

Second edition
2008-08-01

Agricultural and forestry tractors — Roll-over protective structures on narrow-track wheeled tractors —

Part 1: Front-mounted ROPS

Tracteurs agricoles et forestiers — Structures de protection contre le retournement (ROPS) pour tracteurs à roues à voie étroite —

Partie 1: ROPS montées à l'avant



Reference number
ISO 12003-1:2008(E)

© ISO 2008

This is a preview of "ISO 12003-1:2008". [Click here to purchase the full version from the ANSI store.](#)

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

This is a preview of "ISO 12003-1:2008". Click here to purchase the full version from the ANSI store.

Contents

Page

Foreword	v
Introduction.....	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Symbols.....	4
5 Preliminary tests.....	4
5.1 General requirements	4
5.2 Lateral stability test.....	5
5.3 Non-continuous rolling test.....	5
6 Tractor and test preparation	6
6.1 Test methods	6
6.2 General rules governing preparation for tests	6
7 Test apparatus and equipment	7
7.1 Apparatus for both dynamic and static testing.....	7
7.2 Apparatus for dynamic testing	9
7.3 Apparatus for static testing.....	14
8 Test procedures.....	14
8.1 General requirements	14
8.2 Test sequence.....	15
8.3 Rear fixture test procedure.....	15
8.4 Dynamic (impact) test procedures for front-mounted ROPS.....	15
8.5 Static test procedures for front-mounted ROPS.....	18
8.6 Vertical crushing test procedure	19
8.7 Additional crushing tests	20
8.8 Observations during testing	20
9 Seat index point.....	20
10 Clearance zone	20
10.1 General	20
10.2 Clearance zone for tractors with a non-reversible seat	21
10.3 Clearance zone for tractors with a reversible driving position	22
11 Tolerances.....	23
12 Acceptance conditions	23
12.1 General requirements	23
12.2 After impact loads	24
12.3 After static horizontal loads	24
12.4 Cold weather embrittlement	25
13 Extension to other models	27
14 Labelling.....	28
15 Test report.....	28
Annex A (normative) Requirements for providing resistance to brittle fracture of front-mounted ROPS at a reduced operation temperature.....	29
Annex B (normative) Test report for front-mounted ROPS	31

This is a preview of "ISO 12003-1:2008". [Click here to purchase the full version from the ANSI store.](#)

Annex C (normative) Non-continuous rolling test procedure — Calculation method.....40

Bibliography44

This is a preview of "ISO 12003-1:2008". [Click here to purchase the full version from the ANSI store.](#)

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 12003-1 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 2, *Common tests*.

This second edition cancels and replaces the first edition (ISO 12003-1:2002), which has been technically revised.

ISO 12003 consists of the following parts, under the general title *Agricultural and forestry tractors — Roll-over protective structures on narrow-track wheeled tractors*:

- *Part 1: Front-mounted ROPS*
- *Part 2: Rear-mounted ROPS*

Introduction

Testing of roll-over protective structures (ROPS) for narrow-track tractors for agriculture and forestry aims at minimizing the likelihood of driver injury resulting from accidental overturning during normal operation (e.g. field work) of the tractor. The strength of the front-mounted ROPS is tested by applying either static or dynamic (impact) loads to simulate actual loads which may be imposed on the front-mounted ROPS when the tractor overturns either to the rear or to the side without free fall. The tests allow observations to be made on the strength of the front-mounted ROPS and the attachment brackets to the tractor and also of the tractor parts that may be affected by the load imposed on the front-mounted ROPS.

Provision is made to cover both tractors with the conventional forward facing driver's position only and those with a reversible driver's position, which is in agreement with the relevant OECD test code practice (Reference [5]). For tractors with a reversible driver's position, a clearance zone is defined to be the combined clearance zones for the two driving positions.

It is recognized that there may be designs of tractors, e.g. lawn-mowers, and certain forestry machines such as forwarders, for which this part of ISO 12003 is not appropriate.

NOTE For regular tractors, see ISO 3463^[3] (dynamic test) and ISO 5700^[4] (static test).