BS EN 3475-505:2023

BSI Standards Publication

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

Part 505: Tensile test on conductors and strands

bsi.

National foreword

This British Standard is the UK implementation of EN 3475-505:2023. It supersedes BS EN 3475-505:2012, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

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

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

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Contents

Page

European foreword

This document (EN 3475-505:2023) 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, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

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 3475-505:2012.

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Table 1 — Main changes to previous edition

prEN/EN Number	Edition	Publication Date	Modification
prEN 3475-505	P3	04/2010	3 – Terms and definitions: Complete revision of the Clause. Merging of Figures 1 and 2. 4 – Apparatus: Complete revision of the Clause. Initial length is now 250 mm (was 200 mm). 5 – Method: Complete revision of the Clause. The former Annex A is moved to 5.3.

1 Scope

This document specifies a method of measuring the tensile properties of stranded conductors, single strands, solid conductors and braids.

When required, it can be used also on insulated wires and cables after removing the insulation.

It is intended to be used together with EN 3475-100.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
breaking load
limit load at which material actually breaks, with sudden release of the stored elastic energy (released as noise and/or heat and/or more cracks, e.g., for brittle materials)

Note 1 to entry: this point is marked “Fracture” on the Figure 1.

3.2
maximum load
maximum load obtained while performing the tensile test

Note 1 to entry: this point is marked “Max.” on the Figure 1.

3.3
tensile strength (or ultimate tensile strength)
tensile strength is calculated by dividing the load by the cross-sectional area

3.4
elongation at break, or ultimate elongation or total elongation
elongation at break also called total elongation or ultimate elongation is the elongation of material at rupture under tensile loading and is defined as a percentage of the original length as per formula:

$Elongation\ (\%) = \Delta L / L_0$

3.5
elastic limit
maximum stress that can be developed in a material without causing plastic deformation

Note 1 to entry: it is the stress at which a material starts to exhibit a permanent deformation.