BS EN 267:2020

BSI Standards Publication

# Forced draught burners for liquid fuels

# National foreword

This British Standard is the UK implementation of EN 267:2020. It supersedes BS EN 267:2009+A1:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee RHE/13, Liquid fuel firing.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.


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# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

**EN 267**

January 2020

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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.

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

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# 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of an identical text or by endorsement, at the latest by July 2020, and conflicting national standards shall be withdrawn at the latest by January 2023.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*