SLOVENSKI STANDARD

SIST EN 957-7:2002

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Nepremiļna oprema za vadbo - 7. del: Naprave za veslanje, dodatne posebne zahteve in preskusne metode

Stationary training equipment - Part 7: Rowing machines, additional specific safety requirements and test methods

Stationäre Trainingsgeräte - Teil 7: Rudergeräte, zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren

Appareils d'entraînement fixes - Partie 7: Rameurs, prescriptions spécifiques de sécurité et méthodes d'essai supplémentaires

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English version

Stationary training equipment - Part 7: Rowing machines, additional specific safety requirements and test methods

Appareils d'entraînement fixes - Partie 7: Rameurs, prescriptions spécifiques de sécurité et méthodes d'essai supplémentaires

Stationäre Trainingsgeräte - Teil 7: Rudergeräte, zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 6 June 1998.

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 Central Secretariat 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 Central Secretariat 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.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 957-7:1998 E

Contents

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 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 December 1998, and conflicting national standards shall be withdrawn at the latest by December 1998.

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: Tread mills, 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

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.

Introduction

This part of EN 957 concerns the safety of rowing machines.

It amends and supplements EN 957-1. The requirements of this specific standard take priority over those in the general standard.

1 Scope

This part of EN 957 specifies safety requirements for rowing machines in addition to the general safety requirements of EN 957-1 and should be read in conjunction with it.

This part of EN 957 is applicable to stationary training equipment type rowing machines (type 7), hereinafter referred to as rowing machines, within the classes S and H and class A regarding accuracy.

If accessories are provided with the rowing machine for the performance of additional exercises these are subject to the requirements of EN 957-1 and any other specific requirements of the appropriate part of this standard.

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.

EN 71-1
Safety of toys – Mechanical and physical properties

EN 547-3
Safety of machinery – Human body measurements – Part 3: Anthropometric data

EN 957-1 : 1996
Stationary training equipment – Part 1: General safety requirements and test methods

3 Definitions

For the purposes of this standard the definitions of EN 957-1 and the following apply:

rowing machine: Stationary training equipment with a moving seat simulating a motion like rowing (see figures 1 to 3).

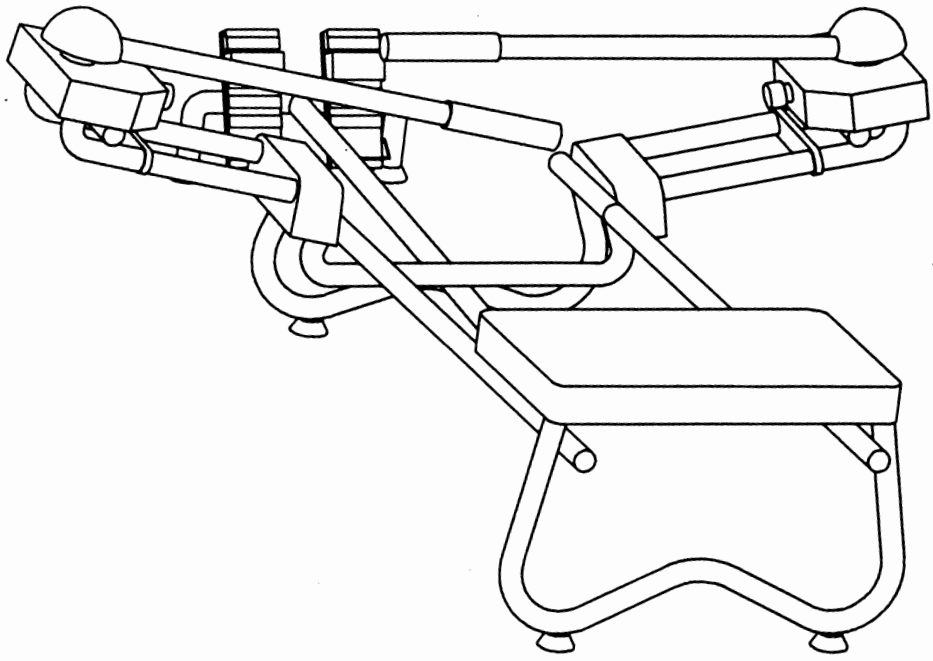
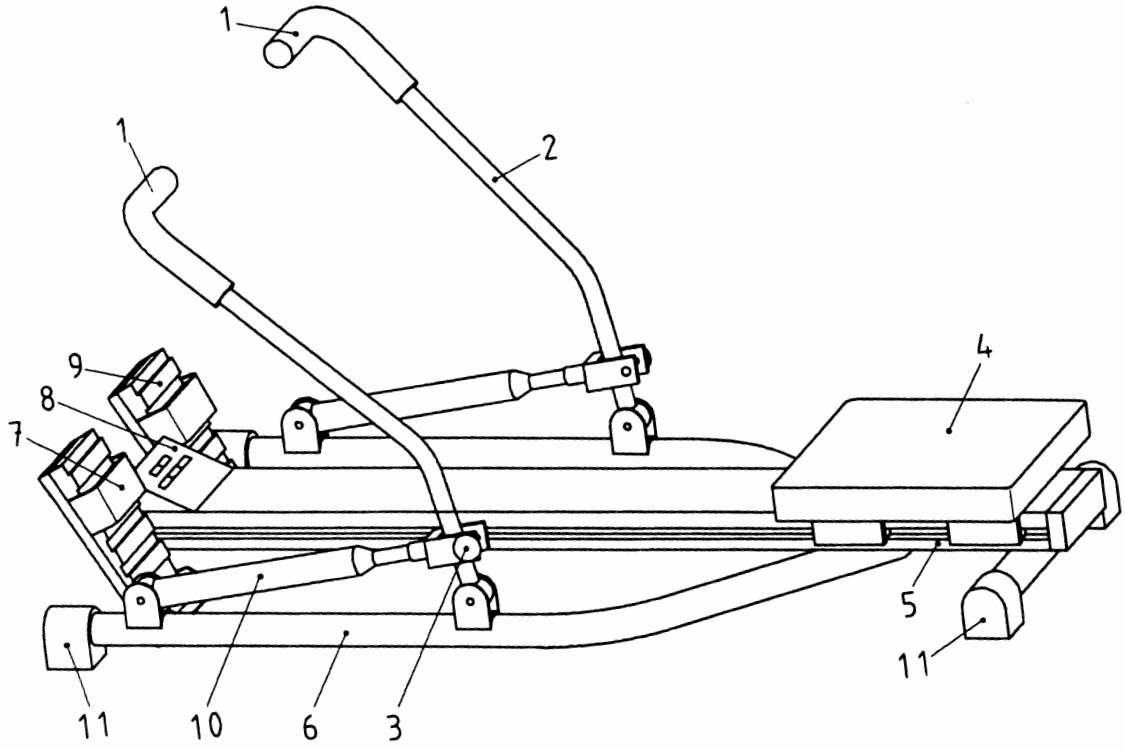
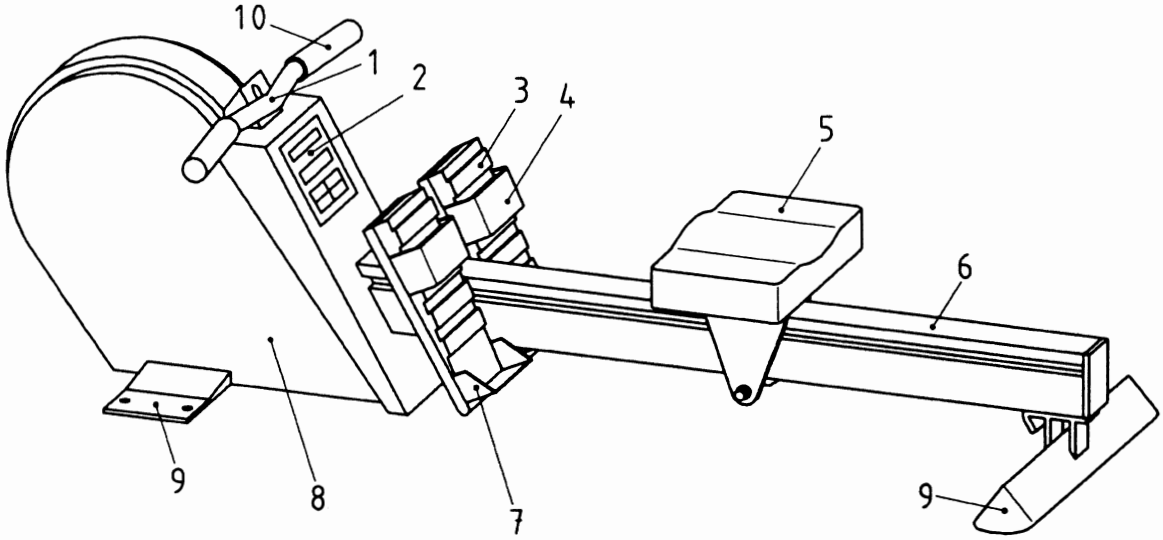


Figure 1: Example of a rowing machine with sculling system



1 hand grip
2 rower arm
3 tension adjustment
4 seat
5 rail
6 frame
7 foot-strap
8 display
9 foot support
10 hydraulic/pneumatic piston
11 base support

Figure 2: Example of a rowing machine with hydraulic/pneumatic system



1 handle
2 display
3 foot support
4 foot-strap
5 seat
6 rail
7 heel bar
8 housing
9 base support
10 hand grip

Figure 3: Example of a rowing machine with cable system

4 Classification

Clause 4 of EN 957-1 : 1996 applies.

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

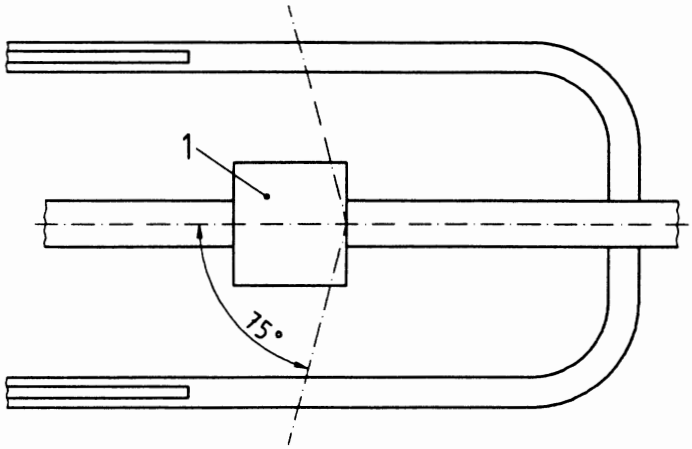
5.2.1 Squeeze, shear and reciprocating points within the accessible area

The distance between movable parts and adjacent movable or rigid parts shall be at least 25 mm if relevant for fingers only, otherwise it shall be at least 60 mm.

Required stops are excluded (if the user is not put at risk). Accessible stops shall each have a minimum surface of 400 mm^2. Stops which compress shall each produce a surface of 400 mm^2 when compressed with a pressure of 90 N/cm^2.

The 60 mm does not apply when the squeeze points remain within the user's field of vision over the full range of movement during use (see figure 4).

If the distance between movable parts and adjacent rigid parts does not change during the movement, the test fingers of 6.2 shall not become trapped.



1 seat

Figure 4: Field of vision

5.2.2 Transmission elements and rotating parts

Transmission elements, fans and flywheels shall be protected, so that, when tested in accordance with 6.2, the test finger cannot be trapped.

5.2.3 Temperature rise

When tested according to 6.4, accessible parts of the rowing machine shall not have a temperature greater than 65 °C.

5.2.4 Seats

When tested in accordance with 6.3 and 6.1.4, the seat shall not derail.

5.3 Intrinsic loading

When tested according to 6.5

- with 250 kg for class H and
- with 300 kg for class S

each piece of equipment shall withstand the test force without being deformed for more than f = 1/100 for a simply supported beam and f = 1/150 for a cantilever beam (see figure 5).

After the test all parts of the equipment shall function according to the manufacturer's instructions for use.

The seat wheels or rollers should not have excessive play and shall rotate freely.