



# SLOVENSKI STANDARD SIST EN 3475-802:2009

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Aerospace series - Cables, electrical, aircraft use - Test methods - Part 802:  
Capacitance unbalance

Luft- und Raumfahrt - Elektrische Leitungen für Luftfahrtverwendung - Prüfverfahren -  
Teil 802: Kapazitätsdifferenz

Série aérospatiale - Câbles électriques à usage aéronautique - Méthodes d'essais -  
Partie 802: Déséquilibre de capacité

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Ta slovenski standard je istoveten z: EN 3475-802:2009

**ICS:**

49.060 Š^æp\æš`Á^•[|b\æ Aerospace electric  
^|\dã}æ[]!^{\æš`Áã^{\ã equipment and systems

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 3475-802**

February 2009

ICS 49.060

Supersedes EN 3475-802:2002

English Version

**Aerospace series - Cables, electrical, aircraft use - Test  
methods - Part 802: Capacitance unbalance**

Série aérospatiale - Câbles électriques à usage  
aéronautique - Méthodes d'essais - Partie 802:  
Déséquilibre de capacité

Luft- und Raumfahrt - Elektrische Leitungen für  
Luftfahrtverwendung - Prüfverfahren - Teil 802:  
Kapazitätsdifferenz

This European Standard was approved by CEN on 11 July 2008.

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 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 Management Centre has the same status as the official versions.

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

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN 3475-802:2009) 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 Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, 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 August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 3475-802:2002.

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

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**EN 3475-802:2009 (E)****1 Scope**

This standard specifies a method for measuring the capacitance unbalance for digital data transmission cable (within a pair or quad).

It shall be used together with EN 3475-100.

**2 Normative references**

The following referenced documents are indispensable for the application 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 3475-801, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 801: Capacitance per unit length*

**3 Preparation of specimens**

These shall be stripped and prepared for connection to the measuring device.

**4 Apparatus**

The capacitance shall be measured with an unbalance bridge at a frequency of  $(1\ 000 \pm 100)$  Hz. Various types of automatic or semiautomatic equipment ~~may also be used.~~

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**5 Method****5.1 Screened pair capacitance unbalance**

Capacitance shall be measured as indicated in EN 3475-801.

The length of the sample shall be 3 m or more.

Capacitance unbalance as a percentage shall be determined from the following formula:

$$D_c = 100 \frac{4(C_a - C_b)}{2(C_a + C_b) - C_c}$$

**5.2 Screened quad capacitance unbalance pair to pair**

Pair to pair capacitance unbalance is illustrated in Figure 1, where 1 and 2 represent the two conductors of a pair and 3 and 4 represent the two conductors of another pair.

The length of the sample shall be at least 100 m or more.

Capacitance unbalance pair to pair per unit of length shall be determined from the following formula:

$$C_{pp}' = C_{13} + C_{24} - C_{23} - C_{14}$$

Use the following formula if measured length is other than 100 metres:

$$C_{pp} = \frac{C_{pp'}}{\sqrt{Lc/100}}$$

where

$C_{pp}$  is the unbalance in picofarads corrected to 100 metres;

$C_{pp}'$  is the unbalance of cable length (m);

$Lc$  is the cable length (m).

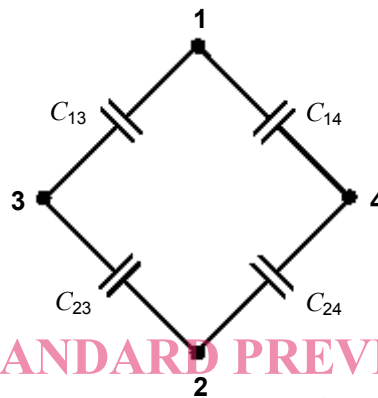


Figure 1

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### 5.3 Screened quad capacitance unbalance pair to ground

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Pair to ground capacitance unbalance is illustrated in Figure 2, where 1 and 2 represent the two conductors of a pair and 3 and 4 represent the two conductors of another pair (in case of multi pair cable, all other pairs in cable shall be connected together and grounded).

The length of the sample shall be at least 100 m or more.

Capacitance unbalance pair to ground per unit of length shall be determined from the following formula:

$$C_{pg}' = C_{10} - C_{20}$$

Used the following formula if measured length is other than 100 metres:

$$C_{pg} = \frac{C_{pg}'}{Lc/100}$$

where

$C_{pg}$  is the unbalance in picofarads corrected to 100 metres;

$C_{pg}'$  is the unbalance of cable length (m);

$Lc$  is the cable length (m).

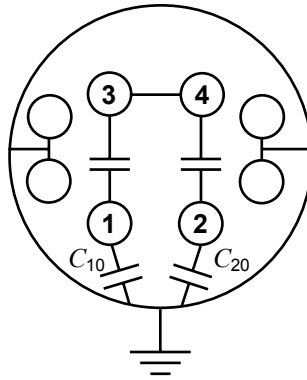


Figure 2

## 6 Requirement

The value obtained shall not exceed the values specified in the product standard.

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