



**NSAI**  
Standards

Irish Standard  
I.S. EN 3475-417:2009

Aerospace series - Cables,  
electrical, aircraft use - Test  
methods - Part 417: Fire resistance  
of cables confined inside a harness

## I.S. EN 3475-417:2009

*Incorporating amendments/corrigenda issued since publication:*

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English Version

**Aerospace series - Cables, electrical, aircraft use - Test  
methods - Part 417: Fire resistance of cables confined inside a  
harness**

Série aérospatiale - Câbles électriques à usage  
aéronautique - Méthodes d'essais - Partie 417: Tenue au  
feu des câbles confinés dans un harnais

Luft- und Raumfahrt - Elektrischen Leitungen für Luftfahrt  
Verwendung - Prüfverfahren - Teil 417: Feuerbeständigkeit  
von Leitungen eingebunden in Bündeln

This European Standard was approved by CEN on 30 August 2008.

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

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## **Foreword**

This document (EN 3475-417:2009) 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of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.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.

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## 1 Scope

This standard specifies a method of testing the fire resistance of fire resistance or fire-proof electrical cables inside a harness.

The objective of this test is to **qualify these cables** when they are confined inside harnesses defined hereafter. Described configurations try to be representative of various cables configuration installed in Aircraft.

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 2346-002, *Aerospace series — Cable, electrical, fire resistant — Operating temperatures between – 65 °C and 260 °C — Part 002 : General.*

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

EN 3475-408, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 408: Fire resistance.*

ISO 2685, *Aircraft — Environmental test procedure for airborne equipment — Resistance to fire in designated fire zones.*

## 3 Preparation of specimens

Three specimens per configuration 0,75 m length shall be tested. See Figure 1.

## 4 Apparatus

The test equipment shall be as required in EN 3475-408.

Reminder of apparatus requirements:

- a) **Burner:** according with ISO 2685 or any other burner or assembly of burners satisfying the following conditions:
  - The minimum width of the burner shall be 50 mm;
  - Cable length exposed to the flame: 152 mm;
  - Diameter or width of the flame at the base of the burner  $\geq 2 D$  ( $D$  = diameter of the harness under test);
  - Flame temperature:  $(1\ 100 \pm 80)$  °C;
  - Heat flux density received by the calorimeter:  $(116 \pm 10)$  kW/m<sup>2</sup>.
- b) **Test fixture:** according with ISO 2685:  
The frame of the test fixture shall be vibrated with the following characteristics:
  - Direction perpendicular to the axis of the cable;
  - Frequency :  $(30 \pm 5)$  Hz;
  - Minimum acceleration: 4 g.
- c) **Circuit diagram** (see Annex A, Figures A.1 and A.2)

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