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Earth-moving machinery — Safety —

Part 6: Requirements for dumpers

Engins de terrassement — Sécurité —

Partie 6: Exigences applicables aux tombereaux

Reference number
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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).

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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

This document was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety, ergonomics and general requirements*.

This second edition cancels and replaces the first edition (ISO 20474-6:2008), which has been technically revised with the following changes:

— normative references have been updated;

— references to national and regional provisions in the withdrawn ISO/TS 20474-14 have been deleted;

— new safety requirements and protective measures have been added, including requirements for the operator station.

It is intended to be used in conjunction with ISO 20474-1.

A list of all parts in the ISO 20474 series, published under the general title, *Earth-moving machinery — Safety,* can be found on the ISO website.

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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 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.

ISO 20474 provides acceptable safety requirements for earth-moving machinery. This standard does not necessarily provide requirements to meet all national and regional regulatory provisions, e.g. Japan does not allow object handling with earth-moving machinery.

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Earth-moving machinery — Safety —

Part 6: Requirements for dumpers

1 Scope

This document gives the safety requirements specific to wheeled and crawler dumpers as defined in ISO 6165, including compact dumpers with seated or standing operator. It is not applicable to dumpers primarily designed for use on public roads. It is intended to be used in conjunction with ISO 20474-1, which specifies general safety requirements common to two or more earth-moving machine families. The specific requirements given in this document take precedence over the general requirements of ISO 20474-1.

This document deals with all significant hazards, hazardous situations and events relevant to the earth-moving machinery within its scope (see ISO 20474-1:2017, Annex A) when used as intended or under conditions of misuse reasonably foreseeable by the manufacturer. It specifies the appropriate technical measures for eliminating or reducing risks arising from relevant hazards, hazardous situations or events during commissioning, operation and maintenance.

This document is not applicable to machines 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 3164:2013, *Earth-moving machinery — Laboratory evaluations of protective structures — Specifications for deflection-limiting volume*

ISO 3449:2005, *Earth-moving machinery — Falling-object protective structures — Laboratory tests and performance requirements*

ISO 3471, *Earth-moving machinery — Roll-over protective structures — Laboratory tests and performance requirements*

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

ISO 7096:2000, *Earth-moving machinery — Laboratory evaluation of operator seat vibration*

ISO 7132, *Earth-moving machinery — Dumpers — Terminology and commercial specifications*

ISO 10268, *Earth-moving machinery — Retarders for dumpers and tractor-scrapers — Performance tests*

ISO 13333, *Earth-moving machinery — Dumper body support and operator's cab tilt support devices*

ISO 20474-1:2017, *Earth-moving machinery — Safety — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20474-1, ISO 7132, and the following apply.

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ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at http://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
dumper
self-propelled or towed crawler or wheeled machine with an open body, which transports and dumps or spreads material, and where loading is performed by means external to the dumper

Note 1 to entry: A compact dumper can have integral self-loading equipment.

[SOURCE: ISO 6165:2012, 4.6]

3.2
rigid frame dumper
dumper (3.1) with a rigid frame and wheel or crawler steering

Note 1 to entry: See Annex A for an illustration.

[SOURCE: ISO 6165:2012, 4.6.1, modified — By adding Note 1.]

3.3
articulated frame dumper
dumper (3.1) with an articulated frame which accomplishes the steering of the machine

Note 1 to entry: See Annex A for an illustration.

[SOURCE: ISO 6165:2012, 4.6.2, modified — By adding Note 1.]

3.4
swing dumper
dumper (3.1) having a 360° swing upper structure, whose upper structure consists of a rigid frame, the open body and the operator station, and whose undercarriage consists of a track type or wheeled unit

[SOURCE: ISO 6165:2012, 4.6.3]

3.5
compact dumper
articulated frame dumper (3.3) or *rigid frame dumper* (3.2) having an operating mass of 4 500 kg or less

Note 1 to entry: A compact dumper can have integral self-loading equipment.

Note 2 to entry: See Annex A for an illustration.

3.6
self-loading equipment
integral mounted bucket-supporting structure and linkage permanently fitted to the *dumper* (3.1), enabling it to fill its own open body with material

4 Safety requirements and protective measures

4.1 General

Dumpers shall comply with the safety requirements and protective measures of ISO 20474-1, in as far as those are not modified by the specific requirements of this clause.

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