



NSAI
Standards

Irish Standard
I.S. EN ISO 11148-7:2012

Hand-held non-electric power tools - Safety requirements - Part 7: Grinders (ISO 11148-7:2012)

© CEN 2012

No copying without NSAI permission except as permitted by copyright law.

I.S. EN ISO 11148-7:2012

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

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

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:
EN 792-7:2001+A1:2008

This document is based on:
EN ISO 11148-7:2012

Published:
4 September, 2012

This document was published
under the authority of the NSAI
and comes into effect on:
4 September, 2012

ICS number:
25.140.10

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

English Version

Hand-held non-electric power tools - Safety requirements - Part
7: Grinders (ISO 11148-7:2012)

Machines portatives à moteur non électrique - Exigences
de sécurité - Partie 7: Meuleuses (ISO 11148-7:2012)

Handgehaltene nicht elektrisch betriebene Maschinen -
Sicherheitsanforderungen - Teil 7: Schleifmaschinen für
Schleifkörper (ISO 11148-7:2012)

This European Standard was approved by CEN on 25 August 2012.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
Annex ZA (informative) Relationship between this International Standard and the Essential Requirements of EU Directive 2006/42/EC	4

Foreword

This document (EN ISO 11148-7:2012) has been prepared by Technical Committee ISO/TC 118 "Compressors and pneumatic tools, machines and equipment" in collaboration with Technical Committee CEN/TC 255 "Hand-held, non-electric power tools - Safety" the secretariat of which is held by SIS.

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 February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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 supersedes EN 792-7:2001+A1:2008.

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 11148-7:2012 has been approved by CEN as EN ISO 11148-7:2012 without any modification.

Annex ZA (informative)

Relationship between this International Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC 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 clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding 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 11148-7:2012
INTERNATIONAL
STANDARD

ISO
11148-7

First edition
2012-08-15

**Hand-held non-electric power tools —
Safety requirements —**

**Part 7:
Grinders**

*Machines portatives à moteur non électrique — Exigences de sécurité —
Partie 7: Meuleuses*



Reference number
ISO 11148-7:2012(E)

© ISO 2012



COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	2
3 Terms and definitions	2
3.1 General terms and definitions	2
3.2 Terms and definitions related to grinders	4
3.3 Symbols	5
4 Safety requirements and/or protective measures	5
4.1 General	5
4.2 Mechanical safety	6
4.3 Thermal safety	21
4.4 Noise reduction	22
4.5 Vibration	22
4.6 Materials and substances processed, used or exhausted	23
4.7 Ergonomics	23
4.8 Controls	23
5 Verification	24
5.1 General conditions for the tests	24
5.2 Noise	24
5.3 Vibration	24
5.4 Test of deformation of flanges	24
5.5 Test of guards	25
5.6 Unintentional start	26
5.7 Power tool construction	27
5.8 Test of alternative flanges	27
5.9 Structure of verification of safety requirements	28
6 Information for use	29
6.1 Marking, signs and written warnings	29
6.2 Instructions handbook	30
6.3 Operating instructions	35
6.4 Data	36
6.5 Maintenance instructions	36
Annex A (informative) List of significant hazards	38
Annex B (informative) Examples of grinders covered by this part of ISO 11148	40
Annex C (normative) Symbols for labels and signs	42
Annex D (informative) Examples of abrasive products for hand-held grinders	43
Annex E (informative) Example of calculating procedure of clamping force	50
Bibliography	54

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 11148-7 was prepared by Technical Committee ISO/TC 118, *Compressors and pneumatic tools, machines and equipment*, Subcommittee SC 3, *Pneumatic tools and machines*.

ISO 11148 consists of the following parts, under the general title *Hand-held non-electric power tools — Safety requirements*:

- *Part 1: Assembly power tools for non-threaded mechanical fasteners*
- *Part 2: Cutting-off and crimping power tools*
- *Part 3: Drills and tappers*
- *Part 4: Non-rotary percussive power tools*
- *Part 5: Rotary percussive drills*
- *Part 6: Assembly power tools for threaded fasteners*
- *Part 7: Grinders*
- *Part 8: Sanders and polishers*
- *Part 9: Die grinders*
- *Part 10: Compression power tools*
- *Part 11: Nibblers and shears*
- *Part 12: Circular, oscillating and reciprocating saws*

A Part 13 dealing with fastener driving tools is under preparation.

Introduction

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

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are defined in the Scope of this part of ISO 11148.

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

ISO 11148 consists of a number of independent parts for individual types of hand-held non-electric power tools.

Certain parts of ISO 11148 cover hand-held non-electric power tools driven by internal combustion engines powered by gaseous or liquid fuel. In these parts, the safety aspects relating to internal combustion engines are found in a normative annex.

The parts are type-C standards and refer to pertinent standards of type A and B where such standards are applicable.

I.S. EN ISO 11148-7:2012

Hand-held non-electric power tools — Safety requirements —

Part 7: Grinders

IMPORTANT — The colours represented in the electronic file of this document can be neither viewed on screen nor printed as true representations. For the purposes of colour matching, see ISO 3864-4, which provides colorimetric and photometric properties together with, as a guideline, references from colour order systems.

1 Scope

This part of ISO 11148 specifies safety requirements for hand-held non-electric power tools (hereinafter “grinders”) intended for grinding and cutting-off with abrasive products, for use on all kinds of materials. The grinders can be powered by compressed air or hydraulic fluid and are intended to be used by one operator and supported by the operator’s hand or hands, with or without a suspension, e.g. a balancer.

NOTE 1 At the time of publication, no grinders driven by internal combustion engines are known (other than cutting-off machines within the scope of ISO 19432). Once these are identified, it is intended to amend this part of ISO 11148 to include such power tools.

This part of ISO 11148 is applicable to grinders used with:

- abrasive products with a peripheral operating speed less than or equal to 80 m/s;
- cutting-off wheels with a peripheral operating speed less than or equal to 100 m/s;
- abrasive products with an outside nominal diameter less than or equal to 230 mm;
- cutting-off wheels with an outside nominal diameter less than or equal to 250 mm;
- wire brushes;
- diamond and reinforced (segmented) wheels with an outside nominal diameter less than or equal to 450 mm;
- flap discs and flap wheels.

NOTE 2 For examples of grinders, see Annex B.

NOTE 3 Typical abrasive products used together with hand-held grinders are listed in Annex D.

This part of ISO 11148 does not cover special requirements and modifications of grinders for the purpose of mounting them in fixtures.

This part of ISO 11148 is not applicable to:

- die grinders with collets, which are treated in ISO 11148-9;
- polishers and sanders (i.e. tools used with coated abrasives except flap discs and flap wheels), which are treated in ISO 11148-8;
- cutting-off machines which are driven by internal combustion engines and are used for cutting construction materials, which are treated in ISO 19432;
- shaft-mounted wire brushes, which are treated in ISO 11148-9.

This part of ISO 11148 deals with all significant hazards, hazardous situations or hazardous events relevant to grinders when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer, with the exception of the use of grinders in potentially explosive atmospheres.

NOTE 4 EN 13463-1 gives requirements for non-electrical equipment for potentially explosive atmospheres.

2 Normative references

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.

ISO 3857-3, *Compressors, pneumatic tools and machines — Vocabulary — Part 3: Pneumatic tools and machines*

ISO 5391, *Pneumatic tools and machines — Vocabulary*

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

ISO 13732-1, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 1: Hot surfaces*

ISO 13732-3, *Ergonomics of the thermal environment — Methods for the assessment of human responses to contact with surfaces — Part 3: Cold surfaces*

ISO 15744, *Hand-held non-electric power tools — Noise measurement code — Engineering method (grade 2)*

ISO 17066, *Hydraulic tools — Vocabulary*

ISO 20643, *Mechanical vibration — Hand-held and hand-guided machinery — Principles for evaluation of vibration emission*

ISO 28927-1:2009, *Hand-held portable power tools — Test methods for evaluation of vibration emission — Part 1: Angle and vertical grinders*

ISO 28927-4, *Hand-held portable power tools — Test method for evaluation of vibration emission — Part 4: Straight grinders*

EN 10111, *Continuously hot rolled low carbon steel sheet and strip for cold forming — Technical delivery conditions*

EN 10130, *Cold rolled low carbon steel flat products for cold forming — Technical delivery conditions*

EN 12096, *Mechanical vibration — Declaration and verification of vibration emission values*

EN 12418, *Masonry and stone cutting-off machines for job site — Safety*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3857-3, ISO 5391, ISO 12100 and ISO 17066 (for hydraulic tools) and the following apply.

3.1 General terms and definitions

3.1.1

hand-held power tool

machine operated by one or two hands and driven by rotary or linear motors powered by compressed air, hydraulic fluid, gaseous or liquid fuel, electricity or stored energy (e.g. by a spring) to do mechanical work and so designed that the motor and the mechanism form an assembly that can easily be brought to its place of operation

NOTE Hand-held power tools driven by compressed air or gas are called pneumatic tools (or air tools). Hand-held power tools driven by hydraulic liquid are called hydraulic tools.

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-