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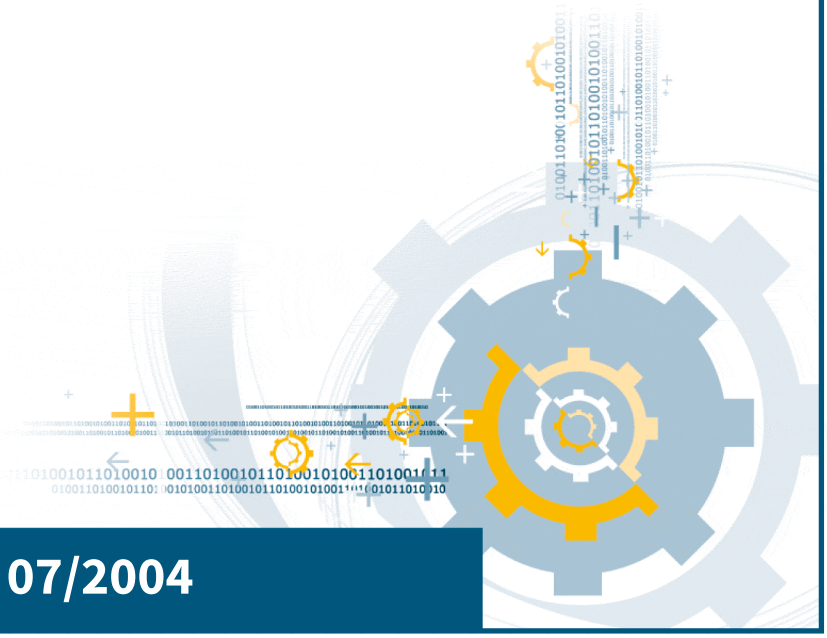

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National Foreword

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13842

July 2004

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English version

Oil fired forced convection air heaters - Stationary and transportable for space heating

Générateurs d'air chaud à convection forcée fonctionnant au fioul domestique - Fixes et transportables pour le chauffage des locaux

Ölbefeuerte Warmlufterzeuger - Ortsfest und ortsbeweglich für die Raumheizung

This European Standard was approved by CEN on 13 May 2004.

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Foreword

This document (EN 13842:2004) has been prepared by Technical Committee CEN/TC 57 “Central heating boilers”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2005, and conflicting national standards shall be withdrawn at the latest by January 2005.

This document includes a Bibliography.

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.

1 Scope

This document specifies the requirements and test methods for the safety and efficiency of oil-fired air heaters using only forced draught oil burners, hereafter referred to as “appliances”.

This document applies to stationary and portable appliances. It also applies to appliances intended for outdoor installation. Provision of the heated air may be by means of ducting or may be directly into the heated space.

For the purpose of this document the heat generation is by the combustion of liquid fuel oils as defined in EN 267 (gas oil with a viscosity at the burner inlet of 1,6 mm²/s (cSt) up to 6 mm²/s (cSt) at 20 °C). Alternatively, if the manufacturer requests, the fuel of kerosene may be used as defined in EN 304. Kerosene with a viscosity at the burner of 1,3 mm^2/s (cSt) to 2,9 mm^2/s (cSt) at 20 °C) or other suitable liquid fuel oils may also be used.

This document does not apply to:

— appliances intended for use in a single unit residential dwelling;

— appliances of the condensing type;

— appliances with atmospheric burners without a fan to assist the transportation of combustion air;

— dual purpose air conditioning appliances (heating and cooling);

— appliances where the air is heated by an intermediate fluid;

— appliances fitted with manual or automatic flue dampers;

— appliances having multiple heating units with a single flue;

— appliances fitted with more than one flue outlet.

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

NOTE Requirements for appliances which are not type tested would need to be subject to further consideration.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 230, *Monobloc oil burners — Safety, control and regulation devices and safety times.*

EN 267, *Forced draught oil burners — Definitions, requirements, testing, marking.*

EN 304:1992, *Heating boilers — Test code for heating boilers for atomizing oil burners.*

prEN 50156-1, *Electrical equipment for furnaces and ancillary equipment — Part 1: Requirements for application design and installation.*

EN 60335-1:2002, *Household and similar electrical appliances — Safety — Part 1: General requirements (IEC 60335-1:2001, modified).*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989*).

EN 60730-2-1, *Automatic electrical controls for household and similar use — Part 2: Particular requirements for electrical controls for electrical household appliances (IEC 60730-2-1:1989, modified).*

EN 60730-2-9, *Automatic electrical controls for household and similar use — Part 2-9: Particular requirements for temperature sensing controls (IEC 60730-2-9:2000, modified).*

EN ISO 1182:2002, *Reaction to fire tests for building products - Non-combustibility test (ISO 1182:2002)*.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Appliance and its constituent parts

3.1.1
stationary air heater
fixed appliance designed for the heating and possibly ventilation of a building

3.1.2
forced convection air heater
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.

The appliance may consists of the following components:

— combustion chamber;

— heat exchanger;

— fan with drive motor;

— housing (casing);

— air control device;

— integrated oil burner or atomising oil burner of the monobloc-type according to EN 267.

The appliance may consist of several assemblies which are joined together

3.1.3
portable warm air heaters
appliance with a heat exchanger in accordance with 3.1.2 but designed to be portable or moveable. It may contain a built-in fuel tank

3.1.4
oil burner
burner that is intended to assure the thermal function of the appliance and is generally called the burner

3.1.5 Combustion products circuit

3.1.5.1
combustion chamber
enclosure inside which combustion of the air-fuel mixture takes place

3.1.5.2
heat exchanger
part of the appliance designed to transfer heat from the combustion products to the transport air

3.1.5.3
flue outlet
part of the appliance that connects with a flue to evacuate the products of combustion

3.2 Adjusting, control and safety devices

3.2.1
automatic burner control system
system comprising automatic start and stop sequencing flame detector device and flame supervision

NOTE See also EN 230

3.2.2
automatic shut-off valve
valve designed to open the fuel supply to the burner when energised and to close automatically when de-energised

3.2.3
control thermostat
device controlling the operation of the appliance (by on/off, high/low or modulating control) and enabling the temperature to be kept automatically, within a given tolerance, at a predetermined value

3.2.4
overheat cut-off device
device that shuts off and locks out the fuel supply to the burner when the temperature of the delivered air exceeds a certain pre-set value, and that requires manual intervention to restore the fuel supply. This should be before the appliance is damaged and/or before safety is put into question. This device is pre-set and sealed by the manufacturer (see 4.8.3.2)

3.2.5
fan delay control
control that starts and/or stops the air delivery fan when the temperature of the delivered air reaches a certain predetermined value

3.2.6
temperature sensing element; temperature sensor
component that detects the temperature of the environment to be supervised or controlled

3.2.7
modulating control
automatic control by which the heat input of the appliance can be varied in a continuous manner between the nominal heat input and a minimum value

3.2.8
high/low control
automatic control which permits an appliance to operate either at the nominal heat input or at a fixed reduced heat input

3.3 Operation of the appliance

3.3.1
volumetric flow rate
volume of fuel consumed by the appliance in unit time during continuous operation

Symbol: V

NOTE Litres per hour (l/h), cubic decimetres per hour (dm^3/h).