# INTERNATIONAL STANDARD

ISO 8727

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## Mechanical vibration and shock — Human exposure — Biodynamic coordinate systems

## **AMENDMENT 1**

Vibrations et chocs mécaniques — Exposition de l'individu — Systèmes de coordonnées biodynamiques

AMENDEMENT 1



ISO 8727:1997/Amd.1:2015(E)



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The committee responsible for this document is ISO/TC 108, *Mechanical vibration, shock and condition monitoring*, Subcommittee SC 4, *Human exposure to mechanical vibration and shock*.

## Mechanical vibration and shock — Human exposure — Biodynamic coordinate systems

## **AMENDMENT 1**

Page 1, Clause 2

Replace this clause with the following:

#### 2 Normative references

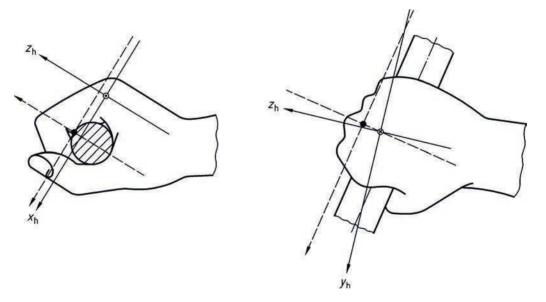
The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1503, Spatial orientation and direction of movement — Ergonomic requirements

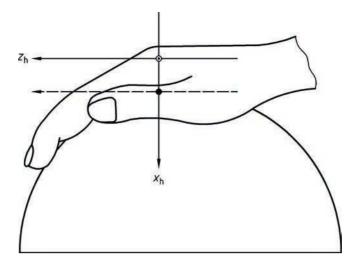
ISO 5805, Mechanical vibration and shock — Human exposure — Vocabulary

Page 11, Figure A.6

Replace this figure with the following:



a) "Handgrip" position (in this position, the hand adopts a standardized grip on a cylindrical bar)



## b) "Flat palm" position (in this position, the hand presses down onto a sphere)

#### Key

- biodynamic coordinate system
- -- basicentric coordinate system

NOTE The origin of the biodynamic coordinate system is the head of the third metacarpal (distal extremity). The  $z_h$ -axis (i.e. hand axis) is defined as the longitudinal axis of the third metacarpal bone and is oriented positively towards the distal end of the finger. The  $x_h$ -axis passes through the origin, is perpendicular to the  $z_h$ -axis, and is positive in the forwards direction when the hand is in the normal anatomical position (palm facing forwards). The  $y_h$ -axis is perpendicular to the other two axes and is positive in the direction towards the fifth finger (thumb). In practice, a basicentric coordinate system is used in which the y-axis is commonly parallel to the handle axis, as shown here.

Figure A.6 — Coordinate systems for the hand

Page 13, Annex C

Replace this annex with the following:

#### **Bibliography**

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- [2] ISO 2631-1, Mechanical vibration and shock Evaluation of human exposure to whole-body vibration Part 1: General requirements
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- [4] ISO 5349-2, Mechanical vibration Measurement and evaluation of human exposure to hand-transmitted vibration Part 2: Practical guidance for measurement at the workplace
- [5] ISO 5353, Earth-moving machinery, and tractors and machinery for agriculture and forestry Seat index point
- [6] ISO 5982, Mechanical vibration and shock Range of idealized values to characterize seated-body biodynamic response under vertical vibration
- [7] ISO 6897, Guidelines for the evaluation of the response of occupants of fixed structures, especially buildings and off-shore structures, to low-frequency horizontal motion (0,063 to 1 Hz)
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