
Earth-moving machinery — Safety —
Part 13:
Requirements for rollers

Engins de terrassement — Sécurité —

Partie 13: Exigences applicables aux compacteurs



Reference number
ISO 20474-13:2008(E)

Documents
Document Sharing Hub
© ISO 2008

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2008

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	2
4 Safety requirements and/or protective measures	3
4.1 General.....	3
4.2 Non-riding machines	3
4.3 Operator's station (ride-on machines).....	5
4.4 Operator's seat.....	5
4.5 Controls and indicators.....	5
4.6 Access system to operator's station and to maintenance points	6
4.7 Roll-over protective structure (ROPS).....	6
4.8 Noise and vibration.....	6
5 Verification of safety requirements and/or protective measures	7
6 Information for use	7
6.1 Warning signals and devices	7
6.2 Operator's manual	7
6.3 Marking	7
Annex A (normative) Noise-test code for non-riding and remote-control vibratory rollers with working width ≤ 1 m.....	8
Annex B (normative) Test code for hand-arm vibration of non-riding vibratory rollers with working width ≤ 1 m.....	17
Bibliography	21

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 20474-13 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety, ergonomics and general requirements*.

ISO 20474 consists of the following parts, under the general title *Earth-moving machinery — Safety*:

- *Part 1: General requirements*
- *Part 2: Requirements for tractor-dozers*
- *Part 3: Requirements for loaders*
- *Part 4: Requirements for backhoe loaders*
- *Part 5: Requirements for hydraulic excavators*
- *Part 6: Requirements for dumpers*
- *Part 7: Requirements for scrapers*
- *Part 8: Requirements for graders*
- *Part 9: Requirements for pipelayers*
- *Part 10: Requirements for trenchers*
- *Part 11: Requirements for earth and landfill compactors*
- *Part 12: Requirements for cable excavators*
- *Part 13: Requirements for rollers*
- *Part 14: Information on national and regional provisions [Technical Specification]*

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.

Provisions that are applicable for Australia, EU, Japan or the USA, and which are mandatory for compliance with specific governmental laws, directives or regulations in force in the particular country or region, are given in ISO/TS 20474-14.

NOTE Other countries or regions may also have regional requirements.

AVADocuments.com

Earth-moving machinery — Safety —

Part 13: Requirements for rollers

1 Scope

This part of ISO 20474 gives the safety requirements specific to rollers as defined in ISO 6165. It is intended to be used in conjunction with ISO 20474-1, which specifies general safety requirements common to earth-moving machine families, and with ISO/TS 20474-14, which gives information on provisions that are mandatory in particular countries or regions. The specific requirements given in this part of ISO 20474 take precedence over the general requirements of ISO 20474-1.

This part of ISO 20474 deals with all significant hazards, hazardous situations and events relevant to the earth-moving machinery within its Scope when used as intended or under conditions of misuse reasonably foreseeable by the manufacturer (see also ISO/TS 20474-14). It specifies the appropriate technical measures for eliminating or reducing risks arising from significant hazards, hazardous situations or events during commissioning, operation and maintenance. It is not applicable to machines manufactured before the date of its publication.

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 3450, *Earth-moving machinery — Braking systems of rubber-tyred machines — Systems and performance requirements and test procedures*

ISO 3744, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*

ISO 6165:2006, *Earth-moving machinery — Basic types — Identification and terms and definitions*

ISO 6682, *Earth-moving machinery — Zones of comfort and reach for controls*

ISO 8811, *Earth-moving machinery — Rollers and compactors — Terminology and commercial specifications*

ISO 11201, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane*

ISO 13850, *Safety of machinery — Emergency stop — Principles for design*

ISO 17063, *Earth-moving machinery — Braking systems of pedestrian-controlled machines — Performance requirements and test procedures*

ISO 20474-1:2008, *Earth-moving machinery — Safety — Part 1: General requirements*

ISO 20643, *Mechanical vibration — Hand-held and hand-guided machinery — Principles for evaluation of vibration emission*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 20474-1 and ISO 8811, and the following, apply.

**3.1
roller**
self-propelled or towed machine having a compaction device, consisting of one or more metallic cylindrical bodies (drums) or rubber tyres, which compacts material such as crushed rock, earth, asphalt or gravel through a rolling and/or vibrating action of the compaction device

[ISO 6165:2006, definition 4.10]

NOTE The metallic cylindrical bodies can be either rubber-coated or fitted with pads.

**3.1.1
single-drum roller**
self-propelled compaction machine with one vibrating metallic cylindrical body (drum) and two rubber tyres or two tracks

**3.1.2
tandem roller**
self-propelled compaction machine with one metallic cylindrical body (drum) in the front and one in the rear

NOTE The cylindrical drums can be either static or vibrating and can be split.

**3.1.3
combined roller**
self-propelled compaction machine with one or more metallic cylindrical body (drum) and more than two rubber tyres

**3.1.4
three-wheel roller**
self-propelled compaction machine with one metallic cylindrical body (drum) in the front (or rear) and two in the rear (or front)

NOTE The drums can be split.

**3.1.5
pneumatic tyre roller**
self-propelled compaction machine with three or more tyres in the front and the rear

**3.2
direct-control machine**
self-propelled earth-moving machinery where the machine is controlled by an operator in physical contact with the machine

[ISO 6165:2006, definition 3.2]

**3.2.1
ride-on machine**
self-propelled **direct-control machine** (3.2) where the control devices are located on the machine and the machine is controlled by a seated or standing operator

[ISO 6165:2006, definition 3.2.1]

3.2.2**non-riding machine**

self-propelled **direct-control machine** (3.2) where the control devices are located on the machine and the machine is controlled by a pedestrian operator (neither seated nor standing on the machine)

[ISO 6165:2006, definition 3.2.2]

3.3**remote-control machine**

self-propelled earth-moving machinery where the machine is controlled by the transmission of signals from a control box (transmitter) that is not located on the machine to a receiving unit (receiver) located on the machine

[ISO 6165:2006, definition 3.3]

3.4**towed roller**

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

[ISO 6165:2006, definition 4.10.1]

4 Safety requirements and/or protective measures

4.1 General

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

4.2 Non-riding machines

4.2.1 General

ISO 20474-1:2008, 4.1, shall apply, as applicable, together with the following (4.2.2 and 4.2.3).

4.2.2 Handle bar

To prevent dangerous vertical swinging of the steering element (handle bar) of the single-drum non-riding roller, movement of the handle shall be not less than 0,2 m and not more than 1,4 m above the ground (see Figure 1).