



NSAI
Standards

Irish Standard
I.S. EN ISO 15012-4:2016

Health and safety in welding and allied processes - Equipment for capture and separation of welding fume - Part 4: General requirements (ISO 15012-4:2016)

I.S. EN ISO 15012-4:2016

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NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 15012-4:2016 is the adopted Irish version of the European Document EN ISO 15012-4:2016, Health and safety in welding and allied processes - Equipment for capture and separation of welding fume - Part 4: General requirements (ISO 15012-4:2016)

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EUROPEAN STANDARD

EN ISO 15012-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2016

ICS 25.160.30

English Version

**Health and safety in welding and allied processes -
Equipment for capture and separation of welding fume -
Part 4: General requirements (ISO 15012-4:2016)**

Hygiène et sécurité en soudage et techniques connexes
- Équipements de captage et de filtration des fumées de
soudage - Partie 4: Exigences générales (ISO 15012-
4:2016)

Arbeits- und Gesundheitsschutz beim Schweißen und
bei verwandten Verfahren - Einrichtungen zum
Erfassen und Abscheiden von Schweißrauch - Teil 4:
Allgemeine Anforderungen (ISO 15012-4:2016)

This European Standard was approved by CEN on 15 April 2016.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

EN ISO 15012-4:2016 (E)

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European foreword

This document (EN ISO 15012-4:2016) has been prepared by Technical Committee ISO/TC 44 “Welding and allied processes” in collaboration with Technical Committee CEN/TC 121 “Welding and allied processes” 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 January 2017, and conflicting national standards shall be withdrawn at the latest by January 2017.

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

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).

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 15012-4:2016 has been approved by CEN as EN ISO 15012-4:2016 without any modification.

Annex ZA

(informative)

Relationship between this European Standard and the essential requirements of EU Directive 2006/42/EC aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/396 (Machinery) to provide one voluntary means of conforming to essential requirements of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that EU Directive 2006/42/EC, and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and EU Directive 2006/42/EC

Essential Requirements of EU Directive 2006/42/EC	Clause(s)/subclause(s) of this EN	Remarks/Notes
all requirements are covered	all clauses	—

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

INTERNATIONAL STANDARD

**ISO
15012-4**

First edition
2016-06-15

Health and safety in welding and allied processes — Equipment for capture and separation of welding fume —

Part 4: General requirements

*Hygiène et sécurité en soudage et techniques connexes —
Équipements de captage et de filtration des fumées de soudage —
Partie 4: Exigences générales*



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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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ISO 15012-4:2016(E)

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 44, *Welding and allied processes*, Subcommittee SC 9, *Health and safety*.

ISO 15012 consists of the following parts, under the general title *Health and safety in welding and allied processes — Equipment for capture and separation of welding fume*:

- *Part 1: Requirements for testing and marking of separation efficiency*
- *Part 2: Determination of the minimum air volume flow rate of captor hoods and nozzles*
- *Part 3: Determination of the capture efficiency of on-gun welding fume extraction devices*
- *Part 4: General requirements*

Requests for official interpretations of any aspect of this International Standard should be directed to the Secretariat of ISO/TC 44/SC 9 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

Introduction

Welding and allied processes generate fumes and gases which, if inhaled, can be harmful to human health. Therefore, control of the fumes and gases generated is to be exercised to minimize worker exposure.

The most effective method of control is to capture the fumes and gases close to their source before they enter a worker's breathing zone or the general workplace environment.

Ventilation equipment used to capture the fumes and gases is to be fit for purpose because inefficient capture could result in high exposure and can be detrimental to workers' health. It is important therefore that it adheres to defined manufacturing, materials and design requirements and gives warning of malfunction.

This part of ISO 15012 defines the general requirements that are necessary for ventilation equipment to maintain exposure to fumes at acceptable levels.

This part of ISO 15012 is a type-B standard as stated in ISO 12100.

This part of ISO 15012 is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- machine manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of this part of ISO 15012 by the above-mentioned stakeholder groups:

- machine users/employers (small, medium and large enterprises);
- machine users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this part of ISO 15012.

In addition, this part of ISO 15012 is intended for standardization bodies elaborating type-C standards.

The requirements of this part of ISO 15012 can be supplemented or modified by a type-C standard.

For machines which are covered by the scope of a type-C standard and which have been designed and built according to the requirements of that standard, the requirements of that type-C standard take precedence.

Health and safety in welding and allied processes — Equipment for capture and separation of welding fume —

Part 4: General requirements

1 Scope

This part of ISO 15012 defines the general requirements for ventilation equipment used to control exposure to fumes generated by welding and allied processes. It applies to the design and manufacture of all parts of the equipment including hoods, ducting, filter units, air movers, systems that inform of unsafe operation and workplace practices to ensure safe working with regard to exposure.

Significant hazards are listed in [Clause 4](#). It does not cover electrical, mechanical and pneumatic hazards.

This part of ISO 15012 is applicable to the following:

- local exhaust ventilation systems (LEV);
- mobile and stationary equipment.

This part of ISO 15012 is not applicable to the following:

- general ventilation, air make up or air movement systems;
- air conditioning systems;
- separation of gases generated by or used by welding and allied processes;
- LEV used for welding and allied processes that generate reactive potentially explosive particles and atmospheres;
- grinding dust.

This part of ISO 15012 applies to systems designed and manufactured after its publication.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

ISO 15012-1:2013, *Health and safety in welding and allied processes — Equipment for capture and separation of welding fume — Part 1: Requirements for testing and marking of separation efficiency*

ISO 15012-2, *Health and safety in welding and allied processes — Requirements, testing and marking of equipment for air filtration — Part 2: Determination of the minimum air volume flow rate of captor hoods and nozzles*

ISO 15012-3, *Health and safety in welding and allied processes — Requirements, testing and marking of equipment for air filtration — Part 3: Determination of the capture efficiency of on-gun welding fume extraction*

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