

AS ISO 22448:2021  
ISO 22448:2010



STANDARDS  
Australia



# Earth-moving machinery — Anti-theft systems — Classification and performance

currently in preview, click buy full version

AS ISO 22448:2021

This Australian Standard® was prepared by ME-063, Earthmoving Equipment. It was approved on behalf of the Council of Standards Australia on 11 December 2020.

This Standard was published on 22 January 2021.

The following are represented on Committee ME-063:

Australian Industry Group  
Better Regulation Division — SafeWork NSW  
Construction and Mining Equipment Industry Group  
Department of Natural Resources, Mines and Energy, Qld  
Department of Regional NSW  
Engineers Australia / Mining Electrical and Mining Mechanical Engineering Society  
Institute of Instrumentation, Control & Automation Australia  
Minerals Council of Australia  
University of Queensland

This Standard was issued in draft form for comment as DR AS ISO 22448:2020.

#### **Keeping Standards up-to-date**

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

[www.standards.org.au](http://www.standards.org.au)

ISBN 978 1 76113 139 4

# Earth-moving machinery — Anti-theft systems — Classification and performance

First published as AS ISO 22448:2021.

## **COPYRIGHT**

© ISO 2021 — All rights reserved  
© Standards Australia Limited 2021

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

## Preface

This Standard was prepared by the Standards Australia Committee ME-063, Earthmoving Equipment.

The objective of this document is to specify, and classify at seven levels, systems for the protection against theft of earth-moving machinery as defined in ISO 6165, and gives performance criteria for each level.

This document also provides recommendations for managing critical documentation and theft-sensitive spare parts in protection against theft.

This document is not applicable to tracking systems that monitor the location of a machine.

This document is identical with, and has been reproduced from, ISO 22448:2010, *Earth moving machinery — Anti-theft systems — Classification and performance*.

As this document has been reproduced from an International Standard, the following apply:

(a) In the source text “this International Standard” should read “this document”.

(b) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical or options of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

## Contents

Preface .....	ii
Foreword .....	iv
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Classification</b> .....	<b>2</b>
4.1 Level I — Universal key (with no combination) .....	2
4.2 Level II — Mechanical restraint .....	2
4.3 Level III — Unique key .....	2
4.4 Level IV — Add-on authentication system .....	2
4.5 Level V — Manufacturer's authentication system .....	2
4.6 Level VI — Electronic immobilizer system .....	3
4.7 Level VII — Multiple-ECM/ECU immobilizer system .....	3
<b>5 Performance criteria</b> .....	<b>3</b>
5.1 Level I — Universal key (with no combination) .....	3
5.2 Level II — Mechanical restraints .....	3
5.3 Level III — Unique key .....	4
5.4 Level IV — Add-on authentication system .....	4
5.5 Level V — Manufacturer's authentication system .....	4
5.6 Level VI — Electronic immobilizer system .....	4
5.7 Level VII — Multiple-ECM/ECU immobilizer system .....	5
<b>6 Pictogram</b> .....	<b>6</b>
<b>7 Documentation</b> .....	<b>6</b>
<b>8 Theft-sensitive spare parts</b> .....	<b>6</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.

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 22448 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 3, *Machine characteristics, electrical and electronic systems, operation and maintenance*.

# Australian Standard®

## Earth-moving machinery — Anti-theft systems — Classification and performance

### 1 Scope

This International Standard specifies, and classifies at seven levels, systems for the protection against theft of earth-moving machinery as defined in ISO 6165, and gives performance criteria for each level.

It also gives recommendations for managing critical documentation and theft-sensitive spare parts in protection against theft.

It is not applicable to tracking systems that monitor the location of a machine.

### 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 6165, *Earth moving machinery — Basic types — Identification and terms and definitions*

ISO 10264, *Earth-moving machinery — Key-locked starting systems*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1

##### **immobilizer**

device that is intended to prevent normal operation of the machine

#### 3.2

##### **authentication device**

device which allows identification of authorized user(s)

EXAMPLE Radio, satellite telephone, keypad, ultrasonic, magnetic wave, electronic key.

#### 3.3

##### **electronic control unit** **electronic control module**

##### **ECU**

##### **ECM**

electronic device (electronic programmable controller) used in a control system on earth-moving machinery

#### 3.4

##### **electronic key**

wireless device used to aid authentication of the operator

#### 3.5

##### **token**

unique and distinguishing code exchanged between ECM/ECUs