



# SLOVENSKI STANDARD SIST EN 3475-510:2004

01-maj-2004

## **Aerospace series - Cables, electrical, aircraft use - Test methods - Part 510: Tensile strength and elongation of extruded insulation, sheath and jacket material**

Aerospace series - Cables, electrical, aircraft use - Test methods - Part 510: Tensile strength and elongation of extruded insulation, sheath and jacket material

Luft- und Raumfahrt - Elektrische Leitungen für Luftfahrtverwendung - Prüfverfahren - Teil 510: Zugfestigkeit und Reißdehnung von extrudierten Isolierungen, Schutzhüllen und Mänteln

(standards.iteh.ai)

Série aérospatiale - Câbles électriques a usage aéronautique - Méthodes d'essais - Partie 510: Tenue mécanique et élongation du matériau isolant extrudé, des matériaux du revêtement et de la gaine extérieure

**Ta slovenski standard je istoveten z: EN 3475-510:2002**

### **ICS:**

49.060 Štejni sistemi za letalstvo in zračne sile  
Aerospace electric equipment and systems

**SIST EN 3475-510:2004 en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN 3475-510:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/ade56fda-ae2c-4723-beb3-7a24a0707bd8/sist-en-3475-510-2004>

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 3475-510**

June 2002

ICS 49.060

English version

**Aerospace series - Cables, electrical, aircraft use - Test methods - Part 510: Tensile strength and elongation of extruded insulation, sheath and jacket material**

Série aérospatiale - Câbles électriques à usage  
aéronautique - Méthodes d'essais - Partie 510: Tenue  
mécanique et élongation du matériau isolant extrudé, des  
matériaux du revêtement et de la gaine extérieure

Luft- und Raumfahrt - Elektrischen Leitungen für Luftfahrt  
Verwendung - Prüfverfahren - Teil 510: Zugfestigkeit und  
Reißdehnung von extrudierten Isolierungen, Schutzhüllen  
und Mänteln

This European Standard was approved by CEN on 20 January 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

## Foreword

This document (EN 3475-510:2002) has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

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 December 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom

## 1 Scope

This standard specifies a procedure for testing the tensile strength and elongation of extruded insulation, sheath and jacket material.

It shall be used together with EN 3475-100.

## 2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 3475-100 Aerospace series – Cables, electrical, aircraft use – Test methods – Part 100: General

## 3 Preparation of specimens

See figure 1.

Dimensions are in millimetres.

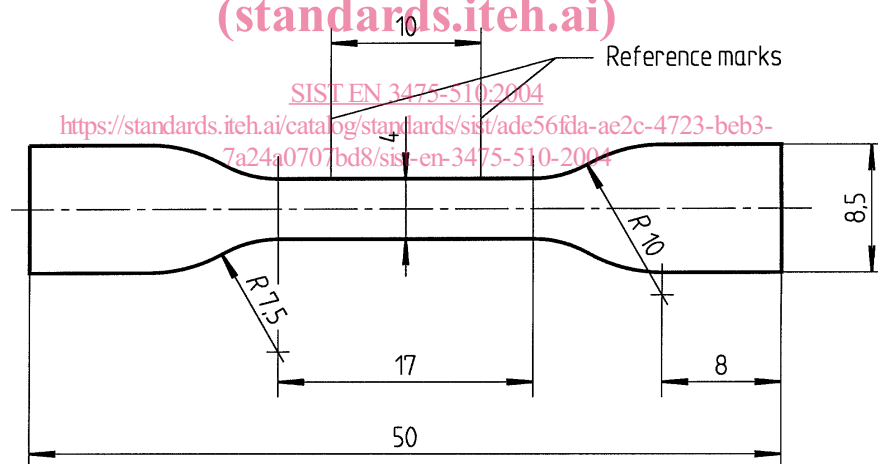


Figure 1 – Test specimen (dumb-bell) for testing tensile strength and elongation

### 3.1 General

If the cable dimensions allow, a test specimen as shown in figure 1 shall be used; otherwise the values shall be determined on a tubular sample.

### 3.2 Preparation of test specimens

Where surfaces are smooth and round, the cable is cut along the axis of the conductor, the layer to be tested exposed and a test specimen stamped out along the axis of the conductor, using the cutting tool.

Where jackets are not smooth, the test specimen is cut in the direction of the wires.

### 3.3 Preparation of tubular samples

Tubular samples are prepared by removing the components not to be tested. The conductor may be stretched to facilitate removal.

### 3.4 Determination of cross-section

For test specimens, the cross-section is calculated from the width and the minimum thickness in the area between the reference marks. For tubular samples, the cross-section is calculated, either using the following formula:

$$A = \pi (D - i) i$$

where:

- $A$  = cross-section in millimetres
- $D$  = mean value of external diameter in millimetres to two decimal places
- $i$  = mean value of wall thickness in millimetres to two decimal places

or by the weighing method and calculation by the following formula:

$$A = \frac{1000 \times m}{\sigma \times L}$$

where:

- $A$  = cross-section in millimetres
- $m$  = weight of sample in grammes to three decimal places
- $\sigma$  = density of material in grammes per cubic centimetre to three decimal places
- $L$  = length in millimetres to one decimal place

(standards.iteh.ai)

## 4 Apparatus

SIST EN 3475-510:2004

<https://standards.iteh.ai/catalog/standards/sist/ade56fda-ae2c-4723-beb3-7a24a0707bd8/sist-en-3475-510-2004>

Tensile testing machine

Cutting tool for test specimens (dumb-bells ) as shown in figure 1

Analytical balance accurate to  $\pm 0,1$  mg

## 5 Method

To measure the elongation at break, two reference marks are made 10 mm apart on the test pieces.

The test shall be performed at ambient temperature.

The pulling speed shall be  $(250 \pm 50)$  mm/min, unless otherwise specified in the product standard.

Samples which break at the clamps themselves and show markedly lower values are excluded from the evaluation.

## 6 Requirements

The mean values of a minimum of 4 tests shall comply with the values specified in the product standard.