SLOVENSKI STANDARD
SIST EN 303-2:1997

01-marec-1997

Kotli za ogrevanje - Kotli z ventilatorskimi gorilniki - 2. del: Posebne zahteve za kotle z razprševalnimi oljnimi gorilniki

Heating boilers - Heating boilers with forced draught burners - Part 2: Special requirements for boilers with atomizing oil burners

Heizkessel - Heizkessel mit Gebläsebrenner - Teil 2: Spezielle Anforderungen an Heizkessel mit Ölzerstäubungsbrennern

Chaudieres de chauffage - Chaudieres avec bruleurs a air soufflé - Partie 2: Spécifications spéciales pour chaudiere avec bruleurs a fioul a pulvérisation

Ta slovenski standard je istoveten z: **EN 303-2:1992**

ICS:

91.140.10	Sistemi centralnega ogrevanja	Central heating systems

SIST EN 303-2:1997 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 303-2:1992

September 1992

UDC 697.326:001.4:620.1

Descriptors: Central heating, boilers, liquid fuel appliances, definitions, specification, equipment specifications, thermodynamic properties, tests, marking

English version

Heating boilers - Heating boilers with forced draught burners - Part 2: Special requirements for boilers with atomizing oil burners

Chaudières de chauffage - Chaudières avec brûleurs à air soufflé - Partie 2: Spécifications spéciales pour chaudière avec brûleurs à fioul à pulvérisation

Heizkessel - Heizkessel mit Gebläsebrenner - Teil 2: Spezielle Anforderungen an Heizkessel mit Ölzerstäubungsbrennern

This European Standard was approved by CEN on 1992-09-18. 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.

The European Standards exist 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Contents list

FOREWORD

This European Standard was drawn up by the Technical Committee CEN/TC 57 "Central heating boilers" of which the secretariat is held by DIN.

The following structure is intended for the Standards for heating boilers prepared by CEN/TC 57 :

* EN 303-1 : Heating boilers - Heating boilers with forced draught burners - Part 1: Terminology, general requirements, testing and marking
* EN 303-2 : Heating boilers - Heating boilers with forced draught burners - Part 2: Special requirements for boilers with atomizing oil burners
* : Heating boilers - Heating boilers with forced draught burners up to a heat output of 70 kW and an operating pressure of max. 3 bar - Terminology, special requirements, testing and marking (standard in preparation)
* EN 304 : Heating boilers - Test code for heating boilers for atomizing oil burners

This European Standard shall be given the status of national standard, either by publication of an identical text or by endorsement, at the latest by March 1993, and conflicting national standards shall be withdrawn at the latest by March 1993.

The Standard was approved and in accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1. Scope

1.1 This standard applies to heating boilers in accordance with EN 303 part 1 with atomizing oil burners in accordance with EN 267 up to a nominal heat output of 300 kW which are designed for operating with liquid fuels with a viscosity at the burner inlet of (5,5 + 0,5) mm^2/s at a temperature of 20°C and a density of 0,83 - 0,86 g/cm^3 at a temperature of 15°C and with kerosene with a viscosity of 1,3 to 2,9 mm^2/s at 20°C and a density of 0,77 to 0,80 g/cm^3 at 15°C.

The requirements of this standard apply to heating boilers which are tested on a test rig in accordance with the test code given in EN 304.

1.2 The purpose of this standard is to lay down the necessary heating technical requirements for heating boilers with liquid fuels.

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 267:	1991	Atomizing oil burners of monobloc type; testing
EN 303-1:	1992	Heating boilers; heating boilers with forced draught burners Part 1: Terminology, general requirements, testing and marking
EN 304:	1992	Heating boilers; test code for heating boilers for atomizing oil burners

3. Heating requirements

3.1 General

All the following performance tests are carried out using an oil atomising burner to EN267.

The boiler shall meet the requirements shown in Figure 1 to 3 for the nominal heat output or heat output range. Multi-stage or modulating burners shall operate within the output range of the boiler.
If the manufacturer states that the boiler also heats the room in which the boiler is installed, the output to the room shall be stated separately.

3.2 Boiler efficiency

The boiler efficiency shall not be less than the appropriate values in Figure 1 for the nominal heat output and/or range of outputs.
All measurement tolerances have been taken into account in establishing the values in Figure 1 and therefore no deviation when comparing test results may be claimed.

3.3 Draught requirements and gas side resistance

The gas side resistance and draught have to be determined during the test in accordance with Sections 3.1 and 3.2.

For boilers which operate with negative pressure in the combustion chamber, the values of draught requirements listed in Figure 2 are normally to be regarded as limits. They are also guide values for the dimensioning of the chimney.

For boilers which are operated with positive pressure in the combustion chamber, the values for the gas side resistance listed in Figure 3 are to be regarded as limits.

If these values of gas side resistance or draught requirements are exceeded reference shall be made to this in the technical literature.

3.4 Exit gas temperature

The exit gas temperature is to be determined in a measuring section and at nominal output/output range shall not exceed 220K above ambient temperature.

For boilers which, when operating at the nominal output or within their range of outputs have a flue gas temperature less than 160°C the boiler manufacturer shall make recommendations regarding the flue installation.

3.5 Emission values

During the tests in accordance with Section 3.1 (at nominal heat output) the smoke number shall not exceed 1. (see EN 267).

The proportion of unburnt hydrocarbons in the exit flue gases shall not exceed 10 ppm, except during the first 20 seconds after entry of the fuel. The measurment is effected by a flame ionization detector (FID).

The amount of pollution created by the combustion process shall be limited. This requirement is met if - while operating the boiler at minimum and maximum nominal outputs, the values given in Table 1 are not exceeded. The oil atomising burner used shall be stated by the manufacturer and shall be in accordance with EN 267.

Table 1. Emission limit values

CO	110 mg/kWh	85 ppm
NO_X	260 mg/kWh	125 ppm

3.6 Standby loss

The standby loss shall not exceed the values given in Figure 4. The values shall be determined at the nominal heat output of the boiler. For a boiler with a heat output range this applies to the maximum value of heat output.

The tests are normally carried out with burners without air dampers. If an air damper is used this shall be stated in the test report.

Boilers which also heat the room in which they are installed need not meet the values given in Figure 4.

For boilers with integral hot water production, it is allowable to have losses 0,005 % points higher than given in Figure 4.

3.7 Surface temperatures

The mean surface temperature of boiler doors and cleaning port covers on the operator side shall not exceed a temperature difference of 100 K against the room temperature.

The surface temperature of operating levers and all parts which must be touched during operation of the boiler shall not exceed the room temperature by more than the following values:

- 35 K for metals and similar materials,
- 45 K fo porcelain and similar materials
- 60 K for plastics and similar materials.

3.8 Floor temperatures

The temperature of the surface beneath the boiler shall not exceed 80°C at any point.

If this temperature is between 50°C and 80°C the manufacturer shall advise in the installation instructions on the type of protection which is to be fitted between the boiler and the floor if this is made of a combustible material.

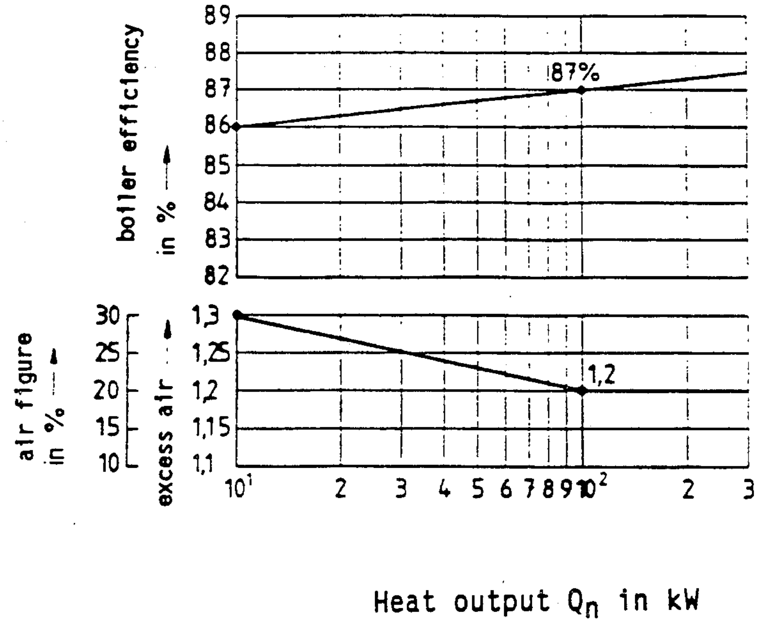

Figure 1. Requirements for oil fired boilers
Figure 1. Exigences concernant les chaudières à fioul
Bild. 1. Anforderungen an Öl-Kessel

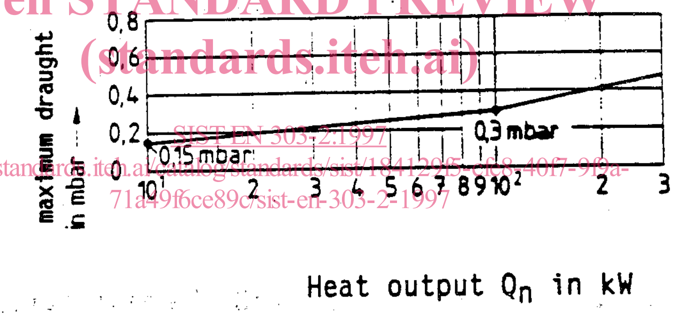

Figure 2. Requirements for boilers operated with negative pressure
Figure 2. Exigences concernant les chauières en dépression
Bild 2. Anforderungen an Kessel mit Unterdruck

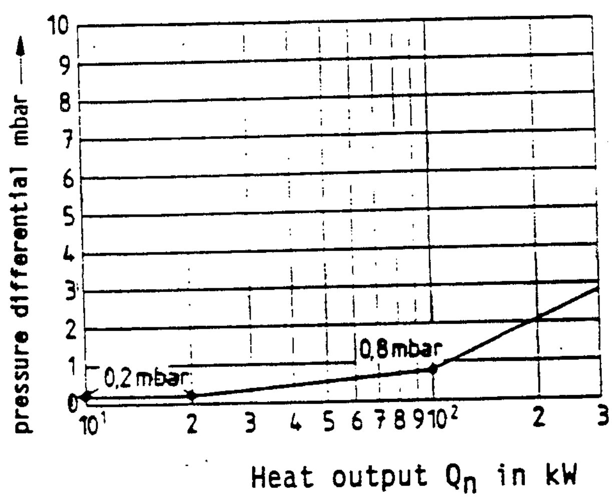

Figure 3. Maximum heating gas resistance of excess pressure boilers
Figure 3. Perte de charge maximale côté fumées des chaudières en surpression
Bild 3. Maximaler heigasseitiger Widerstand von Kesseln mit Überdruck