



**SLOVENSKI STANDARD**  
**SIST EN 777-2:1999/A2:2002**  
**01-april-2002**

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GhfcdbUWj bUgYj UUn`j Y `d`]bg\_]a ][ cf]`b\_]`nU`bYghUbcj Ub`g\_Y`dfcghcfY`E`&`XY.  
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Multi-burner gas-fired overhead radiant tube heater systems for non-domestic use - Part 2: System E, safety

Gasgeräte-Heizstrahler - Dunkelstrahlersysteme mit mehreren Brennern mit Gebläse für gewerbliche und industrielle Anwendung - Teil 2: System E, Sicherheit

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(g)bruleurs utilisant les combustibles gazeux a usage non domestique - Partie 2: Systeme E, sécurité

[SIST EN 777-2:1999/A2:2002](https://standards.iteh.ai/catalog/standards/sist/620d2c99-60c4-4f97-9221-ca565cc7ac/sist-en-777-2-1999-a2-2002)

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**Ta slovenski standard je istoveten z: EN 777-2:1999/A2:2001**

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**ICS:**

97.100.20

**SIST EN 777-2:1999/A2:2002**

**en**

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ICS 97.100.20

English version

## Multi-burner gas-fired overhead radiant tube heater systems for non-domestic use - Part 2: System E, safety

Tubes radiants suspendus à multi-brûleurs utilisant les combustibles gazeux à usage non domestique - Partie 2: Système E, sécurité

Gasgeräte-Heizstrahler - Dunkelstrahlersysteme mit mehreren Brennern mit Gebläse für gewerbliche und industrielle Anwendung - Teil 2: System E, Sicherheit

This amendment A2 modifies the European Standard EN 777-2:1999; it was approved by CEN on 9 June 2001.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

**Foreword**

This Amendment EN 777-2:1999/A2:2001 to EN 777-2:1999 has been prepared by Technical Committee CEN/TC 180 "Non-domestic gas-fired overhead radiant heaters", 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 January 2002, and conflicting national standards shall be withdrawn at the latest by January 2002.

This Amendment to the European Standard EN 777-2:1999 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).

This Amendment modifies EN 777-2:1999. It has been prepared to incorporate the general amendments to EN 777-2:1999 and EN 437:1993 + A1:1997 + A2:1999.

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.

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## Contents

Delete annex E:

'Annex E (normative) Extract from prEN 50165:1995 'Electrical equipment of non-electrical heating appliances for household and similar purposes. Safety requirements'.

Re-letter annex F and annex G as follows :

"Annex E (informative) Identification of the types of gas in use in the various countries  
Annex F (normative) Special national conditions"

Re-letter annex H and annex I as follows :

"Annex G (informative) Example of calculation of the weighing factors for an appliance with several rates  
Annex H (informative) Calculation of conversions of NO<sub>x</sub>"

Add the following annex I :

Annex I (informative) National situations of countries whose national bodies are CEN associate members".

## Foreword

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Replace the final paragraph by the following:

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'The test gases, test pressures and appliance categories given in this European Standard are in accordance with those specified in EN 437:1993 + A1:1997 + A2:1999 'Test gases - Test pressures - Appliance categories.

## 1 Scope

In paragraph 1, reword the text in parenthesis as follows:

'.... (called system E and referred to in the body of the text as the "system").....'.

## 2 Normative references

Amend the reference to EN 257 and EN 437 as follows:

'EN 257:1992+A1:1996 Mechanical thermostats for gas-burning appliances

EN 437: 1993 + A1:1997 + A2:1999 Test gases – Test pressures – Appliance categories'.

Amend the reference to prEN 50165 as follows:

'EN 50165:1997/A1:2001 Electrical equipment of non-electrical heating appliances for household and similar purposes. Safety requirements; Amendment 1'.

Add the following reference:

'ISO 7005-1: 1992 Metallic flanges - Part 1: Steel flanges'.

Delete the following references:

'EN 60730-1:1995 and EN 61058-1:1992'.

### 3 Definitions

In definitions 3.3.1, 3.3.2, 3.3.3, and 3.3.4 replace:

'[EN 437:1993]' by '[EN 437:1993 + A2:1999]'.

In definition 3.3.3, reword the title and unit to the following:

'Volume flow rate

Unit: cubic metre per hour (m<sup>3</sup>/h), litre per minute (l/min), cubic decimetre per hour (dm<sup>3</sup>/h), or cubic decimetre per second (dm<sup>3</sup>/s)'.

Insert the following definition after 3.3.13:

'3.3.14

extinction safety time

the time which elapses between the moment when the supervised flame is extinguished and the moment when the automatic burner control system initiates shut-down of the burner by removing power to the automatic gas shut-off valves'

Amend the definition numbers as follows (the definitions are to be retained):

'3.3.15 start-gas flame

3.3.16 running condition of the system

3.3.17 controlled shut-down

3.3.18 safety shut-down

3.3.19 lock out

3.3.19.1 non-volatile lock-out

3.3.19.2 volatile lock-out

3.3.20 spark restoration

3.3.21 automatic re-cycling'

In definitions 3.4.1, 3.4.3, 3.4.4, 3.4.5, 3.4.6 and 3.4.7 replace:

'[EN 437:1993]' by '[EN 437:1993 + A2:1999]'.

*In the first line of definition 3.4.1, add*

'complete' before 'combustion'.

*Reword definition 3.5.3 to read:*

'a condition of the installation required for some tests and obtained by heating to thermal equilibrium at nominal heat input'.

### 5.1.6 Inlet connections

*Reword indent e) to read:*

'e) a flange to ISO 7005-1:1992, ISO 7005-2:1988 or ISO 7005-3:1988.'

### 5.1.8 Electrical equipment

*Replace paragraphs 1 and 2 by the following paragraph:*

'The electrical equipment of the system shall be so designed and constructed as to obviate hazards of electrical origin and shall comply with the requirements of EN 50165:1997/A1:2001 which cover such hazards.'

### 5.2.12.3 Pre-purging

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*Reword paragraph 2 to read:* <https://standards.iteh.ai/catalog/standards/sist/620d2c99-60c4-4f97-9221-ea35b5ece7ae/sist-en-777-2-1999-a2-2002>

'Under the test conditions described in 7.2.2, the purge period shall be at least 10 s.'

### 7.1.1 Characteristics of test gases: reference and limit gases

*In paragraph 2, replace:*

'EN 437:1993' by 'EN 437:1993+ A2:1999'.

### 7.1.4 Test pressures

*In paragraph 2, in parenthesis replace:*

'annex G' by 'annex F' and add 'and annex I for national situations of countries whose national bodies are CEN associate members.'

Table 6 Test pressures where a pressure couple exists

*In footnote 2) replace:*

'annex G' by 'annex F'.

### 7.1.5.1 Tests requiring the use of reference gas

*In the first sentence, delete*

'7.3.3,'.

### 7.4.1 General

*In the definition for  $NO_{x,m}$ , in the note, replace:*

'annex I' by 'annex H'.

### 7.4.2.3 Systems with several rates

*In the final paragraph in parenthesis, replace:*

'annex H' by 'annex G' and 'annex I' by 'annex H'.

### Table 8 Symbol of the type of gas

*In the list of first family gases, delete:*

'G 140 1d'.

### 8.1.5.2 Type of gas

*In the final paragraph replace:*

'annex F' by 'annex E'.

### 8.1.5.5 Category

*Replace:*

'EN 437:1993' by 'EN 437:1993 + A2:1999'.

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Table B.1.1 Single categories marketed

Replace the table by the following table:

Table B.1.1 — Single categories marketed

Country	I <sub>2H</sub>	I <sub>2L</sub>	I <sub>2E</sub>	I <sub>2E+</sub>	I <sub>3B/P</sub>	I <sub>3+</sub>	I <sub>3P</sub>	I <sub>3B</sub>
AT	X				X			
BE				X		X	X	
CH	X				X	X	X	
CZ	X				X		X	
DE			X		X		X	
DK	X				X			
ES	X					X	X	X
FI	X				X			
FR	X <sup>2)</sup>	X <sup>2)</sup>		X	X <sup>1)</sup>	X	X	
GB	X					X	X	X
GR	X					X	X	X
IE	X					X	X	X
IS								
IT	X					X		
LU			X					
NL	X <sup>2)</sup>	X			X		X	
NO					X			
PT	X					X	X	X
SE	X				X			

<sup>1)</sup> Categories applicable only to certain types of system specified in the individual standards. (France to specify).

<sup>2)</sup> Categories applicable only to certain types of system, submitted to on site EC verification procedure, Annex II article 6 of the Gas Appliance Directive (90/396/EE). (France and Netherlands to clarify if applicable here).

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Table B.1.2 Double categories marketed

Replace the table by the following table:

Table B.1.2 — Double categories marketed

Country	II <sub>1a2H</sub>	II <sub>2H3B/P</sub>	II <sub>2H3+</sub>	II <sub>2H3P</sub>	II <sub>2L3B/P</sub>	II <sub>2L3P</sub>	II <sub>2E3B/P</sub>	II <sub>2E+3B/P</sub>	II <sub>2E+3+</sub>	II <sub>2E+3P</sub>
AT		X								
BE										
CH	X	X	X	X						
CZ		X		X						
DE							X			
DK	X	X								
ES	X		X <sup>3)</sup>	X						
FI		X								
FR				X <sup>2)</sup>		X <sup>2)</sup>		X <sup>1)</sup>	X	X
GB			X	X						
GR		X	X	X						
IE			X	X						
IS										
IT	X		X							
LU										
NL					X	X				
NO										
PT			X	X						
SE	X	X								

<sup>1), 2)</sup> See notes to Table B.1.1.

<sup>3)</sup> Systems of this category set for group H gases of the second family may use air and commercial propane gas mixtures where the gross Wobbe index (at 15° C and 1 013, 25 mbar) is between 46 MJ/m<sup>3</sup> and 51,5 MJ/m<sup>3</sup>, at the same supply pressure, without additional tests.

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Table B.2 – Normal supply pressures

Replace the table by the following table:

Table B.2 – Normal supply pressures

Gas	G 110	G 20	G 25		G 20 + G 25	G 30		G 31			G 30 + G 31	
			20	25		30	50	30	37	50	Couple 28-30/37	Couple 50/67
Pressure (mbar)	8	20	20	25	Couple 20/25	30	50	30	37	50	Couple 28-30/37	Couple 50/67
Country												
AT		X					X			X		
BE					X				X	X <sup>2)</sup>	X	X
CH	X	X					X			X	X	
CZ		X <sup>3)</sup>					X <sup>4)</sup>	X	X	X <sup>5)</sup>		
DE		X	X			X	X			X		
DK	X	X						X				
ES	X	X				X			X	X <sup>2)</sup>	X	
FI		X				X		X				
FR					X	X	X <sup>2)</sup>		X	X <sup>2)</sup>	X	
GB		X <sup>1)</sup>				X			X	X	X	
GR		X				X		X	X	X	X	
IE		X				X			X		X	
IS						X						
IT	X	X									X	
LU		X										
NL				X				X		X		
NO						X		X				
PT		X				X			X		X	
SE	X	X				X		X				

<sup>1)</sup> Normal supply pressure for this system 17,5 mbar.  
<sup>2)</sup> Only for certain types of non-domestic system. (Countries to clarify).  
<sup>3)</sup> Currently 18 mbar.  
<sup>4)</sup> For certain types of industrial systems. (CZ to clarify).  
<sup>5)</sup> For certain types of system. (CZ to clarify).