



SLOVENSKI STANDARD
oSIST prEN 17961:2023
01-maj-2023

Gorniška oprema - Naprave za delitev bremena - Varnostne zahteve in preskusne metode

Mountaineering equipment - Load sharing devices - Safety requirements and test methods

Bergsteigerausrüstung - Lastverteiler - Sicherheitstechnische Anforderungen und Prüfverfahren

Équipement d'alpinisme et d'escalade - Dispositifs de répartition de la charge - Exigences et méthodes d'essai

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ICS:

97.220.40	Oprema za športe na prostem in vodne športe	Outdoor and water sports equipment
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EUROPEAN STANDARD
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prEN 17961

March 2023

ICS

English Version

Mountaineering equipment - Load sharing devices - Safety requirements and test methods

Équipement d'alpinisme et d'escalade - Dispositifs de répartition de charge - Exigences et méthodes d'essai

Bergsteigerausrüstung - Lastverteiler - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 136.

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 17961:2023) 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 CEN Enquiry.

This document has been prepared under a Standardization Request given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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Introduction

The text of this document is based on the former UIAA-Standard 130:2021 (Union Internationale des Associations d'Alpinisme / International Climbing and Mountaineering Federation), which was developed with international participation.

This document is part of a series of standards on mountaineering equipment, see Annex A.

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1 Scope

This document specifies safety requirements and test methods for all types of load sharing devices commonly used in mountaineering (climbing and associated activities).

This document does not cover the specific requirements of devices intended for use in slackline applications.

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 565:2017, *Mountaineering equipment - Tape - Safety requirements and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at <https://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1

load sharing device (LSD)

apparatus integrating at least 3 possible connections intended to distribute load (see Figure 1)

Note 1 to entry: some types of LSD are known as 'rigging plates'

3.2

3-way loading

application of equal loading in three different directions

3.3

weakest load bearing orientation

direction or method of loading which, as defined by the manufacturer, supports the lowest minimum strength defined by the manufacturer

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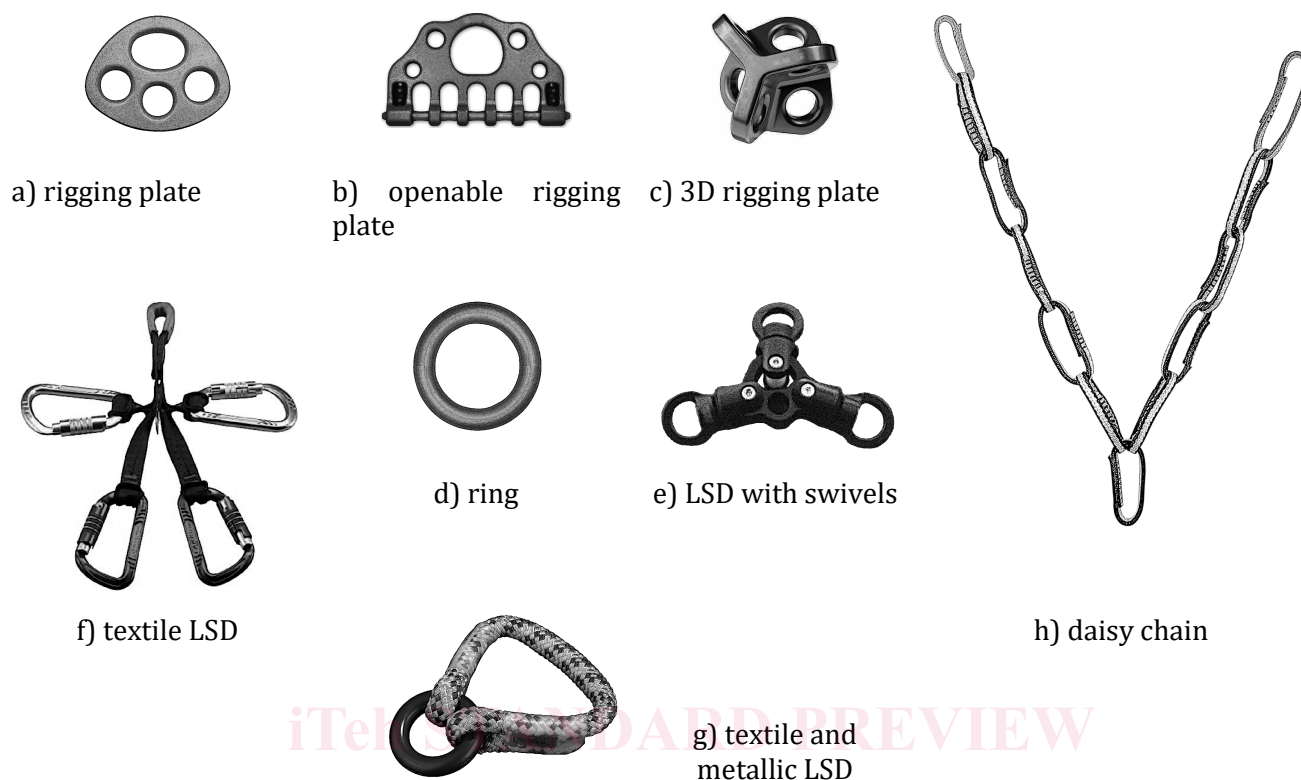


Figure 1 — Example of LSD

4 Safety requirements

4.1 Design and ergonomics

4.1.1 It shall not be possible for a LSD to become detached unintentionally. If any part can be opened or removed, it shall be designed such that it can only be done after performing at least 3 separate, consecutive and deliberate manual actions or by the use of a tool.

4.1.2 Where a LSD includes more than one element and for an LSD with elements that can be adjusted, the design shall be such that those elements cannot appear to be positively locked together when they are incorrectly assembled or adjusted.

4.1.3 Where a LSD includes another function (connector, rope clamp, etc.) it shall also comply to the appropriate other applicable text/standard, if existing.

4.1.4 Where stitching is used to provide safety and strength (e.g. in joints) it shall be possible to inspect it and at least 50 % of the stitching shall contrast with the textile element in colour or surface appearance.

4.1.5 All edges of a LSD shall be free of burrs and sharp edges.

The internal edges of the hole(s) shall be rounded with a radius larger than 0,2 mm or have a chamfer larger than 0,2 mm × 45° (see a) in Figure 2).

Dimensions in millimetres

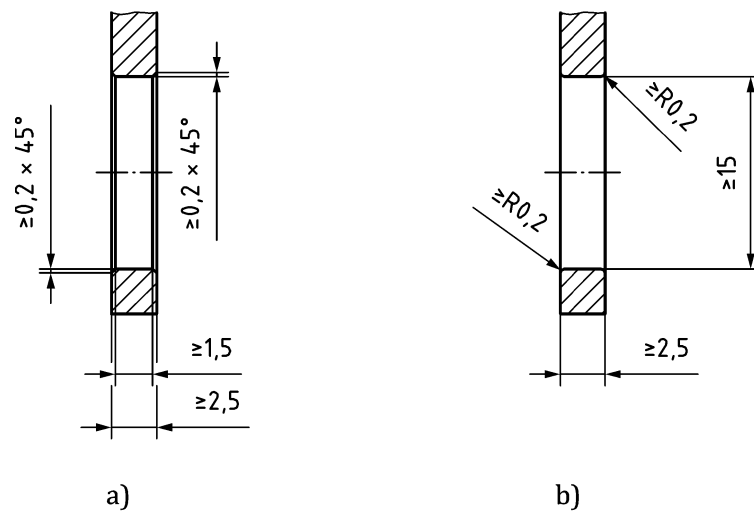


Figure 2 — Attachment point eye dimensions

The hole(s) shall have an internal diameter of at least 15 mm (see b) in Figure 2) unless designated for specific connections or purpose.

4.1.6 Where the manufacturer claims the insertion of a textile part (e.g. a rope or a sling) through a LSD's hole, the cross sectional profile of the bearing surface shall conform to Figure 3.

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Dimensions in millimetres

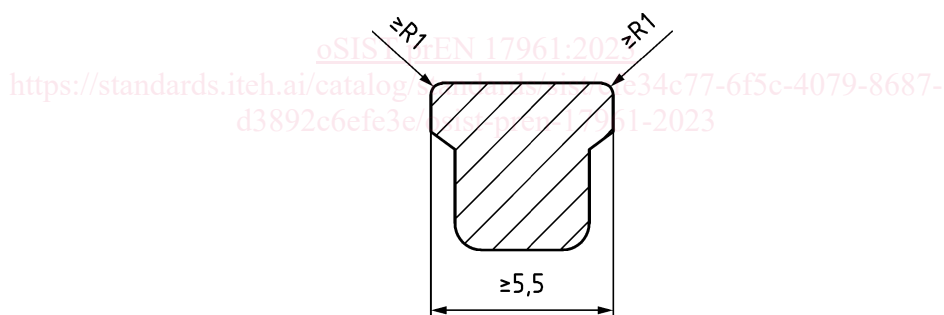


Figure 3 — Example of cross-sectional profile

4.2 Stability of tape

If the LSD is made of woven tape not conforming to EN 565:2017, the weft yarn of the tape shall not be released from the tape sample when tested in accordance with 5.2.

4.3 Static strength

Determine the weakest configuration(s) to test by appropriate documentation supplied by the manufacturer (e.g. instructions for use for authorized loading situations and for strength values claimed by the manufacturer, risk analysis, technical documentation).

When tested in accordance with 5.3 the LSD shall withstand the strength value marked on the LSD but not less than 20 kN for an all-metal LSD and not less than 22 kN for an LSD with non-metallic structural elements. The LSD shall not release the load.

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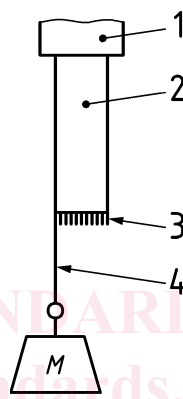
After the test, permanent deformation of any part of the LSD shall not affect the safety of the user (e.g. possibility to detach connectors from the LSD, possibility of rotation of a swivel, etc.).

5 Test methods**5.1 Design and ergonomics**

Verify by reference to appropriate documentation, by visual and/or tactile examination of the LSD and by manual action that the requirements 4.1.1 to 4.1.6 are met.

5.2 Stability of tape test

Cut a sample of at least 200 mm length of tape without the influence of heat. Extract the weft yarn on the ends to allow the attachment of a test mass M of (150 ± 5) g (see Figure 4).

**Key**

- 1 clamp
- 2 tape
- 3 warp yarns
- 4 weft yarns
- M (150 ± 5) g

Figure 4 — Method for stability of tape

Fix the test sample in a vertical orientation. Apply, without shock, the mass to the weft yarn of the lower side for (60 ± 50) s. The mass shall stay in a stable position, then release the mass and check whether the weft yarn has not unraveled. Repeat the test on the weft yarn of the other end of the tape.

5.3 Static strength test

Install the LSD in the test apparatus, attached as described in the instructions and information supplied by the manufacturer.

Use pins of $(10 \pm 0,1)$ mm and with a mean roughness value, R_a , not exceeding $0,8 \mu\text{m}$ and a peak to valley height, R_{max} , not exceeding $6,3 \mu\text{m}$.