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Umetne plezalne stene - 3. del: Varnostne zahteve in preskusne metode za oprimke

Artificial climbing structures - Part 3: Safety requirements and test methods for climbing holds

Künstliche Kletteranlagen - Teil 3: Sicherheitstechnische Anforderungen und Prüfverfahren für Klettergriffe

Structures artificielles d'escalade - Partie 3 : Exigences de sécurité et méthodes d'essai pour prises d'escalade

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EUROPEAN STANDARD

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English Version

Artificial climbing structures - Part 3: Safety requirements and test methods for climbing holds

Structures artificielles d'escalade - Partie 3 : Exigences de sécurité et méthodes d'essai relatives aux prises d'escalade

Künstliche Kletteranlagen - Teil 3: Sicherheitstechnische Anforderungen und Prüfverfahren für Klettergriffe

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 12572-3:2017) 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 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of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12572-3:2008.

This standard EN 12572, *Artificial climbing structures*, consists of the following parts:

— *Part 1: Safety requirements and test methods for ACS with protection points*

— *Part 2: Safety requirements and test methods for bouldering walls*

— *Part 3: Safety requirements and test methods for climbing holds*

The following technical changes have been made in comparison with EN 12572-3:2008:

— size classification and hold size has been added;

— safety requirements and test methods has been modified;

— setup for test the structural integrity have been added.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The working group recognize that there is a potential danger to ACS users from being struck by falling pieces of climbing holds that break whilst in use on an ACS. Some propriety systems within climbing holds have been developed by manufacturers in response to this problem but the systems have not been perfected and further development work is required. The aim is to develop a system that would prevent 'large' pieces of a broken hold that could cause serious injury to ACS users, from being able to 'break-off' and fall from the ACS.

Designers and manufacturers are requested to work on new systems that would address this problem.

1 Scope

This European Standard specifies the safety requirements and test methods for climbing holds.

This European Standard is applicable to climbing holds, which are used for the natural progression of the climber, i.e. without the use of artificial means (e.g. ice axes, crampons, hooks, nuts) on artificial climbing structures (ACS) and bouldering walls. Climbing holds are designed to be mounted on the ACS with bolts, screws, etc. Climbing holds include large volumes or features that are designed for use without additional climbing holds being attached to them. The main fixation points for climbing holds forms part of the existing layout of the ACS and are considered in EN 12572-1 and EN 12572-2.

This European Standard is not applicable to ice climbing, dry tooling and playground equipment.

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.

EN 12572-1, *Artificial climbing structures - Part 1: Safety requirements and test methods for ACS with protection points*

EN 12572-2, *Artificial climbing structures - Part 2: Safety requirements and test methods for bouldering walls*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12572-1 and EN 12572-2 and the following apply.

3.1
artificial climbing structure
(ACS)
sports equipment consisting of a purpose-built climbing structure, which shows various construction characteristics, and is designed for various uses in sport climbing objectives

3.2
bouldering wall
artificial climbing structure allowing climbing without protection points including a falling space and impact area

3.3
protection point
attachment point on the ACS designed to protect the climber

Note 1 to entry: It can be permanent (cannot be removed with tools, e.g. a glue in anchor) or non-permanent (removable with tools, e.g. a hanger).

3.4
hold
removable climbing component used for progression on an ACS or bouldering wall including bigger three dimensional, structural attachment without additional panel insert or other means of hold fixation

Note 1 to entry: It should be noted that holds bigger than size XXL are called macros (see Table 1).

3.5
volume
removable three dimensional, structural attachment with panel insert or other means of hold fixation designed for temporary extension of the climbing surface

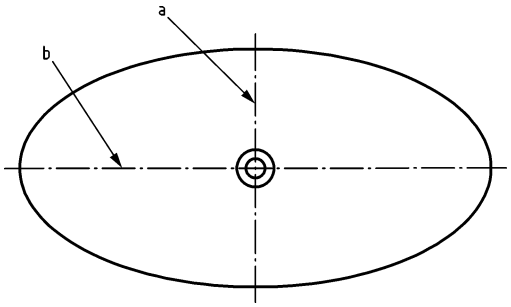
3.6
panel insert
point on which a climbing hold is attached

4 Size classification

Table 1 allows a hold to be categorized in terms of its average hold diameter. The average hold diameter (as a projection) is taken as the sum of the major, a, and minor, b, axis (see Figure 1) divided by two.

Table 1 — Hold size and corresponding average diameter range

Hold Size	Diameter range mm
XS	0 to ≤ **50**
S	> 50 to ≤ **80**
M	> 80 to ≤ **130**
L	> 130 to ≤ **210**
XL	> 210 to ≤ **340**
XXL	> 340 to ≤ **550**
Macro	> 550



Key

a major axis

b minor axis

Figure 1 — Footprint of a climbing hold

5 Safety requirements

5.1 General

No hold, when tested in accordance with 6.2 and 6.3, shall break when applying the force given in Table 2. Only holds greater than 100 g shall be tested.

5.2 Material

Dangerous substances shall not be used in the manufacture of climbing holds in such a way that they can cause adverse health effects to the user of the equipment.

NOTE Attention is drawn to the provisions of the Dangerous Substances Directive 1907/2006 and its successive modifications. Prohibited materials include but are not limited to, asbestos, lead, formaldehyde, coal tar oils, carbolineums and polychlorinated biphenyls (PCBs).

5.3 Ergonomic requirements

a) The climbing surface of a hold shall be free from accessible sharp edges with a radius less than 0,5 mm and burrs;

b) There shall be no pointed climbing holds with a diameter less than 15 mm, which protrude more than 40 mm from the wall;

c) There shall be no gaps between 8 mm and 25 mm and with a depth greater than 15 mm which can lead to entrapment, unless specifically designed for climbing.

5.4 Resistance to fixation force

Climbing holds shall be tested in accordance with 6.2 and they shall not fracture.

5.5 Resistance to breakage in use

Climbing holds shall be tested in accordance with 6.3 and they shall not fracture.

5.6 Dimension ratio

This requirement is to protect the surface of the ACS and the panel insert.

The hold shall be designed in such a way that:

$d_2 \leq 3d_1$ and

$d_3 \leq 3d_1$ according to Figure 2.