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Earth-moving machinery — Safety —

Part 7: Requirements for scrapers

Engins de terrassement — Sécurité —

Partie 7: Exigences applicables aux décapeuses

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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

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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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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 20474-7:2008), which has been technically revised with the following changes:

— normative references have been updated.

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 7: Requirements for scrapers

1 Scope

This document gives the safety requirements specific to wheeled scrapers and crawler scrapers, excepting towed scrapers, as defined in ISO 6165. 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 6165, *Earth-moving machinery — Basic types — Identification and terms and definitions*

ISO 6393, *Earth-moving machinery — Determination of sound power level — Stationary test conditions*

ISO 6394, *Earth-moving machinery — Determination of emission sound pressure level at operator's position — Stationary test conditions*

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

ISO 7133, *Earth-moving machinery — Scrapers — Terminology and commercial specifications*

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

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 7133, and the following apply.

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/

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3.1
scraper
self-propelled or towed crawler or wheeled machine, which has a bowl with a cutting edge positioned between the axles and which cuts, loads, transports, discharges and spreads material through a forward motion

Note 1 to entry: A powered mechanism (elevator) fixed to the scraper bowl can assist the loading through a forward motion.

Note 2 to entry: See Annex A for illustrations.

[SOURCE: ISO 6165:2012, 4.7, modified — By adding Note 2.]

3.2
towed scraper
scraper (3.1) that is not self-propelled but which is propelled instead by a towing machine on which the operator's station is located

[SOURCE: ISO 6165:2012, 4.7.1]

4 Safety requirements and protective measures

4.1 General

Scrapers 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.

4.2 Operator's seat

ISO 20474-1:2017, 4.4.1, shall apply, with the addition that for scrapers without axle or frame suspension the seat shall comply with spectral class EM 2 as given in ISO 7096:2008.

4.3 Retarder

If a retarder system is installed it shall meet the requirements of ISO 10268.

4.4 Articulated frame lock

ISO 20474-1:2017, 4.14.5 is not applicable to scrapers.

4.5 Towing device

ISO 20474-1:2017, 4.15.5, shall apply, except that ISO 20474-1 does not consider to be towing devices those attachment points (push plates, arc equipment, etc.) that are present on scrapers only to allow two machines to assist one another in loading.

4.6 Noise

4.6.1 Sound power level

ISO 20474-1:2017, 4.13.2.1, shall apply, and the sound power level shall be measured in accordance with ISO 6393.

4.6.2 Emission sound pressure level at operator's station

ISO 20474-1:2017, 4.13.2.2, shall apply, and the emission sound pressure level at the operator's station shall be measured in accordance with ISO 6394.

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