Tööstuslikud termotöötlusseadmed. Osa 3: Ohutusnõuded atmosfäärigaaside genereerimisel ja kasutamisel

Industrial thermoprocessing equipment - Part 3: Safety requirements for the generation and use of atmosphere gases CONSOLIDATED TEXT

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 746-3:1999+A1:2009 sisaldab Euroopa standardi EN 746-3:1997+A1:2009 ingliskeelset teksti.	This Estonian standard EVS-EN 746-3:1999+A1:2009 consists of the English text of the European standard EN 746-3:1997+A1:2009.
Standard on kinnitatud Eesti Standardikeskuse 30.09.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 17.06.2009.	Date of Availability of the European standard text 17.06.2009.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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EUROPEAN STANDARD

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English Version

Industrial thermoprocessing equipment - Part 3: Safety requirements for the generation and use of atmosphere gases

Equipements thermiques industriels - Partie 3: Prescriptions de sécurité pour la génération et l'utilisation des gaz d'atmosphère

Industrielle Thermoprozessanlagen - Teil 3: Sicherheitsanforderungen für die Erzeugung und Anwendung von Schutz- und Reaktionsgasen

This European Standard was approved by CEN on 19 March 1997 and includes Amendment 1 approved by CEN on 21 May 2009.

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 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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 746-3:1997+A1:2009) has been prepared by Technical Committee CEN/TC 186 “Industrial thermoprocessing - Safety”, 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 December 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document includes Amendment 1, approved by CEN on 2009-05-21.

This document supersedes EN 746-3:1997.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1〉 〈A1▌.

The working group that drafted this Part of EN 746 comprised experts from the following countries: France, Germany, Italy, Switzerland and the United Kingdom.

This standard forms one part of safety standards covering Industrial Thermoprocessing Equipment.

The full list of parts of this standard is given below:

EN 746 Industrial Thermoprocessing Equipment

- Part 1: Common Safety Requirements for Industrial Thermoprocessing Equipment
- Part 2: Safety Requirements for Combustion and Fuel Handling Systems
- Part 3: Safety Requirements for the Generation and Use of Atmosphere Gases
- Part 4: Particular Safety Requirements for Hot Dip Galvanising Thermoprocessing Equipment
- Part 5: Particular Safety Requirements for Salt Bath Thermoprocessing Equipment
- Part 6: Particular Safety Requirements for Material Melting, Remelting and Liquid Phase Maintaining Thermoprocessing Equipment
- Part 7: Particular Safety Requirements for Vacuum Thermoprocessing Equipment
- Part 8: Particular Safety Requirements for Quenching Equipment

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 Directive(s).

▌A1〉 For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. 〈A1▌

An assessment of the foreseeable risks arising from the use of the equipment was carried out when this standard was prepared.

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

Introduction

This standard has been prepared to be a harmonised standard to provide one means of conforming to the Essential requirements of the Machinery Directive and associated EFTA Regulations.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with ⟦A1⟩ EN ISO 12100-1 and EN ISO 12100-2 ⟨A1⟧ for hazards which are not covered by this standard.

This European Standard is a type-C standard as defined in ⟦A1⟩ EN ISO 12100-1 and EN ISO 12100-2 ⟨A1⟧.

⟦A1⟩ EN 746-1 contains the common safety provisions for all types of industrial thermoprocessing equipment. This part of the standard details in addition those extra safety requirements for the equipment listed in the scope, which need special attention. ⟨A1⟧

The equipment dealt with and the extent to which hazards are covered are indicated in the scope of this part of EN 746.

Where for clarity an example of a preventative measure is given in the text, this should not be considered as the only possible solution. Any other solution leading to the same risk reduction is permissible if an equivalent level of safety is achieved.

This part of EN 746 assumes that the installations are operated and maintained by trained personnel.

1 Scope

This part of EN 746 specifies safety requirements for atmosphere gas systems and their use in industrial thermo-processing equipment and associated plant, including systems for the production of atmosphere gases by reaction inside the thermo-processing equipment.

It applies to the supply of atmosphere gases, gaseous and liquid additions to, and their removal from industrial thermo-processing equipment and associated plant, confined to equipment integrated in the thermo-processing and associated plant.

This part of EN 746 also details the anticipated significant hazards associated with atmosphere gas systems and their use in industrial thermo-processing equipment and specifies the appropriate preventative measures for the reduction or elimination of these hazards.

This part of EN 746 does not apply to atmosphere process gases, essential safety equipment, start-up, operation and shut-down of thermo-processing plant for semi-conductor devices for which special additional engineering requirements are necessary.

This part of EN 746 specifies the requirements to be met to ensure the safety of persons and property during commissioning, start up, operation, shut down and maintenance, as well as in the event of foreseeable faults or malfunctions which can occur in the equipment. It specifies the safety requirements at stages in the life of the equipment, and its design, ordering, construction and use.

This part of EN 746 applies to equipment which is placed on the market after the date of issue of this standard.

The hazards covered by this Part of EN 746 are listed in clause 4.

A table of typical atmosphere gases is given in Annex A.

2 Normative references

[A1] 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. [A1]

[A1] EN 88-1, *Pressure regulators and associated safety devices for gas appliances — Part 1: Pressure regulators for inlet pressures up to and including 500 mbar* [A1]

EN 161, *Automatic shut-off valves for gas burners and gas appliances*

[A1] *deleted text* [A1]

EN 298, *Automatic gas burner control systems for gas burners and gas burning appliances with or without fans*

EN 746-1, *Industrial thermoprocessing equipment — Part 1: Common safety requirements for Industrial Thermoprocessing Equipment*

EN 746-2, *Industrial thermoprocessing equipment — Part 2: Safety requirements for combustion and fuel handling systems*

EN 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements* [A1] *(IEC 60204-1:2005, modified)* [A1]

EN 60519-1, *Safety in electroheat installations — Part 1: General requirements* [A1] *(IEC 60519-1:2003)* [A1]

EN 60519-2, *Safety in electroheat installations — Part 2: Particular requirements for resistance heating equipment* [A1] *(IEC 660519-2:2006)* [A1]

[A1] EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)* [A1]

[A1] EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)* [A1]

[A1] IEC 60364-4-41, *Low-voltage electrical installations — Part 4-41: Protection for safety — Protection against electric shock* [A1]

[A1] IEC 60364-43, *Electrical installations of buildings — Part 4-43: Protection for safety — Protection against overcurrent* [A1]

[A1] *deleted text* [A1]

[A1] IEC 60364-4-44, *Low-voltage electrical installations — Part 4-44: Protection for safety — Protection against voltage disturbances and electromagnetic disturbances* [A1]

[A1] *deleted text* [A1]

[A1] IEC 60519-3, *Safety in electroheat installations — Part 3: Particular requirements for induction and conduction heating and induction melting installations* [A1]