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BS ISO 13577-2:2014



BSI Standards Publication

Industrial furnaces and associated processing equipment — Safety

Part 2: Combustion and fuel handling
systems

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This British Standard is the UK implementation of ISO 13577-2:2014.

The UK participation in its preparation was entrusted to Technical Committee RHE/13, Oil burning equipment.

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.

© The British Standards Institution 2014.
Published by BSI Standards Limited 2014

ISBN 978 0 580 87033 0

ICS 13.100; 25.180.01

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2014.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

First edition
2014-09-15

Industrial furnaces and associated processing equipment — Safety — Part 2: Combustion and fuel handling systems

Fours industriels et équipements associés — Sécurité —

*Partie 2: Équipement de combustion et de manutention des
combustibles*



Reference number
ISO 13577-2:2014(E)

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 244, *Industrial furnaces and associated processing equipment*.

ISO 13577 consists of the following parts, under the general title *Industrial furnaces and associated processing equipment — Safety*:

- *Part 1: General requirements*
- *Part 2: Combustion and fuel handling systems*
- *Part 3: Generation and use of protective and reactive atmosphere gases*
- *Part 4: Protective systems*

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Introduction

This document is a type-C standard as defined in ISO 12100.

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

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

This part of ISO 13577 assumes that the equipment is not creating any potentially explosive atmosphere and is located in a normally ventilated area.

Compliance with product standards e.g. ISO 22967 or ISO 22968 is not sufficient to ensure the minimum safety requirements for industrial furnaces and associated processing equipment (TPE). This part of ISO 13577 shall always have priority for TPE.

Industrial furnaces and associated processing equipment (TPE) generally consists of the following components:

- processing chamber (e.g. steel construction with lining and/or refractory);
- heating systems;
- protective system;
- control and instrumentation system / operator-control level.

ISO 13577-1 provides the general safety requirements common to TPE. This part of ISO 13577 details in addition specific safety requirements for combustion and fuel handling systems that are part of TPE as listed in the Scope.

NOTE As stated in its scope, ISO 13577-1 does not cover blast furnaces, converters (in steel plants), boilers and equipment not covered by ISO 12100.

The requirements for protective systems are specified in ISO 13577-4.

If a general requirement of ISO 13577-1 counters requirements in this part of ISO 13577, the requirements of this part of ISO 13577 take precedence.

The requirements for reducing hazards from noise are given in ISO 13577-1.

It is assumed that TPE will only be operated and maintained by trained personnel.

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Industrial furnaces and associated processing equipment — Safety —

Part 2: Combustion and fuel handling systems

1 Scope

This part of ISO 13577 specifies the safety requirements for combustion and fuel handling systems that are part of industrial furnaces and associated processing equipment (TPE).

NOTE The general safety requirements common to TPE are provided in ISO 13577-1 (See introduction).

This part of ISO 13577 deals with significant hazards, hazardous situations and events relevant to combustion and fuel handling systems as listed in [Annex A](#), when used as intended and under the conditions foreseen by the manufacturer.

This part of ISO 13577 covers:

- fuel pipework downstream of and including the manual isolating valve;
- combustion air supply (including oxygen and oxygen enriched combustion air) and flue gas system;
- burner(s), burner system and ignition device;
- functional requirements for safety related control system.

This part of ISO 13577 applies to any oxidation with air or other gases containing free oxygen of gaseous and liquid fuels or any combustion of them to release thermal energy in TPE.

For thermal or catalytic post combustion and waste incineration, this part of ISO 13577 applies only to auxiliary burners designed to start-up and/or support the process.

The pressure hazard of the piping and components covered by this part of ISO 13577 is within the maximum pressure/size relationship of category I as described in normative [Annex E](#).

This part of ISO 13577 also gives the necessary requirements regarding information for use.

This part of ISO 13577 does not cover hazards from heating generated by electricity.

This part of ISO 13577 does not deal with the hazards created by the release of flammable substances from the products processed in the TPE.

This part of ISO 13577 is not applicable to combustion and fuel handling systems:

- of welding machines;
- up-stream of the TPE manual isolating valve.

This part of ISO 13577 is not applicable to electrical cabling and power cabling upstream of the TPE control panel/protective system.