

BS ISO 10262:1998



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Earth-moving machinery — Hydraulic excavators — Laboratory tests and performance requirements for operator protective guards

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National foreword

This British Standard is the UK implementation of ISO 10262:1998.

The start and finish of text introduced or altered by corrigendum is indicated in the text by tags. Text altered by ISO corrigendum July 2009 is indicated in the text by AC1 AC1.

The UK participation in its preparation was entrusted by Technical Committee B/513, Construction equipment and plant and site safety, to Subcommittee B/513/1, Earth moving machinery (International).

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Published by BSI Standards Limited 2016

ISBN 978 0 580 68665 8

ICS 53.100

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2016.

Amendments/corrigenda issued since publication

Date	Text affected
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Earth-moving machinery — Hydraulic excavators — Laboratory tests and performance requirements for operator protective guards

Engins de terrassement — Pelles hydrauliques — Essais de laboratoire et critères de performance des structures de protection de l'opérateur



Foreword

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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.

International Standard ISO 10262 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors*.

Annex A forms an integral part of this International Standard.

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Printed in Switzerland

Earth-moving machinery — Hydraulic excavators — Laboratory tests and performance requirements for operator protective guards

1 Scope

This International Standard establishes a consistent, repeatable test procedure and performance requirements for evaluating operator-protective guarding that undergo loading. Such guards are usually intended to provide excavator operators with reasonable protection against objects (e.g. rocks and debris) which would otherwise penetrate the operators station from the front or top.

It is applicable to hydraulic excavators, as defined in ISO 7135 when equipped with an operator's station guard(s).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 148:1983, *Steel — Charpy impact test (V-notch)*.

ISO 898-1:—¹⁾, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs*.

ISO 898-2:1992, *Mechanical properties of fasteners — Part 2: Nuts with specified proof load values — Coarse thread*.

ISO 3164:1995, *Earth-moving machinery — Laboratory evaluations of protective structures — Specifications for deflection-limiting volume*.

ISO 5353:1995, *Earth-moving machinery, and tractors and machinery for agriculture and forestry— Seat index point*.

ISO 7135:—²⁾, *Earth-moving machinery — Hydraulic excavators — Terminology and commercial specifications*.

3 Definitions

For the purposes of this International Standard, the following definitions and abbreviations apply.

3.1

operator guards

system of a **top guard** (3.3) and a **front guard** (3.2) for the operator station of excavators

1) To be published. (Revision of ISO 898-1:1988)

2) To be published. (Revision of ISO 7135:1993)

3.2 front guard

device intended to provide object protection to the front of the operator station of excavators

3.3 top guard

device intended to provide falling object protection to the top of the operator station of excavators

3.4 deflection-limiting volume DLV

that volume, related to the operator, which serves to set limits and deflections permissible when performing laboratory evaluations of ROPS³⁾ and FOPS⁴⁾

NOTE — The volume, an approximation, is based on the seated dimensions of a large male operator. Adapted from ISO 3164:1995.

3.5 drop test object

object meeting the criteria outlined for either Level I or Level II acceptance used in structural loading testing

4 General

4.1 The operator station shall be equipped accordingly with respect to the use of the machine and against risk of falling and/or approaching objects, with one of the following arrangements:

- a top guard providing protection from falling objects;
- a front guard providing protection from objects that approach from the front;
- a combination of top and front guarding.

4.2 The areas protected include:

- an area which shall be not less than the horizontal projection of the DLV for front guards providing protection from objects approaching the front of the operator's station;
- an area which shall be not less than the vertical projection of the DLV for top guards providing protection from objects falling on the upper area of the operator's station.

4.3 Resistance to penetration of the guard to the point of infringement of the DLV is evaluated. The performance requirements of a representative specimen (i.e. within the manufacturer's specifications) are based on the performance of a proven structure under laboratory evaluation procedures.

4.4 Two acceptance levels are defined as follows:

- a) Level I acceptance is intended for protection from small objects, e.g. small rocks, small debris and other small objects encountered in operations such as highway maintenance, landscaping and other construction site services;
- b) Level II acceptance is intended for protection from large objects, e.g. large rocks, large debris and other large objects encountered in applications such as construction and demolition.

Compact excavators having a mass of 6 000 kg or less are excluded from acceptance Level II.

3) ROPS: Roll-over protective structure.

4) FOPS: Falling object protective structure.