips of shortbread shall be cooked through to the centre. The degree of browning of the top and bottom surfaces of the strips, when assessed against the browning chart detailed in A.4.101.3, shall be within the colour range given on the chart.

7.101.2 Boiling test

When tested in accordance with A.4.101.2 at the same flue draught as used during the performance test at nominal heat output, the temperature of the water in the specified boiling utensil shall rise by 75 K within 15 min of the start of the test.

7.101.3 Appliances with alternative bottomgrate positions

Where the appliance has alternative lower and upper bottomgrate positions i.e. for winter/summer mode operation, the appliance shall be tested initially with the bottomgrate in its lower position, and the performance requirements specified in 7.1 to 7.4 shall be satisfied.

In addition, the following tests shall be undertaken with the bottomgrate in its upper position:

- a) a nominal heat output test conducted in accordance with A.4.7 to determine the heat outputs and to verify that the safety requirements of 6.4 to 6.6 are met.

The requirements of 7.1 to 7.4 do not apply to the heat output tests in this upper bottomgrate position and therefore only the following parameters shall be measured and recorded during this test:

- i) space heating output;
- ii) water heating output (if boiler fitted);

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- iii) surface temperatures of operating knobs/handles;
 - iv) temperatures of the trihedron test hearth and walls or other structure surrounding the appliance e.g. ceiling;
 - v) flue gas temperature.
- b) a hotplate boiling test in accordance with A.4.101.2, when the appliance shall satisfy the requirements of 7.101.1.

8 Appliance instructions

prEN 16510-1:2013, Clause 8, is applicable.

9 Evaluation of conformity**9.1 General**

prEN 16510-1:2013, 9.1, is applicable.

9.2 Initial type testing

prEN 16510-1:2013, 9.2, is applicable.

9.3 Factory production control (FPC)

prEN 16510-1:2013, 9.3, is applicable with the following modification.

9.3.2.5.4 Construction and dimensions

prEN 16510-1:2013, 9.3.2.5.4, is applicable with addition.

Addition after I):

- m) oven construction;
- n) hotplate/top plate.

10 Marking

prEN 16510-1:2013, Clause 10, is applicable.

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Test methods

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Replacement of Table A.2:

Table A.2 — Minimum duration, and minimum number of test periods

Appliance	Fuel	Test period	
		Minimum duration	Minimum number
At nominal heat output			
Automatically controlled Wet or dry cooker	Wood, lignite briquettes, peat briquettes	1 h	2
	All other solid mineral fuel	3 h	2
Manually controlled wet or dry cooker	Wood, lignite briquettes, peat briquettes	1 h	2
	All other solid mineral fuel	2 h	2
At slow or reduced combustion			
Continuous operating appliance	Wood, lignite briquettes, peat briquettes	3 h	2
	All other solid mineral fuel	12 h	2
Intermittent operating appliance	Wood, lignite briquettes, peat briquettes	No requirement	
	All other solid mineral fuel	No requirement	

Addition of the following new subclauses:

A.4.101 Special tests for cookers

A.4.101.1 Measurement of oven temperature

Measure the temperature at the centre of the main oven and any additional oven(s) (where fitted) using a thermocouple capable of meeting the uncertainty of measurement requirements specified in A.3. Measure and record the centre temperature of each oven either continuously or at intervals not exceeding 1 min. At the end of the test period calculate the mean centre temperature of each oven.

A.4.101.2 Hotplate boiling test

A.4.101.2.1 General

This test may be conducted as a separate test or as part of one of the typical test regimes detailed in A.4.102. The hotplate boiling test may start from cold or may follow the nominal heat output test provided that the fire has been de-ashed in accordance with A.4.3 at the termination of that test. In either case, the appliance is then operated for a further pre-test period in accordance with A.4.7.2 before commencing the test period.

If the test is started from cold, the hotplate boiling pre-test period shall be preceded by an initial ignition and pre-test period at nominal heat output in accordance with A.4.7.2.

The primary air opening to be used for the hotplate boiling test shall be as specified by the manufacturer in the operating instructions for the appliance. If the appliance is fitted with a thermostatically controlled primary air control, the test is carried out with the thermostatic control in operation.

A.4.101.2.2 Test utensil

The boiling test utensil shall be a steel or cast iron saucepan having the dimensions shown in Figure A.101. The base of the saucepan shall be flat with a tolerance of 0,05 mm in the concave direction only.