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Stationäre Trainingsgeräte - Teil 1: Allgemeine sicherheitstechnische Anforderungen und Prüfverfahren (ISO/DIS 20957-1:2023)

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Stationary training equipment —

Part 1:
General safety requirements and test methods

Équipement d'entraînement fixe —

Partie 1: Exigences générales de sécurité et méthodes d'essai

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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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 83, *Sports and recreational equipment*, and by Technical Committee CEN/TC 136, *Sports, playground and other recreational facilities and equipment*, in collaboration.

This third edition cancels and replaces the second edition (ISO 20957-1:2013), which has been technically revised.

The main changes are as follows:

— Clause 2 updated to remove unused references.

— Clause 3 updated by removing, renaming, and adding entries.

— Clause 5 updated so that Clause 5.3.4 combines requirements for squeeze and shear points and Clause 5.13 combines loading requirements.

— Clause 6 updated so that Clause 6.15 creates a single test method for loading testing.

— Annex A added to provide informative examples for carrying out load testing.

— Annex ZA updated to align with the safety requirements of IEC Decision (EU) No 476/2011.

A list of all parts in the ISO 20957 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.

Introduction

This part of ISO 20957 specifies safety requirements that are applicable to all stationary training equipment. For specific types of equipment these requirements are supplemented or modified by the requirements of specific standards which have been issued as additional parts of this International Standard.

Where a specific part of ISO 20957 exists, this part of ISO 20957 should be used in conjunction.

Stationary training equipment —

Part 1: General safety requirements and test methods

1 Scope

This part of ISO 20957 specifies general safety requirements and test methods for indoor stationary training equipment unless modified in the other parts of this International Standard. This part of ISO 20957 also covers environmental aspects.

It also specifies a classification system (see Clause 4).

This part of ISO 20957 is applicable to all stationary training equipment as defined in 3.1. This includes equipment for use in training areas of organizations such as sport associations, educational establishments, hotels, sport halls, clubs, rehabilitation centres and studios (classes S and I) where access and control is specifically regulated by the owner (person who has the legal responsibility), equipment for domestic use (class H) and other types of equipment including motor driven equipment as defined in 3.1.

The requirements of a specific part of ISO 20957 take priority over the corresponding requirements of this general standard.

If the intended use of the stationary training equipment is for children under 14 years other standards are applicable unless such stationary training equipment is intended for educational purposes in schools and other pedagogical contexts for children under the surveillance of a qualified adult instructor.

This part of ISO 20957 does not apply to stationary training equipment intended for outdoor use without supervision e.g. freely accessible.

NOTE 1 If a user has special needs (medical rehabilitation, disability) it is essential that the owner (the person with legal responsibility) conducts a specific risk assessment to determine safe use and if necessary to ensure trained staff are available to supervise the activity.

NOTE 2 In the event that the stationary training equipment is intended for medical purposes, attention is drawn to the requirements of MDR 2017/745/EU in addition to the requirements of this part of ISO 20957.

NOTE 3 In the event that the stationary training equipment is intended for children's purposes, attention is drawn to the requirements of Council Directive of 18 June 2009 on the approximation of the laws of the Member States relating to safety of toys 2009/48/EC in addition to the requirements of this part of ISO 20957.

NOTE 4 In the event that the stationary training equipment is designed to be accessible to people with disability, attention is drawn to any relevant national guidelines.

NOTE 5 Concerning flammability, attention is drawn to national regulations.

NOTE 6 In the event that the stationary training equipment contains environmental critical components, attention is drawn to national regulations, e.g. European Directives.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction*

EN 60335-1:2012, *Household and similar electrical appliances — Safety — Part 1: General requirements*

EN 60601-1:2006, *Medical electrical equipment — Part 1: General requirements for basic safety and essential performance*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
stationary training equipment
equipment that is not moved as a unit during use and either stands freely on the floor or is attached to a floor, wall, ceiling or other fixed structure

Note 1 to entry: Stationary training equipment can be used for example for the following:

a) body building or body styling;

b) health/fitness training;

c) physical education;

d) training specific to competition and related sports activities;

e) preventive treatment and rehabilitation.

3.2
training area
area occupied by the user and the equipment while exercising over the full range of movement

3.3
free area
area in addition to the training area which is required for the user or third party to access the equipment and/or conduct an emergency dismount over and above the full range of movement

3.4
accessible hand and foot area
area accessible to user or to third parties when the equipment is in normal use, during exercise set-up, grasping, adjusting the equipment or the position of the body for exercise

3.5
range of movement
space in which the user or part of the equipment is moving according to the instructions given in the user's manual

3.6
body mass
maximum specified user mass as described in the user's manual or 100 kg, whichever is greater

3.7
maximum training load
maximum load specified by the manufacturer in the user's manual and the marking

3.8
speed-dependent resistance system
resistance system in which the resistance is directly proportional to the speed and cannot be adjusted by other means

EXAMPLE Air fan resistance devices.

3.9
speed-independent resistance system
resistance system in which the resistance can be adjusted independently from the speed

EXAMPLE Adjustable braking mechanism.

3.10
heart rate control mode
programme that allows the user to maintain training with a predetermined heart rate level by adjusting the loading parameters automatically to the user's heart rate response

Note 1 to entry: Loading parameters can be resistance or speed or incline or a combination of these.

3.11
heart rate measurement system
system which displays the individual heart rate of the user

3.12
display
device that provides information to the user

3.13
squeeze point
place where parts of the equipment can move against each other, or against a fixed area, which may result in parts of user's/third person's body being crushed

3.14
shear point
place where part of the equipment can move past a fixed or moving part, or past a fixed area, which may result in parts of user's/third person's body being cut

3.15
cycle
movement associated to one complete operation of a single component from start to start of a repetitive process

EXAMPLE A typical component could be a pedal, handlebar or seat.

3.16
most onerous position
position that maximizes the likelihood of a negative outcome

EXAMPLE The most onerous position in the case of stability is the orientation of the equipment in which it is least stabile, i.e. the centre of gravity of the equipment is as high as possible and/or outside or as close as possible to the edge of equipment's base while the equipment is placed on a tilted table.

3.17
flywheel
rotating mass designed to create inertia

3.18
footplatform
surface intended to support the foot during equipment use, or during mounting or dismounting of the equipment