SLOVENSKI STANDARD
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Oprema za jadralno padalstvo – Jadralna padala – 1. del: Zahteve in preskusne metode za ugotavljanje trdnosti konstrukcije

Paragliding equipment - Paragliders - Part 1: Requirements and test methods for structural strength

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Ausrüstung für das Gleitschirmfliegen - Gleitschirme - Teil 1: Anforderungen und Prüfverfahren an die Baufestigkeit

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Equipement pour le parapente - Parapentes - Partie 1: Prescriptions et méthodes d'essai concernant la résistance de la structure

Ta slovenski standard je istoveten z: **EN 926-1:2006**

ICS:

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

SIST EN 926-1:2006 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Paragliding equipment - Paragliders - Part 1: Requirements and test methods for structural strength

Equipement pour le parapente - Parapentes - Partie 1: Prescriptions et méthodes d'essai concernant la résistance de la structure

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This European Standard was approved by CEN on 14 July 2006.

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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.

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Foreword

This document (EN 926-1:2006) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and recreationnal 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

This document supersedes EN 926-1:1995.

This standard is one of a series 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*

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Introduction

EN 926-1 and EN 926-2 are intended to provide a method of qualifying paragliders.

The aim of these standards is to enhance safety thus eliminating paragliders which display unacceptable behaviour in given situations on the basis of recognized tests set in these two standards.

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1 Scope

This European Standard is applicable to paragliders as defined in 2.1.

This part of EN 926 specifies requirements and test methods for the resistance of a paraglider to static and dynamic loads and sets the minimum strength threshold for its qualification.

2 Terms and definitions

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

2.1
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

2.2
model of paraglider
paragliders of different sizes of a given design are considered to be the same model when fulfilling the following criteria:

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a) the different sizes have either been obtained by using a uniform scale factor, or by adding/removing cells in the centre of the canopy;

b) any cells inserted in the centre of bigger sizes are technically identical to adjacent cells;

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c) on scaled paragliders the architecture of the structure of the suspension line system is identical. The lengths of the suspension lines are either identical for all sizes, or have been scaled up/down by a factor not greater than the scale factor of the canopy;

d) for all sizes identical materials are used;

e) the way materials are processed is identical for all sizes.

2.3
identically constructed lines
lines which are considered to be identically constructed if the only elements that alter are finished line length and cosmetic colour

3 Requirements

3.1 Shock loading

When tested according to 4.4 the wing shall not be damaged.

3.2 Sustained loading

When tested according to 4.5 the wing shall not be damaged.

3.3 Breaking strength of the lines

The lines shall be tested according to 4.6. If identically constructed lines have already been tested, then the result may be used.

For A- and B-lines in the lowest section (i.e. next to the risers) the sum of

$$F_{break}\ 1 \times n1 + F_{break}\ 2 \times n\ 2 + F_{break}\ 3 \times n\ 3 + \ .....$$

where

F_{break} 1, 2, 3,... is the breaking load line type 1, 2, 3,… used in the lowest section of the A- and/or B-lines);

n 1, 2, 3,... is the number of lines of line type 1, 2, 3,… used in the lowest section of the A- and B-lines

shall exceed the greater of $8 \times g \times$ [max weight in flight] or 8 000 N (g = 9,81 m/s^2).

For each of the other line sections above, the same calculation is performed. The result shall exceed the result obtained for the lowest section.

For the C- and D-lines (and any further suspension lines) in the lowest section the sum of

$$F_{break}\ 1 \times n\ 1 + F_{break}\ 2 \times n\ 2 + F_{break}\ 3 \times n\ 3 + ...$$

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where

F_{break} 1, 2, 3,…is the breaking load line type 1, 2, 3,... used in the lowest section of the C- and/or D-lines (and/or any further lines);

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n 1, 2, 3,...is the number of lines of line type 1, 2, 3,.. used in the lowest section of the C-, D-, or any further lines

shall exceed the greater of $6 \times g \times$ [max weight in flight] or 6 000 N.

For each of the other line sections above, the same calculation shall be performed. The result shall exceed the result obtained for the lowest section.

4 Test methods

4.1 Apparatus

4.1.1 Weak link

The weak link shall be calibrated for instantaneous break at a load defined in Table 1 according to the total weight in flight:

Table 1 — Selection of weak link break loads

Total weight in flight, in kg	< 120	120 to 180	180 to 240	≥ 240
Break load of the weak link, in daN	800	1 000	1 200	1 400

For each additional 60 kg value above 240 kg total weight in flight, the break load of the weak link shall be increased by 200 daN.

4.1.2 Cable

A steel cable of 150 m in length, of minimum specification of 6 mm diameter, 18×7 all steel construction, tensile grade 1 600 N/mm^2, may be covered with non-metallic protective coat.

4.1.3 Electronic sensor

An electronic sensor equipped with an electronic strain gauge for measuring the force (sampling a minimum of 5 times per second).

4.1.4 Measurement circuit

With a graph clearly showing the load (N) against time (s).

4.1.5 Video recording equipment

To be mounted on the test vehicle.

4.2 Test specimen

Select a test specimen that conforms to the manufacturing record for that model (see Annex A).

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Either every size of a particular paraglider design shall separately be tested or where different sizes meet the criteria of being the same model, then it is sufficient that the size with the largest maximum total weight in flight is tested.

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In this case:

a) if smaller/bigger versions of the tested glider have been obtained by applying a uniform scale factor to the canopy, the max total weight in flight for all the other sizes shall not exceed:

$$W_{max} = W_{\text{max tested glider}} \times 0{,}8$$

b) if smaller/bigger versions of the tested glider have been obtained by adding or removing cells in the centre of the canopy, the max total weight in flight for all the other sizes shall not exceed:

$$W_{\text{max}} = W_{\text{max tested glider}} \times 0{,}8 \times (n_{AO}/n_{\text{AO tested glider}})$$

where n_{AO} is the number of lines in the lowest section of the A-lines.

4.3 Test conditions

For the shock loading test in 4.4, the wind speed in the immediate vicinity of the glider shall not be greater than 2 m/s.

4.4 Shock loading test

4.4.1 Principle

The paraglider is subjected to a shock load using either procedure A or procedure B, and the wing is then visually inspected for damage.