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SIST EN ISO 3164:2000

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English version

Earth-moving machinery - Laboratory evaluations of protective structures - Specifications for deflection-limiting volume (ISO 3164:1995)

Engins de terrassement - Etude en laboratoire des structures de protection - Spécifications pour le volume limite de déformation (ISO 3164:1995)

Erbaumaschinen - Prüfung von Schutzaufbauten - Verformungsgrenzbereich (ISO 3164:1995)

This European Standard was approved by CEN on 15 April 1999.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Foreword

The text of the International Standard from Technical Committee ISO/TC 127 "Earth-moving machinery" of the International Organization for Standardization (ISO) has been taken over as an European Standard by Technical Committee CEN/TC 151 "Construction equipment and building material machines - Safety", the secretariat of which is held by DIN.

This European Standard replaces EN ISO 23164:1985.

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of an identical text or by endorsement, at the latest by November 1999, and conflicting national standards shall be withdrawn at the latest by November 1999.

This European Standard 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 ZB, which is an integral part of this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## Endorsement notice

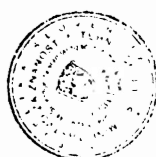
The text of the International Standard ISO 3164:1995 has been approved by CEN as a European Standard without any modification.

NOTE: Normative references to International Standards are listed in annex ZA (normative).

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**Annex ZA (normative)**  
**Normative references to international publications**  
**with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN</u>	<u>Year</u>
ISO 3411	1982	Earth-moving machinery - Human physical dimensions of operators and minimum operator space envelope	EN 23411	1988
ISO 5353	1995	Earth-moving machinery, and tractors and machinery for agriculture and forestry - Seat index point	EN ISO 5353	1998

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## Annex ZB (informative)

### Clauses of this European Standard addressing essential requirements or other provisions of EU directives.

This European standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of the following EU Directives.

Machinery Directive 89/392/EEC,  
its amendments 91/368/EEC and 93/44/EEC

Compliance with the clauses if this international standard provides one means of conforming with the specific essential requirements if the Directive concerned 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.

Compliance with the clauses if this international standard provides one means of conforming with the specific essential requirements if the Directive concerned and associated EFTA regulations.

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INTERNATIONAL  
STANDARD

**ISO**  
**3164**

Fifth edition  
1995-11-15

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**Earth-moving machinery — Laboratory  
evaluations of protective structures —  
Specifications for deflection-limiting  
volume**

*Engins de terrassement — Étude en laboratoire des structures de  
protection — Spécifications pour le volume limite de déformation*

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Reference number  
ISO 3164:1995(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.

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 3164 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors*.

This fifth edition cancels and replaces the fourth edition (ISO 3164:1992), of which it constitutes a technical revision.

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International Organization for Standardization

Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland



# Earth-moving machinery — Laboratory evaluations of protective structures — Specifications for deflection-limiting volume

## 1 Scope

This International Standard specifies the deflection-limiting volume (DLV) to be used when performing laboratory evaluations of structures which provide protection to operators of earth-moving machinery.

## 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 3411:—<sup>1)</sup>, *Earth-moving machinery — Human physical dimensions of operators and minimum operator space envelope*.

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

## 3 Definitions

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

**3.1 deflection-limiting volume;** DLV: Orthogonal approximation of a large, seated, male operator as defined in ISO 3411 wearing normal clothing and a protective helmet.

See figure 1.

**3.2 locating axis;** LA: Horizontal axis for positioning the DLV with respect to the seat index point (SIP).

See figure 1.

## 4 Accuracy

All linear dimensions of the DLV shown in figure 1 shall have a tolerance of  $\pm 5$  mm. The accuracy of locating the DLV with respect to the seat index point (SIP) shall be  $\pm 13$  mm, horizontally and vertically.

## 5 Location of DLV

NOTE 1 Machine controls and their components normally positioned in the DLV are not considered to violate the DLV.

**5.1** The DLV shall be located using the SIP, as defined in ISO 5353, as the reference point (see figure 1).

**5.2** For machines which have multiple machine function seats and therefore multiple SIPs (see ISO 5353:1995, 5.3.3), the SIP used by the operator to move the machine in the travel mode shall be used.

1) To be published. (Revision of ISO 3411:1982)