



SLOVENSKI STANDARD
oSIST prEN 3475-806:2023
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Nadomešča:
SIST EN 3475-806:2004

Aeronavtika - Električni kabli za uporabo v zračnih plovilih - Preskusne metode - 806. del: Slabljenje

Aerospace series - Cables, electrical, aircraft use - Test methods - Part 806: Attenuation

Luft- und Raumfahrt - Elektrische Leitungen für Luftfahrtverwendung - Prüfverfahren - Teil 806: Dämpfung

Série aérospatiale - Câbles électriques à usage aéronautique - Méthodes d'essais - Partie 806: Affaiblissement

Ta slovenski standard je istoveten z: prEN 3475-806

ICS:

29.060.20	Kabli	Cables
49.060	Letalska in vesoljska električna oprema in sistemi	Aerospace electric equipment and systems

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English Version

Aerospace series - Cables, electrical, aircraft use - Test methods - Part 806: Attenuation

Série aérospatiale - Câbles électriques à usage
aéronautique - Méthodes d'essais - Partie 806:
Affaiblissement

Luft- und Raumfahrt - Elektrische Leitungen für
Luftfahrtverwendung - Prüfverfahren - Teil 806:
Dämpfung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

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.

This draft European Standard was established by CEN 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.

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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

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European foreword

This document (prEN 3475-806:2023) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (ASD-STAN).

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

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 3475-806:2002.

The main changes compared to the previous edition are as follows:

— EN 50289-1 added as a normative reference.

This document is read in conjunction with EN 3475-100 and EN 50289-1-8.

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prEN 3475-806:2022 (E)**1 Scope**

This document specifies methods for measuring the attenuation of a cable.

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

EN 50289-1-8, *Communication cables - Specifications for test methods - Part 1-8: Electrical test methods - Attenuation*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

4 Preparation of specimens

Connectors shall be fitted on each end of the test specimens (coaxial cables) or the test specimens shall be stripped (balanced cables) and connected to the measuring device.

5 Methods <https://standards.iteh.ai/catalog/standards/sist/a66777f7-809d-44be-b64c-c400def58963/osist-pren-3475-806-2023>**5.1 Insertion method**

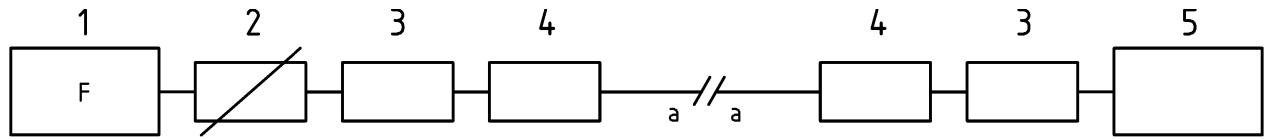
Measurement of attenuation is carried out by transmission in harmonic mode at the frequencies indicated in the product standard, inserting a cable sample in a suitable circuit and by compensating the attenuation caused by this cable by means of a calibrated attenuator.

The sample shall be of a length L such that it produces, unless otherwise stipulated in the product standard, an attenuation equivalent to at least 3 dB.

Figure 1 shows a basic arrangement.

The generator is adjusted to the measuring frequency F and its output level is held constant throughout measurement.

The indicator consists either of a measurement receiver or a detector followed by a d.c. or low frequency voltmeter if the generator is modulated.

**Key**

- 1 Generator
- 2 Calibrated variable attenuator
- 3 Fixed attenuator
- 4 Adaptor
- 5 Indicator
- a Cable sample terminations, as connected to the adaptors (baluns)

Figure 1 — Basic test arrangement

The adaptor devices shown in Figure 1 are intended to ensure correct connection between the measuring line and the cable to be tested.

Since the measuring line is a coaxial cable, these devices shall not be used if the cable to be tested has a coaxial structure of the same rated characteristic impedance as the line: these are impedance transformers in the case of coaxial cables with different rated characteristic impedance: these are balanced transformers in the case of symmetrical cables (pairs).

First note the output level on the indicator which corresponds to a value N_1 on the calibrated variable attenuator.

Then connect the test sample between a and b and readjust the variable attenuator so as to obtain the same indicator level as in the previous operation; if N_2 is the new value shown on the variable attenuator, attenuation is:

$$\alpha = \frac{N_1 - N_2}{L [1 + 0,002(t - 20)]}, \text{ in db per m at } 20 \text{ }^\circ\text{C}$$

where t is the temperature, in degrees Celsius, of the test specimens.

5.2 Comparison of input and output voltage or power (insertion loss ≥ 3 db)**5.2.1 General**

The attenuation constant shall be determined from the ratio of the input and output voltage or power. Both quantities may be measured in turn by a single measuring receiver or simultaneously with a network analyser or two channel powermeters.

In the case of a balanced cable, the measurement shall be carried out in a balanced condition. If the measuring test equipment is an unbalanced one, both ends of the pair shall be connected to the test equipment by means of baluns. The baluns shall be selected to match the test equipment to the cable nominal impedance at the test frequency.

5.2.2 Layout

The test equipment shall be assembled generally in accordance with one of the two circuit arrangements shown in Figure 2 or Figure 3.