

**Gaasiküttega otsetoime
kuumaõhupuhurid kasutamiseks
kasvuhoonete ja kõrvalruumide
kütmiseks**

Direct gas-fired hot air blowers for use in
greenhouses and supplementary non-domestic
space heating

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12669:2000 sisaldab Euroopa standardi EN 12669:2000 ingliskeelset teksti. Käesolev dokument on jõustatud 15.11.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 12669:2000 consists of the English text of the European standard EN 12669:2000. This document is endorsed on 15.11.2000 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This standard specifies the requirements and test methods for the safety of direct gas-fired hot air blowers for greenhouses, agriculturalized or supplementary space heating, hereinafter called appliances .	Scope: This standard specifies the requirements and test methods for the safety of direct gas-fired hot air blowers for greenhouses, agriculturalized or supplementary space heating, hereinafter called appliances .
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Võtmesõnad:

ICS 97.100.20

English version

**Direct gas-fired hot air blowers for use in greenhouses
and supplementary non-domestic space heating**

Générateurs-pulseurs d'air chaud à
chauffage direct utilisant les combus-
tibles gazeux pour les applications
horticoles et le chauffage d'appoint
des locaux à usage non-domestique

Direkt gasbefeuerte Heißluftgebläse
für Gewächshäuser und als Zusatz-
heizung von nicht-häuslichen
Räumen

This European Standard was approved by CEN on 1999-12-03.

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 Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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CONTENTS

	Page
FOREWORD	5
1 SCOPE.....	6
2 NORMATIVE REFERENCES	6
3 DEFINITIONS.....	7
3.1 APPLIANCE AND ITS CONSTITUENT PARTS	7
3.2 ADJUSTING, CONTROL AND SAFETY DEVICES	8
3.3 OPERATION OF THE APPLIANCE.....	9
3.4 GASES	11
3.5 CONDITIONS OF OPERATION AND MEASUREMENT	12
3.6 COUNTRY OF DESTINATION	12
3.7 CLASSIFICATION.....	13
3.7.1 Classification of gases	13
3.7.2 Classification of appliances	13
4 CONSTRUCTION AND DESIGN REQUIREMENTS	15
4.1 GENERAL.....	15
4.1.1 Conversion to different gases.....	15
4.1.2 Materials and method of construction	16
4.1.3 Accessibility for maintenance and use	16
4.1.4 Thermal insulation.....	16
4.1.5 Gas connection	17
4.1.6 Soundness of the gas circuit.....	17
4.1.7 Supply and distribution of air	17
4.1.8 Checking the state of operation	17
4.1.9 Electrical equipment	18
4.1.10 Operational safety in the event of fluctuation, interruption, and restoration of the auxiliary energy	18
4.1.11 Motors and fans	18
4.2 ADJUSTING, CONTROL AND SAFETY DEVICES	18
4.2.1 General	18
4.2.2 Gas rate adjusters and range-rating devices.....	19
4.2.3 Aeration adjusters.....	19
4.2.4 Manual controls.....	19
4.2.5 Governors	20
4.2.6 Multifunctional controls.....	20
4.2.7 Flame supervision devices	20
4.2.8 Automatic shut-off valves.....	20
4.2.9 Automatic burner control systems.....	21
4.2.10 Gas strainers.....	21
4.2.11 Air strainers and filters	22
4.3 IGNITION DEVICES	22
4.3.1 General	22
4.3.2 Ignition device for the main burner	22
4.3.3 Ignition burners	22
4.4 COMBUSTION AND DILUTION AIR, PRE-PURGE AND POST-PURGE	22
4.5 FLAME SUPERVISION SYSTEM	23
4.5.1 Appliances with non-automatic burner systems.....	23
4.5.2 Appliances with automatic burner systems	23
4.6 START-GAS FLAME ESTABLISHMENT	24
4.6.1 Appliances with non-automatic burner systems.....	24
4.6.2 Appliances with automatic burner systems	24
4.7 MAIN FLAME ESTABLISHMENT.....	24
4.7.1 Establishment by means of a start gas flame	24
4.7.2 Direct establishment of the main flame.....	25
4.8 MAIN BURNER	25
4.9 FACILITY FOR REMOTE CONTROL.....	25

4.10	THERMOSTATS AND CONTROL OF AIR TEMPERATURE	25
4.10.1	General	25
4.10.2	Control of delivered air temperature	25
4.10.3	Overheat cut-off device	25
4.10.4	Sensors	25
4.11	GAS PRESSURE TEST POINTS	26
4.12	FACILITIES FOR COMMISSIONING AND TESTING	26
4.12.1	General	26
4.12.2	Appliances having reduced start gas rates	26
4.13	ADDITIONAL REQUIREMENTS FOR APPLIANCES DESIGNED FOR PERMANENT OUTDOOR INSTALLATION OR WHERE AUTOMATIC IRRIGATION SYSTEMS ARE USED	27
4.13.1	General	27
4.13.2	Air inlets (outdoor appliances)	27
4.13.3	Access panels and doors	27
4.13.4	Dimensions of openings	27
4.13.5	Fixing screws	27
5	OPERATIONAL REQUIREMENTS	27
5.1	SOUNDNESS OF THE GAS CIRCUIT	27
5.2	HEAT INPUTS	27
5.2.1	Nominal heat input	27
5.2.2	Start gas heat input	27
5.2.3	Effectiveness of gas rate adjusters	28
5.2.4	Effectiveness of the gas governor	28
5.2.5	Effectiveness of the range-rating device	28
5.3	LIMITING TEMPERATURES	28
5.3.1	Temperatures of parts that have to be touched during normal use	28
5.3.2	Temperatures of the appliance casing	28
5.3.3	Component temperatures	28
5.3.4	Fan motor winding temperatures	28
5.3.5	Maximum temperature of the delivered air	29
5.4	IGNITION, CROSS-LIGHTING, FLAME STABILITY	29
5.4.1	Ignition and cross-lighting	29
5.4.2	Flame stability	29
5.5	COMBUSTION	29
5.5.1	Appliances designed to be used in greenhouses	29
5.5.2	Other appliances	29
5.5.3	Combustion air proving device(s)	29
5.5.4	CO ₂ safety device	30
5.5.5	Auxiliary energy variations	30
5.6	OVERHEAT CUT-OFF DEVICE	30
5.7	WATER RESISTANCE	30
6	TEST METHODS	30
6.1	GENERAL	30
6.1.1	Characteristics of test gases: reference and limit gases	30
6.1.2	Conditions for preparation of the test gases	30
6.1.3	Practical application of test gases	33
6.1.4	Test pressures	35
6.1.5	Test procedures	36
6.1.6	General test conditions	36
6.2	CONSTRUCTION AND DESIGN	37
6.2.1	Automatic burner control systems (manually operated devices)	37
6.2.2	Ignition opening time	37
6.2.3	Ignition of the ignition burner with the downstream main gas automatic shut-off valve open	37
6.2.4	Combustion air proving device(s)	38
6.3	SAFETY OF OPERATION	38
6.3.1	Soundness of the gas circuit	38
6.3.2	Heat inputs	38
6.3.3	Limiting temperatures	40
6.3.4	Ignition, cross-lighting and flame stability	44

6.3.5	Combustion	45
6.3.6	Overheat cut-off device	46
6.3.7	Water resistance	47
7	MARKING AND INSTRUCTIONS	50
7.1	GENERAL	50
7.2	DESCRIPTION	50
7.3	DATA PLATE AND LABELLING	50
7.4	OTHER MARKING	51
7.5	MARKING ON THE PACKAGING	51
7.6	UTILIZATION OF SYMBOLS ON THE APPLIANCE AND PACKAGING	51
7.6.1	Electrical supply	51
7.6.2	Type of gas	51
7.6.3	Gas supply pressure	52
7.6.4	Country of destination	52
7.6.5	Category	53
7.6.6	Other information	53
7.7	INSTRUCTIONS	54
7.7.1	General	54
7.7.2	Technical instructions for installation and adjustment	55
7.7.3	Instructions for conversion	56
7.7.4	Instructions for servicing	56
7.7.5	Instructions for use and maintenance	56
7.7.6	Presentation	56
	ANNEX A (INFORMATIVE) NATIONAL SITUATIONS	56
A.1	CATEGORIES LISTED IN THE BODY OF THE STANDARD AND MARKED IN THE DIFFERENT COUNTRIES	57
A.2	APPLIANCE SUPPLY PRESSURES CORRESPONDING TO THE CATEGORIES GIVEN IN A.1	59
A.3	SPECIAL CATEGORIES MARKED NATIONALLY OR LOCALLY	60
A.4	TEST GASES AND TEST PRESSURES CORRESPONDING TO THE SPECIAL GASES GIVEN IN A.3	64
A.5	GAS CONNECTIONS IN THE VARIOUS COUNTRIES	66
	ANNEX B (INFORMATIVE) GUIDANCE FOR LIMITATIONS OF APPLICATION OF DIRECT-FIRED AIR HEATERS IN BUILDINGS	67
B.1	GENERAL PRINCIPLES	67
B.2	SAFE OPERATING EMISSION LEVELS	67
B.3	ASSESSMENT OF CONCENTRATIONS	67
B.4	CASE STUDIES	68
	ANNEX C (INFORMATIVE) A-DEVIATIONS	71
	ANNEX D (NORMATIVE) SPECIAL NATIONAL CONDITIONS	71
	ANNEX ZA (INFORMATIVE) CLAUSES OF THIS EUROPEAN STANDARD ADDRESSING REQUIREMENTS OR PROVISIONS OF EU DIRECTIVES	72

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 179 "Gas-fired air heaters", the secretariat of which is held by NNI.

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 December 2000, and conflicting national standards shall be withdrawn at the latest by December 2000.

This European Standard 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(s), see informative Annex ZA, which is an integral part of this standard.

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.

The Directive makes no specification in respect of the maximum rating of the appliances falling within its scope. However, the scope of this standard has been limited to appliances having heat inputs not exceeding 180 kW.

The reasons for this are:

- due to the intended application for such appliances whereby they will be installed to heat only one room or space, present practice indicates that the limit stated is adequate for the purpose.
- appliances sized up to 180 kW constitute the major market share.

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.

NOTE For countries requesting special categories (specified in EN 437:1993 + A1:1997), the absence of specific information concerning A.3.3 and A.3.4 implies that the general requirements described in the body of the standard (clauses 4.1.1, 4.2.2, 4.2.3 and 4.2.5) also apply to these special categories.

No specific requirements concerning the rational use of energy have been included in this standard since the design of non-domestic direct gas-fired forced convection air heaters is such that all the heat generated by combustion of the gas is transferred directly into the heated space.

Other European Standards covering gas-fired air heaters are as follows.

EN 525	Non-domestic direct gas fired forced convection air heaters for space heating not exceeding a net heat input of 300 kW
EN 621	Non-domestic gas-fired forced convection air heaters for space heating not exceeding a net heat input of 300 kW, without a fan to assist transportation of combustion air and/or combustion products
EN 778	Domestic gas-fired forced convection air heaters for space heating not exceeding a net heat input of 70 kW, without a fan to assist transportation of combustion air and/or combustion products
EN 1020	Non-domestic gas-fired forced convection air heaters for space heating not exceeding a net heat input of 300 kW, incorporating a fan to assist transportation of combustion air and/or combustion products
EN 1196	Domestic and non-domestic gas-fired air heaters - Supplementary requirements for condensing air heaters
EN 1319	Domestic gas-fired forced convection air heaters for space heating, with fan-assisted burners not exceeding a net heat input of 70 kW

1 Scope

This European Standard specifies the requirements and test methods for the safety of direct gas-fired hot air blowers for greenhouses, agriculturalized or supplementary space heating, hereinafter called "appliances".

"Supplementary" in this standard means to make up a deficiency, i.e. for the temporary heating of spaces intended for agricultural or commercial use:

- workshops, sheds, stables, poultry houses, barns, cattle pens, etc.
- factories, workshops, warehouses, storage sheds, mills, hangers, drying of buildings, temporary site accommodation, etc.

This standard applies to appliances of type A₃ with heat input 180 kW or less, based on the net calorific value, fitted with integral burners, including appliances designed for outdoor installation. Provision of the heated air will be directly into the heated space.

This standard does not apply to:

- appliances intended for use in residential dwellings;
- appliances fitted with gas boosters;
- appliances fitted with air/gas ratio controls;
- appliances fitted with forced draught package burners;
- appliances which incorporate a main burner having more than one section under a common burner control, of which one or more sections may be extinguished whilst another section remains in operation;
- mobile and transportable dedicated LPG appliances.

This standard does not cover the requirements relating to third family gas cylinders, their regulators and their connection.

This European Standard is applicable to appliances which are intended to be type tested.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 88:1991	Pressure governors for gas appliances for inlet pressures up to 200 mbar
EN 125:1991	Flame supervision devices for gas burning appliances - Thermo-electric flame supervision devices
EN 126:1995	Multifunctional controls for gas burning appliances
EN 161:1991	Automatic shut-off valves for gas burners and gas burning appliances + A1:1996 + A2:1997
EN 257:1992	Mechanical thermostats for gas-burning appliances
EN 298:1993	Automatic gas burner control systems for gas burners and gas burning appliances with or without fans
EN 437:1993 + A1:1997	Test gases - Test pressures - Appliance categories
EN ISO 3166-1:1997	Codes for the representation of names of countries and their subdivisions - Part 1: Country codes (ISO 3166-1:1997)
EN 50165:1997	Electrical equipment of non-electric heating appliances for household and similar purposes - Safety requirements
EN 60335-1:1988	Safety of household and similar electrical appliances - Part 1: General requirements
EN 60529:1991	Degrees of protection provided by enclosures (IP code)

EN 60584-1:1995	Thermocouples - Part 1: Reference tables (IEC 584-1:1995)
EN 60584-2:1993	Thermocouples - Part 2: Tolerances (IEC 584-2:1982 + A1:1989)
EN 60730-1:1992	Automatic electrical controls for household and similar use - Part 1: General requirements
EN 60730-2-1:1992	Automatic electrical controls for household and similar use - Part 2: Particular requirements for electrical controls for electrical household appliances
EN 60730-2-9:1995	Automatic electrical controls for household and similar use - Part 2: Particular requirements for temperature-sensing controls
EN 60742:1995	Isolating transformers and safety isolating transformers – Requirements (IEC 60742:1983 + A1:1992, modified)
EN 61058-1:1992	Switches for appliances - Part 1: General requirements
ISO 7-1:1994	Pipe threads where pressure-tight joints are made on the threads - Part 1: Dimensions, tolerances and designation
ISO 228-1:1994	Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation
ISO 6976:1995	Natural gas – Calculation of calorific values, density, relative density and Wobbe index from composition
ISO 7005-1:1992	Metallic flanges - Part 1: Steel flanges
ISO 7005-2:1988	Metallic flanges - Part 2: Cast iron flanges
ISO 7005-3:1988	Metallic flanges - Part 3: Copper alloy and composite flanges

3 Definitions

For the purposes of this standard the following definitions apply:

3.1 Appliance and its constituent parts

3.1.1 non-domestic air heater: An appliance designed for the heating and/or ventilation of a building other than a residential dwelling.

3.1.2 forced convection air heater: An appliance designed to provide space heating from a central source by distributing heated air, by means of an air moving device, either through ducting or directly into the heated space.

3.1.3 direct gas-fired hot air blower: A non-domestic direct gas-fired forced convection air heater in which the products of combustion mix with the heated air being supplied to the space without any kind of ducting of the delivered air directly connected to the appliance.

3.1.4 gas inlet connection: The part of the appliance intended to be connected to the gas supply.

3.1.5 mechanical joint; mechanical means of obtaining soundness: A means of assuring the soundness of an assembly of several (generally metallic) parts without the use of liquids, pastes, tapes, etc.

There are, for example:

- metal to metal joints;
- conical joints;
- toroidal sealing rings ("O" rings);
- flat joints.

3.1.6 gas circuit: The part of the appliance that conveys or contains the gas between the appliance gas inlet connection and the burner(s).

3.1.7 restrictor: A device with an orifice which is placed in the gas circuit so as to create a pressure drop and thus reduce the gas pressure at the burner to a predetermined value for a given supply pressure and rate.