



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 17916:2016

# Safety of thermal cutting machines (ISO 17916:2016)

## I.S. EN ISO 17916:2016

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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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 17916:2016 is the adopted Irish version of the European Document EN ISO 17916:2016, Safety of thermal cutting machines (ISO 17916:2016)

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

**Compliance with this document does not of itself confer immunity from legal obligations.**

*In line with international standards practice the decimal point is shown as a comma (,) throughout this document.*

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**EUROPEAN STANDARD**

**EN ISO 17916**

**NORME EUROPÉENNE**

**EUROPÄISCHE NORM**

April 2016

ICS 25.160.10

English Version

## **Safety of thermal cutting machines (ISO 17916:2016)**

Sécurité des machines de coupage thermique (ISO  
17916:2016)

Sicherheit von Maschinen zum thermischen Trennen  
(ISO 17916:2016)

This European Standard was approved by CEN on 27 February 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.



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

## **Contents**

Page

<b>European foreword.....</b>	<b>3</b>
<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC on machinery.....</b>	<b>4</b>

## **European foreword**

This document (EN ISO 17916:2016) 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 October 2016, and conflicting national standards shall be withdrawn at the latest by October 2016.

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(s), 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 17916:2016 has been approved by CEN as EN ISO 17916:2016 without any modification.

**Annex ZA**  
(informative)

**Relationship between this European Standard and the Essential  
Requirements of EU Directive 2006/42/EC on machinery**

This European Standard has been prepared under a mandate given to CEN by the European Commission to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements of that Directive and associated EFTA regulations.

**WARNING** — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.



**I.S. EN ISO 17916:2016**

# INTERNATIONAL STANDARD

**ISO  
17916**

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## **Safety of thermal cutting machines**

*Sécurité des machines de coupage thermique*



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**ISO 17916:2016(E)**



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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

# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>2</b>
<b>4 Significant hazards</b> .....	<b>4</b>
<b>5 Safety requirements and protective measures</b> .....	<b>4</b>
5.1 General.....	4
5.2 List of safety requirements.....	5
<b>6 Information for use</b> .....	<b>15</b>
6.1 General.....	15
6.2 Instruction handbook.....	15
6.3 Noise declaration.....	16
6.4 Marking.....	16
<b>Annex A (informative) Examples of hazards, hazardous situations, and hazardous events</b> .....	<b>17</b>
<b>Annex B (informative) Calculation examples for dimensioning of exhaust systems</b> .....	<b>21</b>
<b>Annex C (informative) Example for the lower limit of protective devices</b> .....	<b>24</b>
<b>Annex D (informative) Example for calculation of the compression corresponding to the acceptable maximum force in case of collision between the machine and a human body</b> .....	<b>25</b>
<b>Annex E (normative) Measurement of the air velocity at the entrance plane of the cutting table</b> .....	<b>27</b>
<b>Bibliography</b> .....	<b>28</b>

## ISO 17916:2016(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](http://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](http://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*.

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](http://www.iso.org).

## **Introduction**

This International Standard has been created in recognition of the particular hazards that are presented by thermal cutting machines.

This International Standard is a type-C standard as outlined in ISO 12100.

When provisions of a type-C standard are different from those which are stated in type-A or type-B standards, the provisions of the type-C standard will take precedence over the provisions of the other standards for machines that have been designed and built in accordance with the provisions of the type-C standard.

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

Hazards associated with thermal cutting machines are well recognized, but the sources of the hazards are frequently unique to a particular thermal cutting system. The number and type(s) of hazard(s) is (are) directly related to the nature of the thermal cutting process and the complexity of the installation. The risks associated with these hazards vary with the type of equipment used, its purpose, and the way in which it is installed, programmed, operated, and maintained.

This International Standard is not applicable to thermal cutting machines that were manufactured prior to its publication date.



# Safety of thermal cutting machines

## 1 Scope

This International Standard specifies the safety requirements and measures for machinery covering design, construction, production, transport, installation, operation, maintenance, and putting out of service.

This International Standard applies to machinery using thermal cutting and or marking processes such as oxy-fuel, plasma arc. This International Standard applies to machinery the basis of which is either designed as open gantry, cantilever machine, or the track of which is incorporated in the cutting table.

This International Standard does not cover design standards for specific tools, e.g. oxy-fuel hose standards, electrical requirements for plasma power supplies. Most tools used on thermal cutting machines have specific design standards.

This International Standard does not cover handheld cutting equipment and cutting equipment which is combined with a constrained tracking system mounted on the work piece.

Risks arising from thermal cutting tools may be covered by related standards.

Risks arising from laser radiation, except those caused by position indicating lasers, are not covered by this International Standard. Those risks are covered by ISO 11553.

Machines that combine thermal processes with other processes (e.g. grinding, drilling, milling, etc.) are only partly covered. Risks arising from these other processes may be covered by related standards.

## 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 3746, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

ISO 3821, *Gas welding equipment — Rubber hoses for welding, cutting and allied processes*

ISO 4871, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*

ISO 5171, *Gas welding equipment — Pressure gauges used in welding, cutting and allied processes*

ISO 5172, *Gas welding equipment — Blowpipes for gas welding, heating and cutting — Specifications and tests*

ISO 5175, *Equipment used in gas welding, cutting and allied processes — Safety devices for fuel gases and oxygen or compressed air — General specifications, requirements and tests*

ISO 7289, *Gas welding equipment — Quick-action couplings with shut-off valves for welding, cutting and allied processes*

ISO 7291, *Gas welding equipment — Pressure regulators for manifold systems used in welding, cutting and allied processes up to 30 MPa (300 bar)*

ISO 8207, *Gas welding equipment — Specification for hose assemblies for equipment for welding, cutting and allied processes*

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