SLOVENSKI STANDARD
oSIST prEN 14960-4:2022

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Napihljiva igralna oprema - 4. del: Dodatne varnostne zahteve in preskusne metode za bungee runs

Inflatable play equipment. - Part 4: Additional safety requirements and test methods for bungee runs

Aufblasbare Spielgeräte - Teil 4: Zusätzliche sicherheitstechnische Anforderungen und Prüfverfahren für Bungeeruns

Équipements de jeu gonflables - Partie 4 : Exigences de sécurité supplémentaires pour les équipements de course à l'élastique

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ICS:

97.190	Otroška oprema	Equipment for children
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Inflatable play equipment. - Part 4: Additional safety requirements and test methods for bungee runs

Équipements de jeu gonflables - Partie 4 : Exigences de sécurité supplémentaires pour les équipements de course à l'élastique

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If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN 14960-4:2022) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational facilities and equipment”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document is in addition to EN 14960-1, EN 14960-2 and EN 14960-3.

prEN 14960-4:2022 includes the following significant technical additions with respect to EN 14960 1, 2 and 3, and this standard series now consists of four parts.

A list of all parts of EN 14960 can be found on the CEN website.

Introduction

Play is a means by which people discover and understand the world in which they live and is an essential element in a person's physical and mental growth.

It is important for a person's rounded development that, through play, they arrive at an understanding of danger, which provides a basis for assessing safety in a variety of situations. The balance between challenge and safety is an important consideration.

The inflatable game referred to in this document can provide different levels of challenge and excitement. This document aims to minimize the level of risk and the possibility of serious injury while allowing people to enjoy themselves when using inflatable equipment.

It is not the purpose of the requirements of this document to affect a person's need to play nor to lessen the contribution that inflatable play equipment makes either to the person's development or meaningful play from an educational point of view.

Where inflatable play equipment is combined with other items of play equipment, the relevant standards for the other items of equipment should also be applied.

1 Scope

This document specifies additional safety requirements for inflatable bungee runs and should be read in conjunction with part 1 (See Annex A)

This document is applicable to inflatable play equipment intended for use by persons of 1200mm minimum height and 120kg maximum weight.

This document specifies safety requirements for an inflatable game on which the primary activity is pulling horizontally against a secured bungee shock cord. It sets measures to address risks and also to minimize accidents to users for those involved in the design, manufacture and supply of the inflatable game.

It specifies information to be supplied with the equipment. The requirements have been laid down bearing in mind the risk factor based on available data.

This document specifies the requirements that will protect the user from hazards that they might be unable to foresee when using the equipment as intended, or in a manner that can be reasonably anticipated.

This document is not applicable to inflatable water- borne play and leisure equipment, domestic inflatable toys, air-supported buildings, inflatables used solely for protection, inflatables used for rescue, or other types of inflatable toys where the primary activity is not pulling horizontally against a secured bungee shock cord.

In order not to confine the application of this document to those items of equipment currently in use and to allow freedom of design for the manufacture of new equipment, only the fundamental forms of equipment and motion are defined in Clause 3.

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.

EN 14960-1, *Inflatable play equipment - Part 1: Safety requirements and test methods*

EN 362, *Personal protective equipment against falls from a height - Connectors*

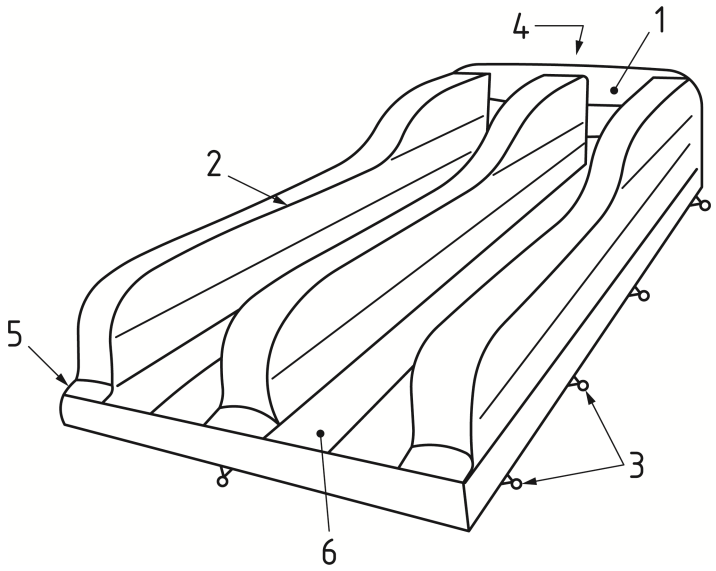
3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14960-1 and the following apply.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp

3.1
inflatable bungee run
structure relying on a continuous supply of air to maintain its shape, on which users wearing a belt connected to a bungee shock cord against which they pull horizontally along the containment track or lane and place a marker as near to the front opening as they can reach



Key

1) Back Wall
2) Containment Wall
3) Ground Anchor Points
4) Bungee Cord Anchor Points
5) Open Side
6) Containment Track or Lane

Figure 1 — Inflatable bungee run (two lane)

3.2
bungee belt
belt worn by the user to which one end of the bungee shock cord is connected

3.3
bungee shock cord
elasticated cord or rope secured at one end to the bungee belt and the other end to the inflatable

3.4
marker baton or marker pad
small marker baton or marker pad carried by the user to mark the furthest point reached along the containment track or lane

3.5
containment track or lane
inflated track or lane created by the back wall and two parallel side walls along which the user moves as far as possible towards the open side

4 Safety requirements

4.1 Materials

4.1.1 Bungee Belt

The bungee belt shall be of sufficient strength to withstand the force generated by the largest/heaviest user and shall be a minimum width of 20 cm so as to spread the force created by the user in order to exclude bodily injury.

A fail-safe locking system shall be incorporated so as to ensure the belt is securely attached to the user at all times while using the equipment and shall be sufficiently adjustable to retain all intended users safely and securely.

4.1.2 Connectors

Connectors shall be of sufficient strength to withstand the forces generated by the largest/heaviest user, shall be safe in use without causing risk of injury and shall comply with EN 362.

4.1.3 Bungee shock cord

Bungee shock cord shall be of sufficient strength to withstand the force generated by the largest/heaviest user and shall restrict the user's forward movement retaining them within the length of the containment track or lane less at least 1 200 mm. For large/heavy users, it may be necessary to connect two shock cords to the users to achieve this.

Bungee shock cord shall be a minimum diameter of 14mm. and shall be installed without knots.

4.1.4 Marker baton or marker pad

A marker baton or marker pad shall be easily held and placed by the user, readily located and retained on a lane side wall on release or placement by the user and shall be safe to use without risk of causing injury.

4.2 Design

4.2.1 Anchorage

The bungee run shall be provided with an anchorage or ballast system and any necessary accessories enabling it to be securely fixed to the ground.

The number of anchorage points on each side shall be calculated using the formulae in Annex A of EN 14960-1:2019 except that the 1,5 safety factor multiple shall be increased to 2,5.

4.2.2 Securing the bungee shock cord to the inflatable

The connection point shall be located on the outside of the back wall, securely attached and shall be capable of withstanding the force generated by the largest/heaviest user.

The bungee shock cord shall be connected securely to the inflatable to ensure that:

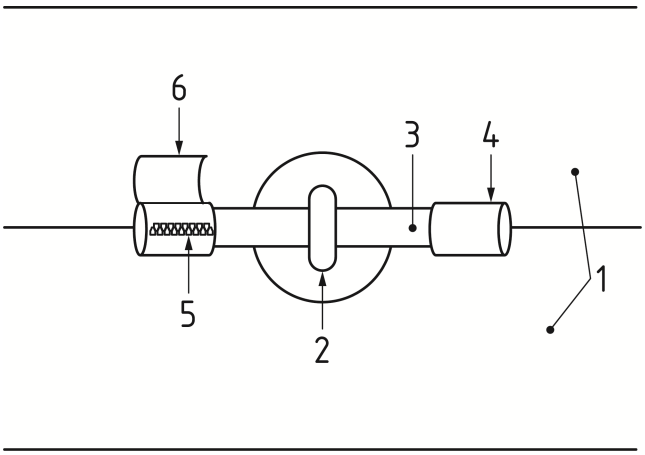
i) it does not come loose during use.

ii) in the event of failure, objects including heavy, hard or sharp components are not projected towards the user

iii) if zips are used, the puller is hidden from view.

iv) the connection is not readily accessible to the public.

There shall be no sharp and/or abrasive edges which could damage the bungee shock cord and/or the inflatable.



Key

1) Section of outside back wall
2) Bungee shock cord
3) Round tube
4) PVC pocket
5) Zip
6) Zip cover

Figure 2 — Example of bungee shock cord to inflatable connection

4.2.3 Connection of the bungee shock cord to the bungee belt

All connections shall withstand the force generated by the largest/heaviest user and be secure in use.

Note: this can be achieved by looping the shock cord through the belt and back on itself. When metal connectors are used, they shall have two stage locking.

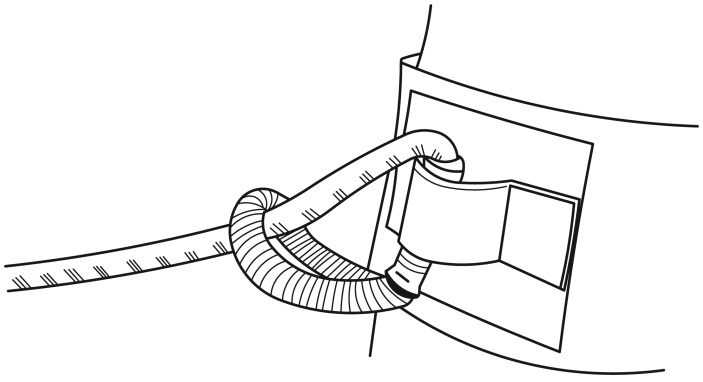


Figure 3 — Example of Connecting Bungee Shock Cord to the Belt.

There shall be no sharp and/or abrasive edges which could damage the bungee shock cord and/or the inflatable.