NSAI
Standards

Irish Standard
I.S. EN 267:2020

Forced draught burners for liquid fuels

I.S. EN 267:2020

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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National Foreword

I.S. EN 267:2020 is the adopted Irish version of the European Document EN 267:2020, Forced draught burners for liquid fuels

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In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 267

January 2020

ICS 27.060.10

Supersedes EN 267:2009+A1:2011

English Version

Forced draught burners for liquid fuels

Brûleurs à air soufflé pour combustibles liquides

Gebläsebrenner für flüssige Brennstoffe

This European Standard was approved by CEN on 8 October 2019.

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

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

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

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Ref. No. EN 267:2020 E

Contents

Page

European foreword

This document (EN 267:2020) has been prepared by Technical Committee CEN/TC 47 “Atomizing oil burners and their components - Function - Safety - Testing”, 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 July 2020, and conflicting national standards shall be withdrawn at the latest by January 2023.

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

This document supersedes EN 267:2009+A1:2011.

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 EU Directives.

For relationship with EU Directives, see informative Annex ZA, which are integral parts of this document.

Compared to EN 267:2009+A1:2011 the following fundamental changes have been made:

— based on ISO 22968 where different to EN 267:2009+A1:2011 such as:

  — flow rate from 100 kg/h to 30 kg/h requires a second valve, where the 30 kg/h are replaced by 400 kW;

  — update of definitions;

  — electrical interfaces for burners;

— modification:

  — test and working diagram NO_X emission calculation;

  — replacement of EN 50156-1:2004 by EN 60204-1 to include international available requirements for the electrical safety of machines; see Annex L with editorial allocation in Annex K;

  — Annex J is adapted to the new ISO EN 12100 which is substituting EN 1050 which is currently referenced to in Table J.1;

  — mass flow rate is changed into heat input;

— new functions / requirements:

  — remote reset;

  — environmental aspects (environmental check list);

  — increase of burner efficiency;

  — terminology for burner load control;

  — NO_X mean value for evaluating the NO_X classes;

  — implementing new requirements to comply with the 2013/813 (ErP);

— requiring of a risk assessment as required by EU directive 2014/35/EU for LVD and EU Directive 2014/30/EU for EMC.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This document is primarily intended for forced draught oil burners having a combustion air fan, operated with liquid fuels, and intended to be marketed as a complete assembly.

Forced draught oil burners according to this document are also used in industrial applications. The safety principles are the same as for forced draught oil burners used for household/commercial applications. Industrial forced draught oil burners however need to operate safely in their industrial environment and the risks involved can differ from those for household applications. These industrial forced draught oil burners can be characterized by the ability to withstand industrial environmental influences, like moisture, high temperature, electrical and magnetic phenomena, vibrations, etc.

Special requirements for forced draught burners for industrial premises are given in the form of notes and identified by “industrial application”.

Further information and application limitations for forced draught burners, which are used for industrial application, are given in informative Annex H.

Principal requirements for installation of oil burners for industrial thermal processing are covered by EN 746-2.

This document is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and hazardous events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standard, for machines that have been designed and built according to the provisions of this type C standard.

1 Scope

This document specifies the terminology, the general requirements for the construction and operation of forced draught oil burners and also the provision of control and safety devices, and the test procedure for these burners.

This document applies to forced draught oil burners supplied with:

— fuel based on first raffinates and their mixtures with biogenous liquid fuels having a viscosity at the burner inlet of 1,6 mm^2/s (cSt) up to 6 mm^2/s (cSt) at 20 °C, and

— higher boiling petroleum based first raffinates (viscosity greater than 6 mm^2/s), that require preheating for proper atomization.

This document is applicable to:

— single burners fitted to a single combustion chamber;

— single burners fitted to an appliance with additional requirements;

NOTE When additional requirements which are not identified or specified in this standard apply, the specification of the required safety measures and/or protective devices and compliance with them is outside the scope of this standard.

— single-fuel and dual-fuel burners when operating on oil only;

— the oil function of dual-fuel burners designed to operate simultaneously on liquid and gaseous fuels, which, for the latter, the requirements of EN 676 also apply.

This document deals with all significant machine hazards, hazardous situations and events relevant to burners, when they are used as intended and under conditions of misuse which are reasonably foreseeable, see Annex J.

This document also deals with the additional requirements for the burners in the scope with pressurized parts and/or firing pressurized bodies, see Annex K.

This document specifies the requirements to ensure the safety during commissioning, start-up, operation, shut-down and maintenance.

This document deals also with forced draught burners intended to be used with biogenous liquid fuels, mixtures.

This document deals also with burners and their equipment to increase the total appliance efficiency, see Annex M.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 298:2012, *Automatic burner control systems for burners and appliances burning gaseous or liquid fuels*

EN 676:2017, *Forced draught burners for gaseous fuels*

EN 1057:2006+A1:2010, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*

INTERNATIONAL STANDARD

ISO 22968

First edition
2010-11-01

Forced draught oil burners

Brûleurs à air soufflé pour combustibles liquides

Reference number
ISO 22968:2010(E)

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Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 22968 was prepared by Technical Committee ISO/TC 109, *Oil and gas burners*.

Introduction

This International Standard is primarily intended for application to automatic forced draught oil burners having a combustion air fan, operated with liquid fuels and intended to be marketed as a complete assembly.

Many burners are designed to operate using a wide range of fuel oils with little or no modification other than adjustment of the air supply.

When applying the requirements specific to a country or region, which are given in the various annexes, it is essential that a level of safety be ensured that is at least equivalent to that provided for by the requirements of the main body of this International Standard.

Forced draught oil burners

1 Scope

This International Standard specifies the terminology, test procedures and general requirements for the construction and operation of automatic forced draught oil burners supplied with a fuel having a viscosity at the burner inlet of 1,6 mm^2/s (cSt) to 6 mm^2/s (cSt) at 20 °C or higher, boiling petroleum in accordance with ISO 8217-based first raffinates, and the provision of related control and safety devices.

It is applicable to the following:

a) automatic oil burners (hereinafter called “burners”) fitted with a combustion air fan and equipped as described in Clause 5, intended for use in appliances of different types and operated with fuel oils;

b) single burners with a single combustion chamber, for which, where such burners are fitted to a single appliance, the requirements of the relevant appliance standard also apply;

c) single-fuel and dual-fuel burners when operating only on oil;

d) the oil function of dual-fuel burners designed to operate simultaneously on gaseous and liquid fuels, which, for the former, the requirements of ISO 22967 also apply.

It is not applicable to burners used in direct fired processes either with defined combustion chamber applications or where the combustion chamber wall surface temperature is greater than 750 °C or the heat-transfer medium temperature is greater than 500 °C.

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.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 1129, *Steel tubes for boilers, superheaters and heat exchangers — Dimensions, tolerances and conventional masses per unit length*

ISO 3183, *Petroleum and natural gas industries — Steel pipe for pipeline transportation systems*

ISO 6806, *Rubber hoses and hose assemblies for use in oil burners — Specification*

ISO 7005 (all parts), *Pipe flanges*

ISO 8217, *Petroleum products — Fuels (class F) — Specifications of marine fuels*