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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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Published in Switzerland

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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. [www.iso.org/directives](http://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. [www.iso.org/patents](http://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.

ISO 20957-1 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.

ISO 20957 consists of the following parts, under the general title *Stationary training equipment*:

- Part 1: General safety requirements and test methods
- Part 2: Strength training equipment, additional specific safety requirements and test methods
- Part 4: Strength training benches, additional specific safety requirements and test methods
- Part 5: Pedal crank training equipment, additional specific safety requirements and test methods
- Part 6: Treadmills, additional specific safety requirements and test methods
- Part 7: Rowing machines, additional specific safety requirements and test methods
- Part 8: Steppers, stairclimbers and climbers — Additional specific safety requirements and test methods
- Part 9: Elliptical trainers, additional specific safety requirements and test methods
- Part 10: Exercise bicycles with a fixed wheel or without freewheel, additional specific safety requirements and test methods

Part 3 has been amalgamated with Part 2 after CEN Enquiry.

## 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.

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# 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 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 Council Directive of 14 June 1993 on the approximation of the laws of the Member States relating to medical devices 93/42/EEC 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, 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 20957-1:2013(E)

ISO 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method*

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

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

EN 60601-1, *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.

**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 safe operational area**  
area in which no third party has access to dangerous parts of the equipment when in use

**3.4 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

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

**3.6 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

**3.7 dynamic direction**  
direction in which the force is applied during a normal exercise as described in the user's manual

**3.8 bodymass**  
maximum specified user mass as described in the user's manual or 100 kg, whichever is greater



**3.9****intrinsic loading**

loading due to the body mass

**3.10****extrinsic loading**

load applied to the product from any other source than the body mass

**3.11****maximum specified load**

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

**3.12****ergometer**

piece of stationary training equipment that measures the input of power in Watts with a specific accuracy as defined in the specific part of the standard

Note 1 to entry: This term can only be used for stationary training equipment, which fulfils this condition.

**3.13****speed dependent training equipment**

training equipment in which the resistance cannot be adjusted and is proportional to the speed

EXAMPLE Air fan resistance devices.

**3.14****speed independent training equipment**

training equipment in which the resistance can also be adjusted by other means than speed

EXAMPLE Adjustable braking mechanism.

**3.15****power driven training equipment**

training equipment which is driven by external power

EXAMPLE Electric motors.

**3.16****heart rate control mode**

programme that allows the user to maintain training with a predetermined heart rate level by adjusting the resistance automatically to the user's heart rate response

**3.17****heart rate measurement system**

system which displays the individual heart rate of the user

**3.18****display**

device that provides information to the user

**3.19****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

**3.20****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

**3.21  
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.

**3.22  
multiple exercise station**

part of the equipment allowing more than one functional units or exercises

## 4 Classification

### 4.1 General

Equipment shall be classified in accordance with accuracy and usage classes as described in [4.2](#) to [4.3](#).

If the intended use of the equipment is for more than one usage class it shall fulfil the requirements of each class.

### 4.2 Accuracy classes

**4.2.1** Accuracy classes only apply to equipment which display training data.

**4.2.2** Class A: high accuracy.

**4.2.3** Class B: medium accuracy.

**4.2.4** Class C: low accuracy.

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NOTE The requirements of accuracy classes are shown in the additional specific parts of this International Standard.

### 4.3 Usage classes

**4.3.1** Class S (Studio): professional and/or commercial use.

NOTE Such stationary training equipment is intended for use in training areas of organizations such as sport associations, educational establishments, hotels, clubs and studios, where access and control is specifically regulated by the owner (person who has the legal responsibility).

**4.3.2** Class H (Home): domestic use.

NOTE Such stationary training equipment is intended for use in private homes where access to the equipment is regulated by the owner (person who has the legal responsibility).

**4.3.3** Class I: professional and/or commercial use provided for inclusive use for people with special needs (e.g. visual, hearing, physical or learning disabilities).

Such equipment shall also be in compliance with class S requirements (see [4.3.1](#)).

NOTE Such stationary training equipment is intended for use in training areas of organizations such as sport associations, educational establishments, hotels, clubs, rehabilitation centres and studios, where access and control is specifically regulated by the owner (person who has the legal responsibility).

## 5 Safety requirements

### 5.1 General

If any of the following safety requirements are applicable, the equipment shall meet the requirements using the test methods described in [Clause 6](#).

### 5.2 Stability of equipment

The stationary training equipment shall be stable in any direction, in training, folding and storage positions.

The test shall be in accordance with [6.2](#).

### 5.3 External construction

#### 5.3.1 Edges and corners

All edges and corners of surfaces supporting bodies shall have a radius  $r \geq 2,5$  mm.

All other edges of components which are accessible to the user or to third parties shall be free of burrs, rounded or protected.

Test in accordance with [6.3.1](#).

#### 5.3.2 Tube ends

When tested in accordance with [6.3.2](#), accessible tube ends shall be closed off, e.g. by parts of the equipment or by plugs.

If plugs are used, they shall remain in position at the end of the endurance load test, as described in the relevant parts of the applicable specific standards. If no endurance test is described in a specific standard the pullout force of the plug shall be  $\geq 20$  N.

#### 5.3.3 Squeeze and shear points within the accessible hand and foot area

Squeeze and shear points between moving parts, between moving parts and fixed parts, or between a moving part and the floor shall be guarded or shall have a minimum clearance of at least 60 mm, except as follows:

- a) if only the fingers are at risk, the dimension shall be at least 25 mm;
- b) if third party access is prevented by the user's body position, and where the user is able to immediately stop the movement, the distance shall be at least 25 mm;
- c) if the angle between two adjacent moving parts or between a rigid part and an adjacent moving part is always 50 degrees or greater, it is not considered a shear point;
- d) open and obvious stops are excluded; however, if the stop is the part which is moving, then it shall pass no closer than 25 mm from any fixed frame member throughout its range of movement.

All products shall fulfil the above requirements during use.

For foldable products during folding or unfolding, the above requirements are waived if the following three requirements are simultaneously met:

- inadvertent movement is not possible during folding, unfolding, transportation and/or storage;
- access to squeeze and shear points remain at all times in the user's field of vision;
- the user can stop the motion at any time.