SLOVENSKI STANDARD
SIST EN 12491:2016+A1:2022

01-februar-2022

Oprema za jadralno padalstvo - Varnostna padala - Varnostne zahteve in preskusne metode (vključuje dopolnilo A1)

Paragliding equipment - Emergency parachutes - Safety requirements and test methods

Ausrüstung für das Gleitschirmfliegen - Rettungsfallschirme - Sicherheitstechnische Anforderungen und Prüfverfahren

Équipement pour le parapente - Parachute de secours - Exigences de sécurité et méthodes dessai

Ta slovenski standard je istoveten z: EN 12491:2015+A1:2021

ICS:

97.220.40	Oprema za športe na prostem in vodne športe	Outdoor and water sports equipment

SIST EN 12491:2016+A1:2022 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12491:2015+A1

December 2021

ICS 97.220.40

Supersedes EN 12491:2015

English Version

Paragliding equipment - Emergency parachutes - Safety requirements and test methods

Équipement pour le parapente - Parachute de secours - Exigences de sécurité et méthodes d¿essai

Ausrüstung für das Gleitschirmfliegen - Rettungsfallschirme - Sicherheitstechnische Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 26 September 2015 and includes Amendment 1 approved by CEN on 10 August 2020.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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

Contents

Page

European foreword

This document (EN 12491:2015+A1:2021) 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 June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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 includes Amendment 1 approved by CEN on 2020-08-10.

This document supersedes [A1> EN 12491:2015 <A1].

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1> <A1].

This standard is one of a package of standards on equipment for paragliding as follows:

— EN 926-1, *Paragliding equipment — Paragliders — Part 1: Requirements and test methods for structural strength;*

— EN 926-2, *Paragliding equipment — Paragliders — Part 2: Requirements and test methods for classifying flight safety characteristics;*

— EN 1651, *Paragliding equipment — Harnesses — Safety requirements and strength tests;*

— EN 12491, *Paragliding equipment — Emergency parachutes — Safety requirements and test methods.*

In comparison with the previous edition EN 12491:2001, the following significant changes have been made:

a) editorial revision;

b) introduction of characteristics and requirements for steerable parachutes;

c) update of test files information and items accompanying the test file;

d) update of user manual content.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

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

Introduction

The aim of this document is to enhance paraglider pilots' safety by testing to confirm that emergency parachutes are likely to be able to perform their intended function.

The tests do not include any compatibility tests with alternative inner containers.

Emergency parachutes shall be supplied by the manufacturer for testing complete with attachments suitable for connection to an EN 1651 paragliding harness, and parachutes will be tested as if they were so connected. These connections are made in such a way, and/or using resistant material, so that they are not subject to friction or heat failure due to the tightening or slipping possible under shock loads. Any metal link is installed in such a way as to minimize any risk of injury to the pilot in an emergency deployment, and to ensure that it will be loaded in the direction of its maximum strength.

1 Scope

This document is applicable to emergency parachutes deployed by the action of the pilot without any other assistance (mechanical or pyrotechnic), intended for use with single-seater or two-seater paragliders.

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 926-1, *Paragliding equipment — Paragliders — Part 1: Requirements and test methods for structural strength*

EN 1651, *Paragliding equipment — Harnesses — Safety requirements and strength tests*

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:

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

3.1
paraglider
ultra light glider with no primary rigid structure, for which take-off and landing are on foot, with the pilot (and potentially one passenger) carried in a harness (or harnesses) connected to the wing

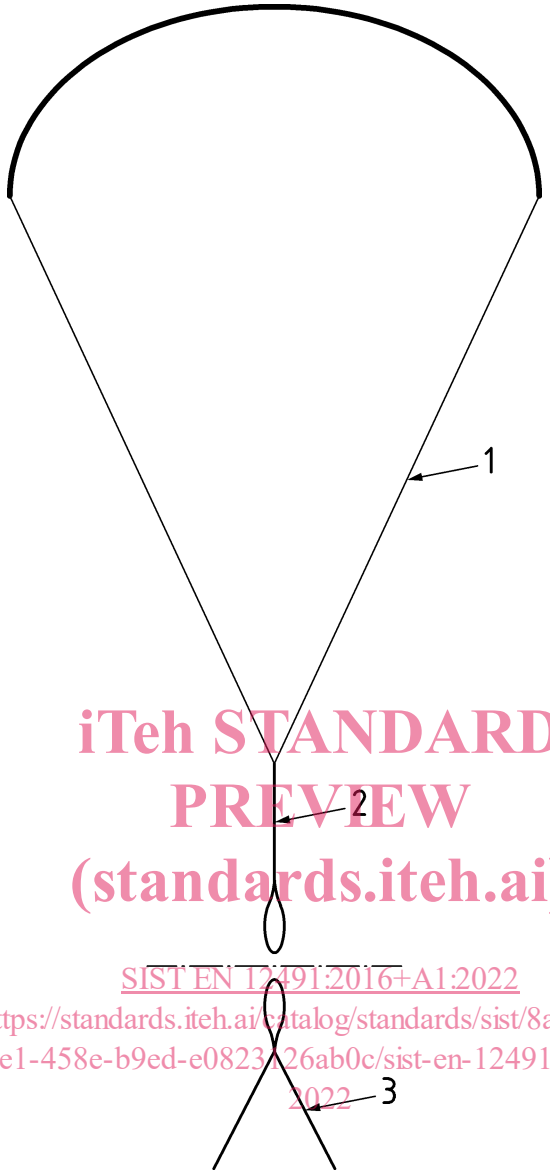
3.2
emergency parachute
emergency device intended to slow the descent of a paraglider pilot in the event of an incident in flight, which is deployed by the pilot by an intentional manual action

Note 1 to entry: This may be unsteered or steerable.

3.3
riser
lowest part of the parachute system, which is connected to the harness

Note 1 to entry: Examples of risers are presented in Figure 1 and Figure 2.

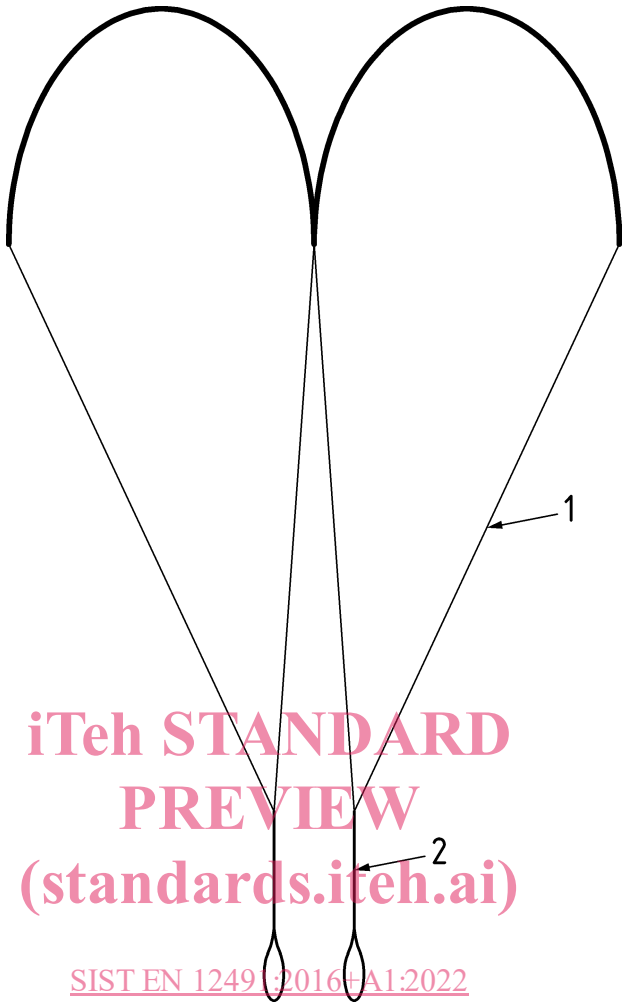
3.4
suspension lines
multiple cords connecting the emergency parachute canopy to the riser(s)



Key

1 suspension lines
2 riser
3 paragliding harness emergency parachute bridle

Figure 1 — Example of unsteerable emergency parachute components



Key

1 suspension lines

2 risers

Figure 2 — Example of steerable emergency parachute components

3.5
outer container
external container, either supplied as part of the harness, or by the parachute manufacturer for attachment to a harness

3.6
inner container or deployment bag
container of the folded emergency parachute

3.7
deployment system
inner container and either the handle attachment point(s) or handle assembly

3.8
emergency parachute system
emergency parachute combined with its deployment system

3.9
shock absorbing device
any special component fitted within the parachute system to reduce the opening shock forces on the pilot and parachute in high speed deployments

Note 1 to entry: If fitted they should be clearly identified, by label and colour, and maintenance (and replacement) instructions included in the user's manual.

3.10
drop test device
rigid test object, of adjustable mass, with one rigid attachment point for the emergency parachute

3.11
payload
total weight in flight minus weight of paraglider

3.12
steerable parachute
emergency parachute of A1⟩ "Rogallo", "Ram-air" or similar construction ⟨A1, fitted with controls for steering and landing flare

4 Safety requirements

4.1 Deployment system

When tested in accordance with 5.3.2, there shall be no failure of any component of the deployment system.

4.2 Speed of opening

A1⟩ When tested in accordance with 5.3.3, in both tests the time interval shall:

a) not exceed 4 s for parachutes whose maximum payload is 140 kg or less; or

b) not exceed 5 s for parachutes whose payload is greater than 140 kg. ⟨A1

4.3 Descent rate and stability

4.3.1 Unsteerable parachute A1⟩ and steerable parachute with locked controls ⟨A1

When tested twice in accordance with 5.3.4:

a) in each test the average rate of descent (corrected to ICAO standard atmosphere, see Annex B) shall be less than 5,5 m/s;

A1⟩ Deleted text ⟨A1

b) in each test any oscillations shall reduce;

c) the emergency parachute system shall not suffer any permanent deformation (except in the case of any shock absorbing device which is intended to be replaced after any deployment).

4.3.2 Steerable parachute A1⟩ and steerable parachute with unlocked controls ⟨A1

When tested twice in accordance with 5.3.4: