BRITISH STANDARD

BS EN
3475-515:2009

Aerospace series — Cable, electrical, aircraft use — Test methods

Part 515: Crush resistance

ICS 49.060

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN 3475-515:2009.

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A list of organizations represented on this committee can be obtained on request to its secretary.

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Foreword

This document (EN 3475-515:2009) 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of an identical text or by endorsement, at the latest by February 2010, and conflicting national standards shall be withdrawn at the latest by February 2010.

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1 Scope

This standard specifies a method to determine the ability of an electrical cable to withstand crushing under specified environmental conditions (e.i. during maintenance operations).

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 3475-201, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 201: Visual examination.*

EN 3475-805, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 805: Characteristic impedance.*

EN 3475-806, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 806: Attenuation.*

EN 3475-812, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 812: Return loss (VSWR).*

3 Preparation of specimens

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

— Length of specimens: 2 m, unless otherwise defined in product standard.

4 Tests conditions

Unless otherwise specified in the product standard, the following test conditions shall be applied:

— Temperature at which test is carried out = 20 °C;

— Number of specimens: 3.

The following requirements shall be specified in the product standard:

— The frequency band of the measurements (DC up to the maximum frequency of the standard if not specified otherwise);

— The compressive force to be applied;

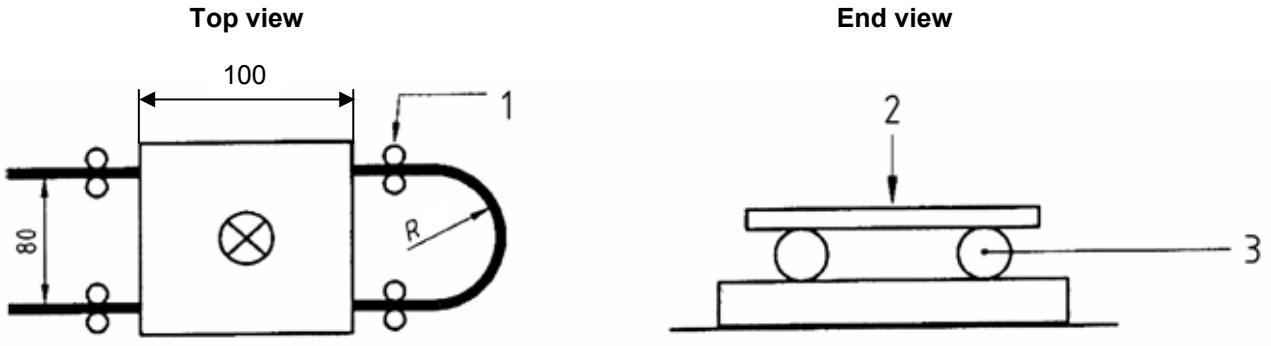
— The duration of the application of the load.

5 Apparatus

The apparatus shall allow a sample to be crushed between a flat steel base plate and a movable steel plate which applies gradually, by any convenient method, the crushing force uniformly over a **100 mm** length of the sample. The plates shall be suitably radiused to prevent sharp edges digging into the specimen.

Suitable apparatus is shown in Figure 1.

Dimensions in millimetres



Key

1 Guide
2 Load
3 Specimen

R = minimum bend radius as defined in the product standard of the cable under test.

Figure 1 — Test methods

6 Method

6.1 Measurements

Measurements, at specified frequency band, shall be performed according to their specific test standards, for:

— EN 3475-805: Characteristic impedance;

— EN 3475-806: Attenuation;

— EN 3475-812: Return loss.

6.2 Test procedure

Place the specimen in the test fixture.

Step 1 : With no load applied, obtain the initial measurement for each test.

Step 2 : The load shall be applied at a constant rate of loading as specified in the product standard until the required applied load is obtained.

Step 3 : The load shall be maintained for the specified period.

Step 4 : Remove the load.

Step 5 : When the load has been fully removed allow the specimen to recover for 15 min.

The variation of the return loss (EN 3475-812), shall be monitored continuously throughout the test.

6.3 Final measurements

Step 1 : the following tests should be carried out:

— EN 3475-201: Visual examination

— EN 3475-805: Characteristic impedance;

— EN 3475-806: Attenuation;

— EN 3475-812: Return loss.

6.4 Requirements

Characteristic impedance, attenuation and return loss, before (step 1) and after (step 5) test shall be within the requirements of the product standard.

The return loss values during the test (step 3 and step 4) shall be recorded.

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