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Industrial furnaces and associated processing equipment — Safety — Part 3: Generation and use of protective and reactive atmosphere gases

Fours industriels et équipements associés — Sécurité —

Partie 3: Génération et utilisation des gaz d'atmosphère protectrice et réactive



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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	2
3 Terms and definitions	3
4 Safety requirements and measures	5
4.1 General.....	5
4.2 Pipework.....	5
4.2.1 General.....	5
4.2.2 Connections.....	6
4.2.3 Unconnected pipework.....	6
4.2.4 Galvanic cells.....	6
4.2.5 Flexible tubing and couplings.....	6
4.2.6 Marking of pipework.....	7
4.2.7 Soundness/Tightness.....	7
4.2.8 Condensate drains.....	7
4.2.9 Purge points.....	7
4.2.10 Blow-off and breather pipes or conduits.....	8
4.2.11 Pressure relief devices and flame arrestors on pipework.....	8
4.2.12 Pressure oscillations.....	8
4.2.13 Combustible gas by-pass.....	8
4.2.14 Isolation of required safety devices.....	8
4.2.15 Vents.....	8
4.3 Required safety devices.....	9
4.3.1 Atmosphere gas control equipment.....	9
4.3.2 Other safety devices.....	12
4.4 Requirements for the use of atmosphere gases.....	12
4.4.1 Prevention of potential ignitable atmospheres.....	12
4.4.2 Monitoring of TPE doors movements.....	14
4.4.3 Supervision of the means of ignition at the point of combustible atmosphere gas discharge.....	14
4.4.4 Emergency safety purge.....	14
4.5 Change of atmosphere.....	15
4.5.1 General.....	15
4.5.2 Purge with purge gas.....	15
4.5.3 Purge with self-ignition.....	16
4.5.4 Change of atmosphere by burning.....	16
4.5.5 Purge by evacuation.....	17
4.6 Interfaces to exhaust systems for combustible or toxic atmosphere gases.....	17
4.6.1 Exhaust of burned gases.....	17
4.6.2 Gathering of gases without burning and a closed system.....	18
5 Additional requirements for the generation of atmosphere gases	18
5.1 General.....	18
5.2 Gas and process liquid supplies.....	18
5.2.1 Air supplies.....	18
5.2.2 Reaction mixture supplies.....	19
5.2.3 Generated atmosphere gas distribution.....	19
5.3 Flame detection.....	19
5.4 Burners generating exothermic gases.....	19
5.5 Special requirements for different types of generator.....	19
5.5.1 Requirements for endothermic generators.....	19
5.5.2 Requirements for exothermic generators.....	20

This is a preview of "ISO 13577-3:2016". [Click here to purchase the full version from the ANSI store.](#)

5.6	Post-treatment of generated atmosphere gases	20
6	Verification of the safety requirements and/or measures	21
7	Information for use	24
7.1	General	24
7.2	Marking	24
7.3	Instruction handbook	24
7.3.1	General	24
7.3.2	Description of equipment	25
7.3.3	Inspection procedures	25
7.3.4	Commissioning, start-up and operating procedures	25
7.3.5	Shutdown procedures	26
7.3.6	Maintenance procedures	27
7.3.7	Documentation	27
Annex A	(informative) List of significant hazards	28
Annex B	(informative) Typical protective and reactive atmosphere gases	30
Annex C	(normative) Allowed maximum pressure	32
Annex D	(informative) Principle procedures for the change of atmosphere	37
Annex E	(informative) Examples for the determination of safety integrity level SIL and performance level PL using the risk graph method	38
Annex F	(informative) Basic configuration of piping system of TPE using protective or reactive atmosphere gases	49
Annex G	(normative) Requirements specific to Japan	51
Annex H	(normative) Requirements specific to the U.S.A.	53
Annex I	(normative) Requirements specific to European countries	55
Annex J	(informative) Overview of the terms defined in ISO 13574 (Vocabulary)	58
Bibliography	66

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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 World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

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*

Introduction

This part of ISO 13577 is a Type C-Standard as defined in ISO 12100.

The machinery concerned and the extent, to which hazards, hazardous situations and events are covered, is indicated in the scope of this part of ISO 13577.

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 standards, for machines that have been designed and built according to the provisions of this type C standard.

Compliance with product standards, e.g. ISO 22967 or ISO 22968 is not sufficient to ensure the minimum safety requirement for TPE. This part of ISO 13577 shall always have priority for TPE.

Industrial furnaces and associated thermo-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 generation and use of protective and reactive atmosphere gases that are part of TPE as listed in the scope. These requirements establish the minimum acceptable requirements for safety functions required for various processes. Where a process is not part of the TPE, the requirements do not apply.

For example, the minimum requirements for the opening and closing of doors on a TPE does not apply to TPE that do not have doors in their design.

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

The requirements of protective system are specified in ISO 13577-4.

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

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