



**SLOVENSKI STANDARD**  
**SIST EN 13229:2003/A2:2005**  
**01-april-2005**

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**Odpri kamini in kaminski vložki na trdna goriva - Zahteve in preskusne metode**

Inset appliances including open fires fired by solid fuels -Requirements and test methods

Kamineinsätze einschließlich offener Kamine für feste Brennstoffe - Anforderungen und Prüfungen

Foyers ouverts et inserts à combustibles solides - Exigences et méthodes d'essai

**ITeH STANDARD PREVIEW**  
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**Ta slovenski standard je istoveten z: EN 13229:2001/A2:2004**

SIST EN 13229:2003/A2:2005  
<https://standards.iteh.ai/catalog/standards/sist/b7650e70-cb0c-45be-90ab-063230ad2985/sist-en-13229-2003-a2-2005>

**ICS:**

97.100.30      Grelniki na trdo gorivo      Solid fuel heaters

**SIST EN 13229:2003/A2:2005**      **en,fr,de**

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ICS 97.100.30

English version

## Inset appliances including open fires fired by solid fuels - Requirements and test methods

Foyers ouverts et inserts à combustibles solides -  
Exigences et méthodes d'essai

Kamineinsätze einschließlich offene Kamine für feste  
Brennstoffe - Anforderungen und Prüfungen

This amendment A2 modifies the European Standard EN 13229:2001; it was approved by CEN on 18 June 2004.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

[SIST EN 13229:2003/A2:2005](https://standards.iteh.ai/catalog/standards/sist/b7650e70-cb0c-45be-90ab-063230ad2985/sist-en-13229-2003-a2-2005)

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## **Foreword**

This document (EN 13229:2001/A2:2004) has been prepared by Technical Committee CEN/TC 295 "Residential solid fuel burning appliances", the secretariat of which is held by BSI.

This Amendment to the European Standard EN 13229:2001 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by May 2006.

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 Directives.

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

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

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## 1 Contents list

*Insert the title listing for a new Clause 9 after Clause 8 as follows:*

“Clause 9 Evaluation of conformity”

*Delete the existing contents listing of Annex C and replace with the listing of Annex ZA as follows:*

“Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive”

*Insert the title of the following new Figure A.15 after Figure A.14:*

“Figure A.15 Example of installation with trihedron test wall and ceiling”

*Delete the existing contents listing for Table 8 and Table 9.*

*Insert a new title listing for Bibliography after new title listing for Annex ZA.*

## 2 Clause 2 Normative references

*Add the following new references:*

“EN 50165 *Electrical equipment of non-electric appliances for household and similar purposes — Safety requirements.*”

ISO 2859 (all parts) *Sampling procedures for inspection by attributes.*”

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## 3 Clause 3 Terms and definitions

*Delete the existing 3.3.23 and replace with the following* [SIST EN 13229:2003/A2:2005](https://standards.iteh.ai/catalog/standards/sist/b7650e70-cb0c-45be-90ab-063230ad2985/sist-en-13229-2003-a2-2005)  
<https://standards.iteh.ai/catalog/standards/sist/b7650e70-cb0c-45be-90ab-063230ad2985/sist-en-13229-2003-a2-2005>

### “3.3.23

#### **flue gas connector**

duct through which flue gases are conveyed from the flue spigot of the appliance into the chimney flue”

## 4 Clause 4 Materials, design and construction

### 4.1 Production documentation

*Add the following new text after the first paragraph:*

“The parameters and characteristics considered in making the decisions in relation to either the family or range of appliances to be submitted for initial type testing (see 9.2.1) or further type testing where changes are made to an appliance (see 9.2.2) shall be recorded. A copy of the parameters and characteristics considered in making the decisions shall be included in the production documentation for each appliance.”

## 5 Clause 5 Safety

### 5.2 Temperatures of adjacent combustible materials

*Delete the whole of sub-clause 5.2 and replace with the following:*

The appliance manufacturer shall provide in his installation instructions the necessary information for either insulating the walls and/or the floor and/or the ceiling or indicating the required clearance distances to ensure that the temperature of any adjacent walls, floor or ceiling or other structure constructed of combustible materials do not exceed the ambient temperature by more than 65 K.

When tested during the performance test at nominal heat output in accordance with A.4.7, and the temperature safety test in accordance with A.4.9, and when the appliance is installed in accordance with the clearance distances specified in the manufacturer's installation instructions, the temperature of the test hearth and walls and/or ceiling or any other structure surrounding the appliance comprising combustible material shall not exceed the ambient temperature by more than 65 K.

### 5.4 Natural draught safety test

*Delete the 2<sup>nd</sup> sentence of sub-clause 5.4 and replace with the following:*

"When tested in accordance with A.4.9.4 either the flue draught throughout the test period shall be not less than 3 Pa or where the flue draught falls below 3 Pa then over a further 10 h period from when the draught falls below 3 Pa the total quantity of carbon monoxide in the flue gas, calculated to NTP as detailed in A.6.2.8, shall not be greater than 250 dm<sup>3</sup>."

### New sub-clause 5.11

*Add the following new sub-clause 5.11 to cover electrical safety.*  
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<https://standards.iteh.ai/catalog/standards/sist/07650e70-cb0c-45be-90ab-063230ad2985/sist-en-13229-2003-a2-2005>

#### **5.11 Electrical safety**

The appliance shall comply with the electrical safety requirements of EN 50165 if mains operated electrical equipment is fitted as part of the appliance."

## 6 Clause 6 Performance

### 6.3.2 Carbon monoxide emission classes for all other appliances with closed doors

*Delete the existing title of sub-clause 6.3.2, the whole of the existing text of sub-clause 6.3.2 and its accompanying NOTE together with the whole of Table 8 and replace with the following:*

#### **"6.3.2 Carbon monoxide emission for all other appliances with closed doors"**

When measured at nominal heat output in accordance with A.4.7, the mean carbon monoxide concentration calculated to 13% oxygen (O<sub>2</sub>) content in the flue gas shall be less than or equal to the manufacturer's declared value and shall not exceed 1,0%.

Some countries have existing national legislation which set limits for maximum carbon monoxide concentration levels under nominal heat output and/or slow or reduced combustion, in these cases the carbon monoxide level shall be measured during the nominal heat output test in accordance with A.4.7 and the slow or reduced combustion test in accordance with A.4.8 for appliances sold in that country."

## 6.4 Efficient energy utilization

Delete the whole of the existing text and the accompanying NOTE of sub-clause 6.4 together with the whole of Table 9 and replace with the following:

## 6.4 Efficient energy utilization

### 6.4.1 General

When the appliance is operated as specified by the manufacturer, burning the specified fuels representing the recommended fuels listed in the operating instructions, it shall meet the requirements of 6.4.2 or 6.4.3 as appropriate to the appliance type.

### 6.4.2 Efficiency of Kachelöfen or Putzöfen inset appliances

When tested in accordance with A.4.7, the measured total efficiency from the mean of at least two test results at nominal heat output shall be greater than or equal to the manufacturer's declared value and shall be not less than 75%.

### 6.4.3 Efficiency for all other appliance types

When tested in accordance with A.4.7, the measured total efficiency from the mean of at least two test results at nominal heat output shall be greater than or equal to the manufacturer's declared value and shall equal or exceed 30%.

Some countries have existing national legislation which set limits for minimum efficiency under nominal heat output and/or slow or reduced combustion, in these cases the minimum efficiency shall be determined during the nominal heat output test in accordance with A.4.7 and the slow or reduced combustion test in accordance with A.4.8 for appliances sold in that country.

## 6.5 Refuelling intervals at nominal heat output

Delete the 2<sup>nd</sup> sentence of sub-clause 6.5 and replace with the following:

"The nominal load shall be calculated using the refuelling intervals, the manufacturer's declared efficiencies and the calorific values of the fuels as detailed in A.4.2."

## 7 Clause 7 Appliance instructions

### 7.2 Installation instructions

Delete the existing indent 13 of sub-clause 7.2 and replace with the following:

" – flue gas mass flow in grams per second for both open and closed firebox operations as specified by the manufacturer, where required by national/local regulation (or alternatively the nominal heat output and the appliance efficiency and mean CO<sub>2</sub> concentration when operating at nominal heat output should be given for all test fuel types)";

Add a new indent at the end of sub-clause 7.2 as follows:

"- advice on the installation of any air grilles, especially in relation to the temperature of surrounding walls, floor, ceiling or other structure around the appliance".

### 7.3 User operating instructions

Add a new indent at the end of sub-clause 7.3 as follows:

“- advice on the adjustment of any air grilles, where fitted”.

## 8 Clause 8 Marking

Delete the existing indent 5 of Clause 8 and replace with the following:

“ – the measured CO concentration at 13% oxygen content and the determined appliance efficiency at nominal heat output, as defined in 6.3 and 6.4 respectively;”

## 9 New Clause 9

Add the following new Clause 9 after Clause 8:

### 9 Evaluation of conformity

#### 9.1 General

The compliance of an inset or open fire appliance with the requirements of this standard and with the stated values shall be demonstrated by:

- type testing;
- factory production control by the manufacturer, including product assessment.

For the purposes of testing, appliances may be grouped into families, where it is considered that the selected performance characteristic or characteristics, especially in respect of those detailed in Table 12 and Table 13, is/are common to all appliances within that family.

#### 9.2 Type testing

##### 9.2.1 Initial type testing

Initial type testing shall be performed to demonstrate conformity to this standard. In the case of an appliance already in production the appliance to be tested shall be chosen at random and be representative of general production and the manufacturer shall provide a written declaration to this effect.

In the case of a prototype the appliance tested shall be a model representative of the intended future production and the manufacturer shall provide a written declaration that this is the case. When the appliance goes into production a dimensional and constructional check shall be undertaken on the production appliance to confirm it is in agreement with the originally type tested prototype model. If the dimensions of the production appliance diverge by more than 1 % of the dimension or  $\pm 3$  mm whichever is the lesser from that of the prototype in relation to the firebox and/or combustion chamber and any other dimension considered to be critical to the safety or performance of the appliance (especially in respect of the characteristics of Table 12 and Table 13) then the production appliance itself shall be subjected to further type testing as detailed in 9.2.2.

Similarly, if there is a change to the construction materials used which will adversely alter the performance characteristics of the appliance especially as regards its safety and/or the meeting of the performance characteristics of Table 13 then the production appliance itself shall be subject to further type testing as detailed in 9.2.2. This requirement regarding re-testing shall be applied if during the subsequent production or at the start of a new production run such a change is made to dimensions and/or construction materials. To ensure that this takes place there shall be a dimensional/constructional check on a current production appliance over an ongoing period not exceeding 3 years to demonstrate conformity to type.



Where tests have been previously performed in accordance with the provisions of this standard (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) then the results of these tests shall be taken into account in assessing continuing conformity to type.

For a family or range of appliance it shall be permissible to test only selected appliances across the family or range and to only verify selected constructional and performance characteristics on the others, subject to a clear decision being made that the appliances are part of a family or range of appliances. For the initial type test at least a sufficient number of the appliances shall be chosen from across the family or range so as to represent adequately the family or range. The chosen appliances shall be subjected to complete testing to fully verify their compliance with all of the constructional and performance characteristics in accordance with this standard. For the other appliances in the family or range not chosen for complete testing it shall be permissible to only verify selected constructional and/or performance characteristics to ensure their compliance with the requirements of this standard and/or to ensure they will perform the same as the fully type tested appliances of the family or range.

In selecting appliances for type testing from a product range based upon their nominal heat outputs as representing such a family then the appliances having the lowest and highest claimed nominal heat outputs shall be tested together with sufficient appliances chosen from within the range such that the ratio of nominal heat output between each of the appliances does not exceed the ratio of 1.6:1.

Further, in deciding that the appliances belong to a family or range due account shall be taken of the construction and performance characteristics of each appliance especially in respect of the list of characteristics detailed in Table 12 and Table 13. The list of characteristics in Table 12 and Table 13 is not definitive and other aspects may need to be considered in making this judgement. Where a range of appliances of the same firebox and output have differing canopies or external cladding both in size and materials of construction (eg where the hot surface would be likely to be closer to combustible surfaces or there is a change from a lower to a higher conductivity or emissivity material) then at least one appliance shall be chosen which will be the worst scenario case and will demonstrate the safety of the range as regards surface temperature and safety of adjacent combustible materials.

Where the manufacturer claims conformity to the standard for a family of appliances on a number of different fuel types a selection of tests shall be made which demonstrates the conformity of the family in respect of the safety (Clause 5) and performance (Clause 6) on these fuels on the appliances and to the list of characteristics detailed in Table 12 and Table 13.

The parameters, characteristics examined and considerations taken into account in making the decisions in relation to the family or range of appliances shall be recorded and a copy included in the production documentation for each appliance of the family or range (see 4.1).

### 9.2.2 Further type testing

Whenever a change occurs in either the appliance design, the raw material, the supplier of the components, or the production process, which would significantly alter the performance characteristics of the appliance especially in respect of one or more of the list of characteristics detailed in Table 12 and Table 13, the type tests shall be repeated for the appropriate characteristic(s).

It shall be permissible for this further type testing to verify only selected constructional and/or performance characteristics to ensure their compliance with the requirements of this standard and/or with the fully type tested appliances of the family or range.

For a family or range of appliance it shall be permissible to test only selected appliances across the family or range and to verify only selected constructional and performance characteristics on the others, subject to a clear decision being made that the appliances are part of a family or range of appliances.

In deciding the constructional and/or performance characteristics to be verified or the appliances to be tested (in the case of a family or range of appliances) due account shall be taken of the performance characteristics detailed in Table 13 together with the list of characteristics detailed in Table 12. The list of characteristics in Table 12 and Table 13 is not definitive and other aspects may need to be considered in making this judgement.

Where tests have been previously performed in accordance with the provisions of this standard then these test results shall also be taken into account in making the decision.

The parameters and characteristics considered in making either the decisions in relation to the constructional and/or performance characteristics to be verified or the appliances to be tested (in the case of a family or range of appliances) shall be recorded and a copy included in the production documentation for each appliance (see 4.1).

**Table 12 – Characteristics to take account of in deciding family of appliances**

<p><b>A Design, materials etc.</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Exterior design, dimensions, weight etc.</li> <li><input type="checkbox"/> System for air convection/radiation</li> <li><input type="checkbox"/> Ashpan</li> <li><input type="checkbox"/> Materials</li> <li><input type="checkbox"/> Assembling methods, welding etc.</li> <li><input type="checkbox"/> Other issues _____</li> <li><input type="checkbox"/> Sketches/Drawings</li> </ul>	<p><b>D Combustion air</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Cross sections of air ducts (primary/secondary)</li> <li><input type="checkbox"/> Length of air ducts (primary/secondary)</li> <li><input type="checkbox"/> Number of bendings (primary/secondary)</li> <li><input type="checkbox"/> Air inlets in combustion chamber (primary/secondary)</li> <li><input type="checkbox"/> Pre-heating of air</li> <li><input type="checkbox"/> Air control system</li> <li><input type="checkbox"/> Other issues _____</li> </ul>
<p><b>B Combustion chamber</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Dimensions of combustion chamber</li> <li><input type="checkbox"/> Flue baffle plate(s) arrangement</li> <li><input type="checkbox"/> Refractory material/insulation</li> <li><input type="checkbox"/> Front firebars/deepening plate</li> <li><input type="checkbox"/> Temperature conditions</li> <li><input type="checkbox"/> Firedoor arrangement, glass component/area</li> <li><input type="checkbox"/> Bottom grate, de-ashing system</li> <li><input type="checkbox"/> Other issues _____</li> </ul>	<p><b>E Integral fuel storage container</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Size</li> <li><input type="checkbox"/> Protection against transfer of heat</li> <li><input type="checkbox"/> Insulation</li> <li><input type="checkbox"/> Other issues _____</li> </ul>
<p><b>C Flue ways</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Cross sectional area</li> <li><input type="checkbox"/> Length of flue gas passages</li> <li><input type="checkbox"/> Flue spigot</li> <li><input type="checkbox"/> Pressure loss</li> <li><input type="checkbox"/> Transfer of heat</li> <li><input type="checkbox"/> Insulation</li> <li><input type="checkbox"/> Other issues _____</li> </ul>	<p><b>F Integral boiler</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Design, size of heating surface, heat output</li> <li><input type="checkbox"/> Materials</li> <li><input type="checkbox"/> Tapping sizes, position</li> <li><input type="checkbox"/> Waterway dimensions, venting etc.</li> <li><input type="checkbox"/> Strength, leaktightness of boiler shell</li> <li><input type="checkbox"/> Other issues _____</li> </ul>

Table 13 – Performance characteristics to take account of in deciding family of appliances

Performance characteristic	Requirement clauses in this EN
Fire safety	4.2, 4.3, 4.7, 4.8, 4.10, 4.11, 4.15, 5.2, 5.5, 5.6, 5.9, 5.10, 6.11
Emission of combustion products	4.2, 4.3, 4.7, 4.8, 4.9, 4.14, 5.1, 5.4, 5.5, 6.2, 6.3
Surface temperature	4.2, 4.13, 5.2, 5.3, 5.6, 5.10
Electrical safety	5.9
Cleanability	4.5, 4.6, 4.10, 4.12, 4.15
Maximum operating pressure (applicable only where the appliance is fitted with a boiler)	4.2, 5.7, 5.8
Flue gas temperature	6.2
Mechanical resistance (to carry a chimney/flue)	4.2, 4.3
Thermal output/Energy efficiency	6.1, 6.4 to 6.10, 6.12

### 9.3 Factory production control (FPC)

#### 9.3.1 General

The manufacturer shall establish, document and maintain a permanent FPC system and identify areas of responsibility to ensure that the products placed on the market conform with the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product and shall comply with the requirements specified in 9.3.2 to 9.3.8.

NOTE A permanent FPC system conforming to the requirements of either EN ISO 9001 or an otherwise equivalent system and made specific to the requirements of this standard is considered to satisfy the above requirements.

The manufacturer shall carry out FPC tests to monitor the conformity of the product. Sampling, testing or assessment shall be undertaken in accordance with ISO 2859 (all parts). The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded.

#### 9.3.2 Raw materials and components

The specifications of all incoming raw materials and components shall be appropriate for the intended use and shall be documented, as shall the inspection and testing scheme for ensuring the conformity of these materials and components.

#### 9.3.3 Control of inspection, measuring and test equipment

All weighing, measuring and testing equipment used to demonstrate conformance of the product shall be calibrated and regularly inspected according to documented procedures, frequencies and criteria.

#### 9.3.4 Process control

The manufacturer shall identify and plan the production processes, which directly affect the product characteristics and shall ensure that these processes are carried out under controlled conditions. Where the required product characteristics cannot be fully verified by subsequent inspection and testing of the product, then the production processes shall be carried out by operators specifically trained to undertake this work.