



**International
Standard**

ISO 16840-13

Wheelchair seating —

Part 13:

**Determination of the lateral
stability property of a seat cushion**

AMENDMENT 1

**First edition
2021-06**

**AMENDMENT 1
2025-03**



COPYRIGHT PROTECTED DOCUMENT

© ISO 2025

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 173, *Assistive products*, Subcommittee SC 1, *Wheelchairs*.

A list of all parts in the ISO 16840 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

STANDARDSISO.COM : Click to view the full PDF of ISO 16840-13:2021/Amd 1:2025

Wheelchair seating —

Part 13:

Determination of the lateral stability property of a seat cushion

AMENDMENT 1

8.3

Replace the text with the following:

Calculate the lateral tilt, $\Delta T_L(t)$, for each time point, as the mean difference between baseline medial-lateral tilt angle, $\theta_{m,l}^0$, and lateral tilt angle after the lateral load shift, $\theta_{m,l}^t$, where t is the time.

$$\Delta T_L(t) = \left| \theta_{m,l}^t - \theta_{m,l}^0 \right|$$

Calculate the anterior-posterior tilt, $\Delta T_{AP}(t)$, after 60 seconds, as the mean difference between baseline anterior-posterior tilt angle, $\theta_{a,p}^0$, and anterior-posterior tilt angle after the lateral load shift, $\theta_{a,p}^t$, at the 60 second (t) time point.

$$\Delta T_{AP}(t) = \left| \theta_{a,p}^t - \theta_{a,p}^0 \right|$$

8.4

Replace the text with the following:

The test report shall contain the following information:

- a) reference to this document, i.e. ISO 16840-13:2021;
- b) name and address of the testing institution;
- c) accreditation status of the testing institution, if any;
- d) date of issue of the test report;
- e) a unique test report reference;
- f) date(s) of tests;
- g) model, type, and nominal size that uniquely describes the test cushion, including serial and batch numbers, and internal tracking numbers, if available;
- h) the name and address of the manufacturer of the cushion;
- i) a colour photograph showing the cushion in isometric view with and without the cover (if removable);
- j) the cushion cover used;
- k) the preparation of the test cushion, including environment, set up, and adjustment, and RCLI used for test;

- l) sample photos of the testing, and test cushion including set up and adjustment, and RCLI used for test;
- m) a list of the equipment used, and where relevant, a statement confirming that, prior to testing, the equipment was calibrated or verified against measurement standards traceable to international or national measurement standards (where applicable), and the respective calibration dates;
- n) lateral tilt and anterior-posterior tilt as calculated in 8.3;
- o) calculation and disclosure of measurement uncertainty;

NOTE When ensuring that the sources of variability in reported results are identified, controlled and reported, the reported values can be the accumulation of natural variation in the article being tested and the test process including instrumentation and operator variability. When test history data on multiple test articles are available, the ISO 5725 series and ISO 21748 can be used to identify, control, and report sources of uncertainty.

- p) any deviations from the test methods of this document.

STANDARDSISO.COM : Click to view the full PDF of ISO 16840-13:2021/Amd.1:2025