

INTERNATIONAL STANDARD

ISO
10263-6

First edition
1994-12-15

Earth-moving machinery — Operator enclosure environment —

Part 6:

Determination of effect of solar heating on
operator enclosure

Engins de terrassement — Ambiance dans l'enceinte de l'opérateur —

*Partie 6: Détermination de l'effet du rayonnement solaire sur l'enceinte
de l'opérateur*



Reference number
ISO 10263-6:1994(E)

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.

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.

International Standard ISO 10263-6 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors*.

ISO 10263 consists of the following parts, under the general title *Earth-moving machinery — Operator enclosure environment*:

- Part 1: *General and definitions*
- Part 2: *Air filter test*
- Part 3: *Operator enclosure pressurization test method*
- Part 4: *Operator enclosure ventilation, heating and/or air-conditioning test method*
- Part 5: *Windscreen defrosting system test method*
- Part 6: *Determination of effect of solar heating on operator enclosure*

© ISO 1994

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 the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Earth-moving machinery — Operator enclosure environment —

Part 6:

Determination of effect of solar heating on operator enclosure

1 Scope

This part of ISO 10263 specifies a test method for applying a simulated solar load in the laboratory and determining the radiant heat energy by artificial light source or a natural solar load which affects an operator enclosure of an earth-moving machine. This has to be taken into consideration for determination of air circulation and cooling requirements to maintain a comfortable temperature within the operator enclosure.

It allows the radiant energy affecting an operator enclosure to be determined during the tests specified in ISO 10263-4.

2 Measurement of radiant energy of solar load

2.1 Place an appropriate measuring device such as a pyranometer, with an accuracy of $\pm 5\%$ of the observed value, in the same general area as the enclosure under test.

2.2 During the test, measure the radiance at 10 min intervals. Take an average of these readings and record them in the test report.

2.3 A measured average radiant energy of $950 \text{ W/m}^2 \pm 95 \text{ W/m}^2$ is considered a "normal" test condition.

3 Method of simulating solar load

Place light sources which have 45 % or more of their radiated energy above 700 nm in banks horizontally above the enclosure being tested. The area within the perimeter of the light banks shall extend a minimum of 25 % beyond the projected area of the enclosure under test (see figure 1).

It is recommended that the method of controlling the intensity should not change the spectral distribution of the lamps.

4 Calibration of radiant intensity from simulated solar load

4.1 Mount a pyranometer on a tripod and maintain it horizontal, such that the measurement point is $100 \text{ mm} \pm 100 \text{ mm}$ lower than the roof line of the enclosure under test.

4.2 Take readings at points on or within the perimeter of the area of uniform intensity as shown in figure 1. Make sufficient measurements to ensure uniformity, with the maximum distance between measuring points no more than 1 200 mm.

4.3 The intensity level shall be adjusted to an average of $950 \text{ W/m}^2 \pm 95 \text{ W/m}^2$. No individual reading shall vary by more than 10 % from the average.

The intensity level shall be recalibrated every six months or every time the elevation of the roof line of the test enclosure is changed.