

საქართველოს ეროვნული სტანდარტი

არა-საყოფასოფრებო დანიშნულების მრავალ სანთურიანი აირზე მომუშავე
გელა რაღიაშვილი მიღების ბათუბის სისტემები. ნაწილი 3. სისტემა F,
უსაფრთხოება

საქართველოს სტანდარტების, ტექნიკური რეგლამენტების
და მეტროლოგიის ეროვნული სააგენტო
თბილისი

საინფორმაციო მონაცემები

1 შემუშავებულია საქართველოს სტანდარტების, ტექნიკური რეგლამენტების და მეტროლოგიის ეროვნული სააგენტოს სტანდარტებისა და ტექნიკური რეგლამენტების დეპარტამენტის მიერ

2 დამტკიცებულია და შემოღებულია სამოქმედო საქართველოს სტანდარტების, ტექნიკური რეგლამენტების და მეტროლოგიის ეროვნული სააგენტოს 2009 წლის 9 ნოემბრის №48 “ს” განკარგულებით

3 მიღებულია გარეკანის მეთოდით სტანდარტიზაციის საერთაშორისო ორგანიზაციის სტანდარტი ISO 777-3 : 2009 „არა-საყოფაცხოვრებო დანიშნულების მრავალსანთურიანი აირზე მომუშავე ზედა რადიაციული მილების გათბობის სისტემები. ნაწილი 3. სისტემა F, უსაფრთხოება”

4 პირველად

5 რეგისტრირებულია საქართველოს სტანდარტების, ტექნიკური რეგლამენტების და მეტროლოგიის ეროვნული სააგენტოს რეესტრში: 2009 წლის 9 ნოემბერი №268-1.3-3380

წინამდებარე სტანდარტის სრული ან ნაწილობრივი აღწარმოება, გირაჟირება და გავრცელება საქართველოს სტანდარტების, ტექნიკური რეგლამენტების და მეტროლოგიის ეროვნული სააგენტოს ნებართვის გარეშე არ დაიშვება

English Version

Multi-burner gas-fired overhead radiant tube heater systems for non domestic use - Part 3: System F - Safety

Tubes radiants suspendus à multi-brûleurs utilisant les
combustibles gazeux à usage non-domestique - Partie 3 :
Système F - Sécurité

Dunkelstrahlersysteme mit mehreren Brennern mit Gebläse
für gewerbliche und industrielle Anwendung - Teil 3:
System F - Sicherheit

This European Standard was approved by CEN on 24 January 2009.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard 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 CEN Management Centre has the same status as the official versions.

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



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
3.1 System and its constituent parts	6
3.2 Adjusting, control and safety devices	9
3.3 System operation	10
3.4 Gases	13
3.5 Conditions of operation and measurement	14
3.6 Country of destination	14
4 System classification	15
4.1 Classification according to the nature of the gases used (categories)	15
4.2 Classification according to the gases capable of being used	15
4.3 Classification according to the mode of evacuation of the combustion products	17
5 Constructional requirements	17
5.1 General	17
5.2 Requirements for adjusting, control and safety devices	22
5.3 Ignition devices	27
5.4 Main burners	28
5.5 Pressure test points	28
5.6 Injectors	28
6 Operational requirements	29
6.1 Soundness	29
6.2 Heat inputs	29
6.3 Limiting temperatures	29
6.4 Ignition, cross-lighting and flame stability	30
6.5 Pressure regulator	30
6.6 Combustion	30
6.7 Air-proving device in the common duct	31
6.8 Prolonged performance	31
6.9 Measurements of oxides of Nitrogen, NO _x	32
7 Test methods	32
7.1 General	32
7.2 Construction and design	39
7.3 Safety of operation	39
7.4 Other pollutants	52
8 Marking and instructions	55
8.1 Marking of the system and the packaging	55
8.2 Instructions	59
8.3 Presentation	63
9 Evaluation of conformity of POCEDs and their associated terminals	63
9.1 General	63
9.2 Type testing	63
9.3 Factory production control (FPC)	64
Annex A (informative) National situations	66
A.1 General	66
A.2 Categories listed in the body of the standard and marketed in different countries	66

A.3	Appliance supply pressures corresponding to the categories given in A.2	68
A.4	Special categories marketed nationally or locally	70
A.5	Test gases corresponding to the special categories given in A.4	74
A.6	Gas connections in the various countries	75
A.7	Flue connections in the various countries	77
Annex B	(informative) System F	78
Annex C	(informative) Equivalence rules	79
C.1	Conversion to categories within a restricted Wobbe Index range	79
C.2	Conversion to categories within an identical Wobbe Index range	79
C.3	Conversion to categories within a wider Wobbe Index range	80
Annex D	(informative) Calculation of the mass flow rate of flue gases	81
D.1	Flue gas mass flow rate	81
D.2	Quantity of air in the flue gas	81
D.3	Flue gas excess air ratio (λ)	82
D.4	Quantity of water vapour in the flue gas	82
D.5	Quantity of Nitrogen in the flue gas	82
D.6	Quantity of Oxygen in the flue gas	82
D.7	Dry quantity of flue gas	83
D.8	Quantity of carbon dioxide in the flue gas	83
Annex E	(informative) Identification of gas types in use in various countries	85
Annex F	(normative) Special national conditions	86
F.1	General	86
Annex G	(informative) Calculation example of the weighting factors for a system with several rates	87
G.1	Appliance rates	87
G.2	Weighting of $Q_{pi,\%} = 20$	87
G.3	Weighting of $Q_{pi,\%} = 40$	87
G.4	Weighting of $Q_{pi,\%} = 60$	87
G.5	Weighting of $Q_{pi,\%} = 70$	88
G.6	Total weighting	88
Annex H	(informative) NO_x conversion calculation	89
H.1	NO_x emission conversion factors	89
H.2	NO_x Conversion — Calculation	90
Annex I	(informative) National situations of countries whose national bodies are CEN associate members	92
Annex J	(informative) An example of sampling plans	93
J.1	Sampling plans	93
J.2	Inspection levels and procedures	94
Annex K		95
K.1	General conditions of test	95
K.2	Test conditions	95
K.3	Test procedure	95
K.4	Accuracy of measurement	97
K.5	Calculation of Flue Loss	97
Annex ZA	(informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives	100
Annex ZB	(informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive	103
ZB.1	Scope and relevant characteristics	103
ZB.2	Procedure(s) for attestation of conformity of [construction products]	105
ZB.3	CE marking and labelling	108
Bibliography		110

Foreword

This document (EN 777-3:2009) has been prepared by Technical Committee CEN/TC 180 “Domestic and non-domestic gas fired air heaters and non-domestic gas fired overhead radiant heaters”, the secretariat of which is held by AFNOR.

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 September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 777-3:1999.

This revision modifies EN 777-3:1999. It has been prepared to incorporate requirements for combustion products evacuation ducts, POCEDs, supplied as an integral part of the system to support the EU Directive 89/106/EEC on construction products under mandate M/105. To this end the systems within the scope of this standard are now defined as Type B_{52x} and Type B_{53x} rather than Type B_{22x} and Type B_{23x}.

Furthermore, the opportunity presented by this revision has been taken to update the standard in respect to EN 437:2003.

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 EC Directive(s).

For relationship with EC Directive(s), see informative Annexes ZA and ZB, which are integral parts 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, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.