



SLOVENSKI STANDARD

SIST EN 957-6:2002

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Stationary training equipment - Part 6: Treadmills, additional specific safety requirements and test methods

Stationäre Trainingsgeräte - Teil 6: Laufbänder, zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren

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Appareils d'entraînement fixes - (Partie 6: Simulateurs de course, méthodes d'essai et exigences de sécurité spécifiques supplémentaires)

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English version

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This European Standard was approved by CEN on 29 June 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 136 "Sports, playground and other recreational equipment", the secretariat of which is held by DIN.

This standard EN 957 "Stationary training equipment" consists of the following parts:

- *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.*

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2002, and conflicting national standards shall be withdrawn at the latest by February 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

This European Standard amends and supplements EN 957-1. The requirements of this specific standard take priority over those in EN 957-1.

1 Scope

This European Standard specifies safety requirements for treadmills in addition to the general safety requirements of EN 957-1 and should be read in conjunction with it.

This European Standard is applicable to power driven and manually driven training equipment type treadmills (type 6) (hereafter referred to as treadmills) with the classes S and H and classes A, B and C regarding accuracy.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 292, *Safety of machinery — Basic concepts, general principles for design.*

EN 957-1:1996, *Stationary training equipment — Part 1: General safety requirements and test methods.*

EN 60947-5-5, *Low-voltage switchgear and controlgear — Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function (IEC 60947-5-5:1997)*

EN 60335-1, *Safety of household and similar electrical appliances — Part 1: General requirements (IEC 60335-1:1983, modified).*

EN 60601-1, *Medical electrical equipment — Part 1: General requirements for safety (IEC 60601-1:1988).*

ISO 5904, *Gymnastic equipment — Landing mats and surfaces for floor exercises – Determination of resistance to slipping.*

ISO 9838, *Alpine ski-bindings — Test soles for ski-binding tests.*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given EN 957-1:1996 and the following apply.

3.1 treadmill

training equipment with a unidirectional moving surface on which a walking or running activity can take place, where the feet are free to leave the moving surface

3.2 running surface

length of the usable part of the moving surface (see *l* in Figure 1)

NOTE Figure 1 is intended only to give examples and to illustrate the names of the components.

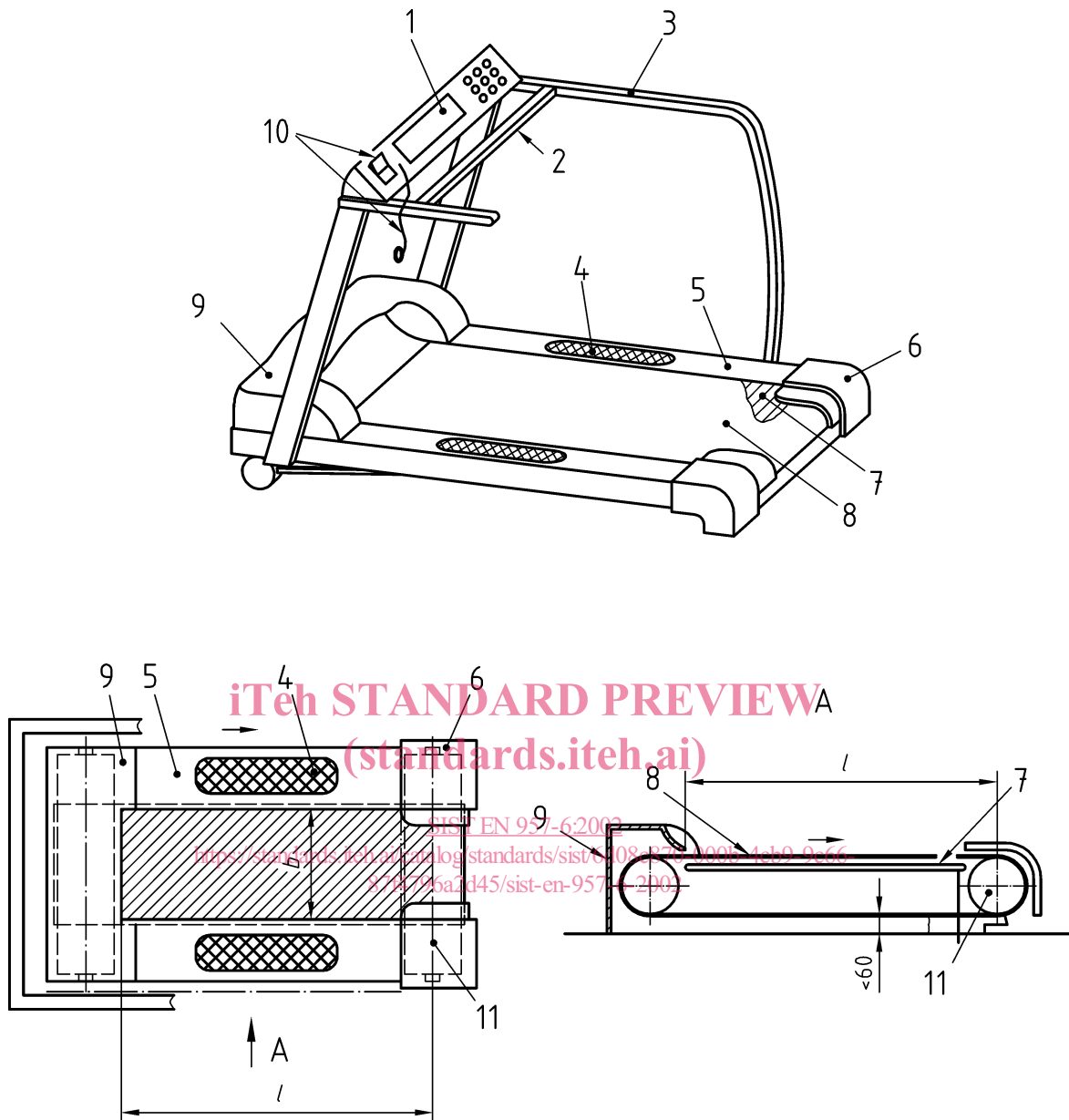
3.3 width of the running surface

usable width of the running belt excluding rear roller guards, see *b* in Figure 1)

4 Classification

Clause 4 of EN 957-1:1996 applies.

Dimensions in millimetres



Key

- 1 Display
- 2 Front handlebar
- 3 Side handrail
- 4 Non slip surface
- 5 Foot platform
- 6 Rear roller guard (see Figure 2)
- 7 Running deck
- 8 Running surface (belt)
- 9 Front housing
- 10 Emergency stop
- 11 Rear roller (see Figure 2)

l length of running surface (belt)

b width of running surface (belt)

NOTE The numbering system in this Figure 1 is retained in Figure 2 of this European Standard.

Figure 1 — Example of a treadmill

5 Safety requirements

5.1 General

Depending on the design of the piece of equipment the following requirements shall apply as appropriate.

5.2 External construction

5.2.1 Squeeze and shear points within the accessible area

Where the elevation can be changed during operation thus causing the distance between any part of the equipment and the floor to become smaller than 60 mm the speed of elevation shall not exceed 1 °/s.

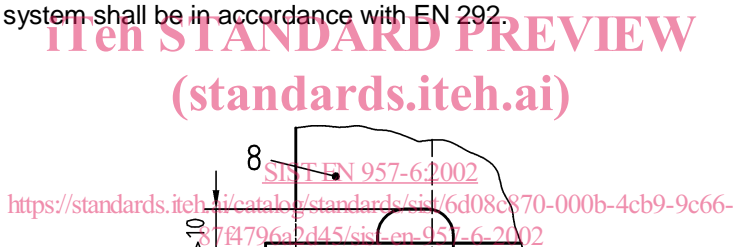
The user shall be able to stop this movement.

5.2.2 Transmission elements and rotating parts

Pull-in points between the running surface, the rear roller and the frame and the rear roller/belt and the floor shall be avoided. This can be achieved e. g. by a rear roller guard (see Figure 2).

When tested in accordance with 6.1 it shall not be possible that the test finger becomes trapped between the rear roller guard and the running surface. There shall be a minimum distance of 10 mm between the edge of the running surface and the rear roller guard during all operating conditions (see Figure 2).

Elements of the motor drive system shall be in accordance with EN 292.



Dimensions in millimetres

Key

- 5 Foot platform (can also overlap the belt)
- 6 Rear roller guard
- 8 Running surface (belt)
- 11 Rear roller

Figure 2 — Rear roller guard

5.2.3 Temperature rise

When tested in accordance with 6.2, accessible parts of the treadmill shall not have a temperature greater than 65 °C.

5.3 Emergency stop

5.3.1 General

All power driven mills shall be equipped with an emergency/safety stop switch, which should include, either a push-button operated switch, or a pull-cord operated switch.

5.3.2 Characteristics

It shall not be possible to restore the circuit until the actuator of the emergency stop device has been manually reset. Where several emergency stop devices are provided, the circuit shall not be restored until all actuators previously operated have been reset.

The contacts of manually operated emergency stop devices shall ensure positive opening, as defined in EN 60947-5-5.

It shall be easily accessible to the user.

When the switch is activated the main power shall be interrupted without utilization of the software and the treadmill shall come to a complete stop.

5.3.3 Actuators

Actuators of emergency stop devices shall be coloured RED. Where a background exists behind the device actuator, it shall be coloured YELLOW. The actuator of a push-button operated switch shall be of the palm or mushroom head type.

5.4 Immobilization method

For power driven treadmills there shall be an immobilization method for the treadmill to prevent uncontrolled usage of third parties. This method shall be explained in the instructions for use.

Testing in accordance with 6.4.

5.5 Stability

When tested in accordance with 6.5, the treadmill shall not fall over.

5.6 Static loading

When tested in accordance with 6.6, the treadmill shall withstand a force of

- a) 4 times the body mass (100 kg) for class H and
- b) 6 times for class S

without breakage.

After the test the treadmill shall be capable to functioning according to the manufacturer's information on the correct use.

The treadmill shall withstand the test in flat, mid and maximum elevation, where elevation is applicable.

5.7 Endurance

When tested in accordance with 6.7, the treadmill shall withstand

- a) 12 000 impacts for class H and
- b) 100 000 impacts for class S.

After the test the treadmill shall be capable to functioning according to the manufacturer's information on the correct use and shall not show any breakage.

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