



# FINAL DRAFT Amendment

## ISO 16840-2:2018/ FDAM 1

### Wheelchair seating —

Part 2:

### Determination of physical and mechanical characteristics of seat cushions intended to manage tissue integrity

AMENDMENT 1: Updates and addition  
of new Annex covering alternatively  
sized cushions

ISO/TC 173/SC 1

Secretariat: **SABS**

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

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

[ISO 16840-2:2018/FDAmD 1](https://standards.iteh.ai/catalog/standards/iso/5183a588-2a74-49c6-bb27-18c688cf8d19/iso-16840-2-2018-fdamd-1)

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#### 5.7

Replace list items a) and b) with the following:

- a) Two 50 mm  $\pm$  2 mm diameter indenters, centres spaced 110 mm  $\pm$  5 mm apart, representing ischial tuberosities.
- b) Two 25 mm  $\pm$  1 mm diameter indenters, centres spaced 350 mm  $\pm$  10 mm apart, representing the trochanters.

#### 6.1

Replace the text with the following:

##### 6.1 Choice of cushion

Obtain an unused sample seat cushion for testing with a nominal width of 400 mm to 450 mm. If a cover is provided, ensure that it is fitted to the cushion in the orientation specified by the manufacturer.

A cushion with a 400 mm to 450 mm nominal width is the size for the RCLI indenter specified in Annex A and the LCI indenter in 5.7. Indenters for testing alternative cushion sizes are specified in Annexes D and E.

#### 11.2

Replace list items f) to k) with the following:

- f) Apply a vertical load of 140 N  $\pm$  5 N.
- g) Measure the vertical distance from the horizontal supporting surface to the inferior surface of the LCI after 300 s  $\pm$  10 s to the nearest 1 mm ( $L_1$ ).
- h) Increase the load on LCI to 186 N  $\pm$  5 N.
- i) Re-measure vertical distance from the horizontal supporting surface to the inferior surface of the LCI to the nearest 1 mm ( $L_2$ ) 60 s  $\pm$  5 s after the increased load is applied.
- j) Increase the load on LCI to 232 N  $\pm$  5 N.
- k) Re-measure vertical distance from the horizontal supporting surface to the inferior surface of the LCI to the nearest 1 mm ( $L_3$ ) 60 s  $\pm$  5 s after the increased load is applied.

11.3

Replace the text with the following:

**11.3 Method of calculation**

- a) Calculate loaded contour depth  $L_{CD} = L_{th} - L_1$  and record to the nearest 1 mm for each trial.
- b) Calculate 33 % overload deflection  $D_{0.33} = L_1 - L_2$  and record to the nearest 1 mm for each trial.
- c) Calculate 66 % overload deflection  $D_{0.66} = L_1 - L_3$  and record to the nearest 1 mm for each trial.

11.4

Replace the text with the following:

**11.4 Test report**

In addition to the information required as specified in Clause 16, report the median values for loaded contour depth ( $L_{CD}$ ), 33 % overload deflection ( $D_{0.33}$ ), and 66 % overload deflection ( $D_{0.66}$ ).

Annex A

Replace Table A.1 is with the following:

**Table A.1 — Cone and sphere dimensions**

Cushion width	Indenter width	Indenter length	Anterior - posterior location of load	Cone angle	Cone width first cut	Cone height w/o sphere	Height with sphere	Major diameter of cone	Minor diameter of cone	Length of cone edge
(nom.) mm	( $W_i$ ) mm	( $L_i$ ) mm	( $l_f$ ) mm	( $\theta$ ) °	( $W_c$ ) mm	( $H_c$ ) mm	( $H_{cs}$ ) mm	( $D_c$ ) mm	( $d_c$ ) mm	mm
400 – 450	360	500	127	10	180	367	494	254	124	373
NOTE 1 All tolerances (except cushion width) $\pm 2$ mm.										
NOTE 2 The RCLI is constructed from cones and spheres machined according to Figure A.1. These components are assembled to form the required shape according to Table A.1.										

Annex D

Replace the first sentence with the following:

This document utilizes RCLIs designed to test cushions with widths of 400 mm to 450 mm.

Replace Table D.1 with the following: