



**NSAI**  
Standards

Irish Standard  
I.S. EN ISO 19225:2017

Underground mining machines - Mobile extracting machines at the face - Safety requirements for shearer loaders and plough systems (ISO 19225:2017)

## I.S. EN ISO 19225:2017

*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/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):*

*NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.*

*This document is based on:*

EN ISO 19225:2017

*Published:*

2017-12-20

*This document was published under the authority of the NSAI and comes into effect on:*

2018-01-15

ICS number:

73.100.30

NOTE: If blank see CEN/CENELEC cover page

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 19225:2017 is the adopted Irish version of the European Document EN ISO 19225:2017, Underground mining machines - Mobile extracting machines at the face - Safety requirements for shearer loaders and plough systems (ISO 19225:2017)

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

For relationships with other publications refer to the NSAI web store.

**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.*

This page is intentionally left blank

EUROPEAN STANDARD

**EN ISO 19225**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2017

ICS 73.100.30

Supersedes EN 1552:2003

English Version

## Underground mining machines - Mobile extracting machines at the face - Safety requirements for shearer loaders and plough systems (ISO 19225:2017)

Machines d'exploitation de mines et carrières souterraines - Machines mobiles d'abattage de front de taille - Exigences de sécurité imposées aux haveuses à tambour(s) et aux rabots (ISO 19225:2017)

Bergbaumaschinen unter Tage - Mobile Abbaumaschinen im Streb - Sicherheitsanforderungen für Walzenlader und Hobelanlagen (ISO 19225:2017)

This European Standard was approved by CEN on 16 November 2017.

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, Serbia, 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: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>3</b>
<b>Annex ZA (informative) Relationship between this European Standard and the essential requirements of Directive 2006/42/EC aimed to be covered</b> .....	<b>4</b>

## European foreword

The text of ISO 19225:2017 has been prepared by Technical Committee ISO/TC 82 “Mining” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 19225:2017 by Technical Committee CEN/TC 196 “Mining machinery and equipment - 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 June 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

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

This document supersedes EN 1552:2003.

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.

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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

### Endorsement notice

The text of ISO 19225:2017 has been approved by CEN as EN ISO 19225:2017 without any modification.

## Annex ZA (informative)

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

This European Standard has been prepared under a Commission's standardization request „M/396 Mandate to CEN and CENELEC for Standardisation in the field of 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 Directive, and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Annex I of Directive 2006/42/EC**

Essential Requirements of EU Directive 2006/42/EC	Clause(s)/sub-clause(s) of this European Standard	Remarks/Notes
Within the limits of the scope all relevant essential requirements with the exception of essential requirements 1.5.8 and 1.7.4.2 j and u are covered	All normative clauses except clause 5.7 and annex A.	For relation of normative clauses (except clause 5.7 and annex A) of this standard to significant hazards/relevant essential requirements of 2006/42/EC see clause 4 „List of significant hazards“ of this standard in combination with annex D “Examples of significant hazards, hazardous situations, hazardous events and their relation to the Essential Requirements of the Machinery Directive 2006/42/EC” of CEN Guide 414 ( <a href="https://boss.cen.eu/ref/CEN_414.pdf">https://boss.cen.eu/ref/CEN_414.pdf</a> ).

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



# INTERNATIONAL STANDARD

**ISO**  
**19225**

First edition  
2017-05

---

---

## **Underground mining machines — Mobile extracting machines at the face — Safety requirements for shearer loaders and plough systems**

*Machines d'exploitation de mines et carrières souterraines —  
Machines mobiles d'abattage de front de taille — Exigences de  
sécurité imposées aux haveuses à tambour(s) et aux rabots*



Reference number  
ISO 19225:2017(E)

© ISO 2017

**ISO 19225:2017(E)**



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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>v</b>
<b>Introduction</b> .....	<b>vi</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 List of significant hazards</b> .....	<b>3</b>
<b>5 Safety requirements and/or protective measures</b> .....	<b>5</b>
5.1 General.....	5
5.2 Contact surfaces.....	5
5.2.1 Sharp corners and edges.....	5
5.2.2 Hot surfaces.....	6
5.3 Stability.....	6
5.4 Control devices and systems.....	7
5.4.1 General requirements.....	7
5.4.2 Safety and reliability of control systems.....	8
5.4.3 Design of control systems.....	8
5.4.4 Failure of power supply.....	10
5.4.5 Remote control.....	10
5.4.6 Radio control.....	10
5.4.7 Automatic control.....	11
5.4.8 Measures to prevent inadvertent movements.....	12
5.5 Falling objects and ejected material.....	13
5.6 Dust control.....	13
5.6.1 General.....	13
5.6.2 Dust reduction.....	13
5.6.3 Dust suppression.....	13
5.7 Noise.....	13
5.7.1 General.....	13
5.7.2 Noise reduction at the source at the design stage.....	14
5.8 Electrical requirements.....	14
5.8.1 General.....	14
5.8.2 Control of electrical power supply.....	14
5.8.3 Monitoring of circuits.....	14
5.8.4 Cables.....	15
5.8.5 Bonding.....	15
5.8.6 Lighting.....	15
5.9 Mechanical requirements.....	15
5.9.1 General.....	15
5.9.2 Chains.....	15
5.9.3 Gearboxes.....	16
5.10 Hydraulic systems and water systems.....	16
5.10.1 Hydraulic systems.....	16
5.10.2 Water systems.....	16
5.11 Fire protection.....	17
5.12 Load attachment points.....	17
5.13 Maintenance and repair.....	17
<b>6 Verification of the safety requirements and/or protective measures</b> .....	<b>18</b>
<b>7 Information for use</b> .....	<b>19</b>
7.1 General.....	19
7.2 Signals and warning devices.....	19
7.3 Accompanying documents.....	20
7.3.1 General.....	20

**ISO 19225:2017(E)**

7.3.2	Information for transportation, handling and storage .....	20
7.3.3	Information for assembly and commissioning .....	20
7.3.4	Information about the machine .....	20
7.3.5	Information for operational use .....	20
7.3.6	Information on maintenance and repairs .....	21
7.3.7	Information for decommissioning, dismantling and disposal .....	21
7.3.8	Information for emergencies .....	22
7.4	Marking .....	22
<b>Annex A (normative) Noise test code .....</b>		<b>23</b>
<b>Bibliography .....</b>		<b>26</b>

## 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 voluntary nature of standards, 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](http://www.iso.org/iso/foreword.html)

The committee responsible for this document is ISO/ TC 82, *Mining*.

## **ISO 19225:2017(E)**

### **Introduction**

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

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

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type C standard.

The machines concerned work with tools for cutting minerals such as coal, ore, salt and surrounding rock, at a fixed or variable height and are guided on armoured face conveyors or their attachments. Shearer loaders have built-in haulage systems. They can be directly operated by one or more drivers or be remotely or program controlled. Plough systems are remotely controlled. Wireless remote control systems of shearer loaders are used in the immediate environment of the machines.

# Underground mining machines — Mobile extracting machines at the face — Safety requirements for shearer loaders and plough systems

## 1 Scope

This document specifies safety requirements to minimize the hazards listed in [Clause 4](#) that can occur during the assembly, use, maintenance, repair, decommissioning, disassembly and disposal of shearer loaders and plough systems when used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer, in underground mining.

This document does not cover any hazards resulting from explosive atmospheres. Requirements for explosive atmospheres can be found in ISO/IEC 80079-38.

This document is not applicable to machines that are manufactured before the date of its publication.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3457:2003, *Earth-moving machinery — Guards — Definitions and requirements*

ISO 3864-3, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 4413:2010, *Hydraulic fluid power — General rules and safety requirements for systems and their components*

ISO 6405-1, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 7731:2003, *Ergonomics — Danger signals for public and work areas — Auditory danger signals*

ISO 9244, *Earth-moving machinery — Machine safety labels — General principles*

ISO 9355-1, *Ergonomic requirements for the design of displays and control actuators — Part 1: Human interactions with displays and control actuators*

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

ISO 12922, *Lubricants, industrial oils and related products (class L) — Family H (Hydraulic systems) — Specifications for hydraulic fluids in categories HFAE, HFAS, HFB, HFC, HFDR and HFDU*

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

ISO 13849-1, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

ISO 13850, *Safety of machinery — Emergency stop function — Principles for design*

ISO 14120, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

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](#)
-