

This is a preview of "ISO 5006:2006". [Click here to purchase the full version from the ANSI store.](#)

First edition
2006-11-01

Earth-moving machinery — Operator's field of view — Test method and performance criteria

Engins de terrassement — Visibilité du conducteur — Méthode d'essai et critères de performance



Reference number
ISO 5006:2006(E)

© ISO 2006

This is a preview of "ISO 5006:2006". [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.

© ISO 2006

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 5006:2006". [Click here to purchase the full version from the ANSI store.](#)

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	2
4 Basic dimensions	4
4.1 Light spacing dimensions	4
4.2 Masking dimensions.....	5
5 Test apparatus	5
6 Machine test configuration	5
7 Performance criteria for additional devices.....	6
7.1 Performance criteria for mirrors	6
7.2 Performance criteria for CCTV system.....	6
8 Measurement procedure	6
8.1 Test-surface marking and machine location on the test surface	6
8.2 Positioning of the test apparatus	7
8.3 Measurement of the maskings	8
9 Calculation method.....	9
9.1 Calculation procedure for the determination of maskings at the visibility test circle or the rectangular 1 m boundary.....	9
9.2 Computer-simulation.....	10
10 Evaluation method and performance criteria	11
10.1 Visibility performance criteria on the visibility test circle.....	11
10.2 Visibility performance criteria for the rectangular 1 m boundary	11
10.3 Visibility maskings that exceed the visibility performance criteria with direct view.....	15
10.4 Requirements for larger, derivative and other types of earth-moving machines not covered in Table 1.....	16
11 Test report	17
11.1 Machine details	17
11.2 Drawing.....	17
12 Visibility information for the operator's instructions.....	17
Annex A (informative) Dimensions and position of HH and RR.....	18

This is a preview of "ISO 5006:2006". [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 5006 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors*.

This first edition of ISO 5006 cancels and replaces ISO 5006-1:1991, ISO 5006-2:1993 and ISO 5006-3:1993, which have been technically revised.

This is a preview of "ISO 5006:2006". [Click here to purchase the full version from the ANSI store.](#)

Introduction

The purpose of this International Standard is to address operator's visibility in such a manner that the operator can see around the machine to enable proper, effective and safe operation that can be quantified in objective engineering terms. This International Standard includes a test method that uses two lights placed at the location of the operator's eyes. The maskings due to the machine, its components and attachments are determined around the machine, on a boundary line 1 m away from the smallest rectangle that encompasses the machine and on the visibility test circle. The radius of the circle is 12 m. The method used doesn't capture all of the aspects of operator's visibility, but provides information to assist in determining the acceptability of visibility from the machines. Criteria are included in this International Standard to provide guidance for designers as to the extent of visibility maskings that are acceptable.

Because of the operator's capability and the operation mode of the machines, the test method divides the area around the machine into six sectors: the front (sector A), to the front sides (sectors B and C), to the rear sides (sectors D and E), and to the rear (sector F).

For each of the sectors, the operator has physical characteristics that are considered. Besides the eye spacing of 65 mm (the nominal binocular eye spacing of the 50th percentile operator), additional adjustments can be made considering that the operator has the capability to turn the head and move the body torso side to side. This allows the range of eye spacing to be enlarged up to 405 mm for the sectors A, B and C. For the sectors D, E and F, the turning of the operator's head and the rotation of the body torso are restricted by the physical aspects for seated operator. Thus, the maximum achievable eye spacing is 205 mm for sectors D, E, and F. For certain machine types, the eye spacings used are less than the maximum permitted values based on the ergonomics of the operator. This is done to maintain the current state-of-the-art of machines.

The established visibility performance criteria are based on the physical aspects of the human operators and ground personnel using various representative dimensions and the design of machines that have provided acceptable visibility. To establish the visibility criteria, a combination of the eye spacings and masking widths are used. Multiple maskings in sectors are acceptable where there is adequate spacing between the individual maskings.

Where the direct visibility is considered inadequate, additional devices for indirect visibility [mirrors or closed-circuit television cameras (CCTV)], can be used to achieve acceptable visibility. For the rectangular 1 m boundary (RB) additional devices for indirect visibility (mirrors or CCTV) are preferred. Other aids (see ISO 16001) can be used exceptionally.

Jobsite organization can be an additional effective measure to compensate for remaining visibility maskings.