

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Overhead lines – Requirements and tests for spacers**

**Lignes aériennes – Exigences et essais applicables aux entretoises**



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**Overhead lines – Requirements and tests for spacers**

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ELECTROTECHNICAL  
COMMISSION

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## CONTENTS

FOREWORD .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	7
4 General requirements .....	8
4.1 Design .....	8
4.2 Materials .....	9
4.2.1 General .....	9
4.2.2 Non-metallic materials .....	9
4.3 Mass, dimensions and tolerances .....	9
4.4 Protection against corrosion .....	9
4.5 Manufacturing appearance and finish .....	9
4.6 Marking .....	9
4.7 Installation instructions .....	9
4.8 Specimen .....	9
5 Quality assurance .....	10
6 Classification of tests .....	10
6.1 Type tests .....	10
6.1.1 General .....	10
6.1.2 Application .....	10
6.2 Sample tests .....	10
6.2.1 General .....	10
6.2.2 Application .....	10
6.2.3 Sampling and acceptance criteria .....	11
6.3 Routine tests .....	11
6.3.1 General .....	11
6.3.2 Application and acceptance criteria .....	11
6.4 Table of tests to be applied .....	11
7 Test methods .....	13
7.1 Visual examination .....	13
7.2 Verification of dimensions, materials and mass .....	13
7.3 Corrosion protection test .....	13
7.3.1 Hot dip galvanized components (other than stranded galvanized steel wires) .....	13
7.3.2 Ferrous components protected from corrosion by methods other than hot dip galvanizing .....	14
7.3.3 Stranded galvanized steel wires .....	14
7.3.4 Corrosion caused by non-metallic components .....	14
7.4 Non-destructive tests .....	14
7.5 Mechanical tests .....	14
7.5.1 Clamp slip tests .....	14
7.5.2 Tests on bolt sets .....	19
7.5.3 Simulated short-circuit current test and compression and tension tests .....	21
7.5.4 Characterisation of the elastic and damping properties .....	27
7.5.5 Flexibility tests .....	31
7.5.6 Fatigue tests .....	33

7.6	Tests to characterise elastomers .....	36
7.6.1	General .....	36
7.6.2	Tests .....	36
7.6.3	Ozone resistance test .....	36
7.7	Electrical tests .....	38
7.7.1	Corona and radio interference voltage (RIV) tests.....	38
7.7.2	Electrical resistance test.....	38
7.8	Verification of vibration behaviour of the bundle/spacer system .....	39
Annex A (normative) Minimum technical details to be agreed between purchaser and supplier.....		40
Annex B (informative) Compressive forces in the simulated short-circuit current test .....		41
Annex C (informative) Characterisation of the elastic and damping properties Stiffness-Damping Method .....		42
Annex D (informative) Verification of vibration behaviour of the bundle/spacer system .....		44
D.1	General.....	44
D.2	Aeolian vibration .....	44
D.3	Subspan oscillation.....	45
Annex E (informative) Description of HT conductors as given in CIGRE TB 695-2017 [7] .....		46
Bibliography.....		47
Figure 1 – Test arrangements for longitudinal slip tests .....		16
Figure 2 – Test arrangement for torsional slip tests .....		19
Figure 3 – Test arrangement for the spring force test at room temperature .....		20
Figure 4 – Test arrangement for permanent load test on conical washers .....		21
Figure 5 – Test arrangements for simulated short-circuit current tests .....		25
Figure 6 – Test arrangements for compression and tension test.....		26
Figure 7 – Typical logarithmic decrement graph.....		30
Figure 8 – Sketch of longitudinal displacement test.....		32
Figure 9 – Sketch of vertical displacement test .....		32
Figure 10 – Sketch of conical displacement test.....		32
Figure 11 – Sketch of transverse horizontal displacement test .....		33
Figure 12 – Test arrangements for subspan oscillation tests .....		34
Figure 13 – Test arrangement for aeolian vibration test .....		36
Figure C.1 – Rotation of spacer arm around the centre of the hinge.....		42
Figure C.2 – Vector representation of formula C.2 .....		43
Table 1 – Tests on spacers.....		12
Table 2 – Tests on elastomers .....		37

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**OVERHEAD LINES –  
REQUIREMENTS AND TESTS FOR SPACERS**

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International Standard IEC 61854 has been prepared by IEC technical committee 11: Overhead lines.

This second edition cancels and replaces the first edition published in 1998. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Consider the application of spacers on high temperature conductors specifying additional high temperature tests in clamp slip tests and for the characterization of elastic and damping properties;
- b) Specify as far as possible test parameters and acceptance values;
- c) Avoid as far as possible the alternative procedures for the same test;
- d) Introduce a simpler test device for the simulated short circuit current test;
- e) Introduce test at low temperature on fastener components such as break away bolts and conical spring washers;

- f) Prescribe a different procedure for subspan oscillation tests on spacers equipped with clamps having rod attachments;
- g) Modify the test procedure for the aeolian vibration tests;
- h) Prescribe a different procedure for aeolian vibration tests on spacers equipped with clamps having rod attachments;
- i) Re-edit all the figures in order to make them more clear and homogeneous;
- j) Introduce an additional test device for the simulated short circuit current test.

The text of this standard is based on the following documents:

FDIS	Report on voting
11/265/FDIS	11/272/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directive, Part 2.

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## OVERHEAD LINES – REQUIREMENTS AND TESTS FOR SPACERS

### 1 Scope

This document applies to spacers for conductor bundles of overhead lines. It covers rigid spacers, flexible spacers and spacer dampers.

It does not apply to interphase spacers, hoop spacers and bonding spacers.

NOTE This document is written to cover the line design practices and spacers most commonly used at the time of writing. There may be other spacers available for which the specific tests reported in this document may not be applicable.

In some cases, test procedures and test values are left to agreement between purchaser and supplier and are stated in the procurement contract. The purchaser is best able to evaluate the intended service conditions, which should be the basis for establishing the test severity.

In Annex A, the minimum technical details to be agreed between purchaser and supplier are listed.

### 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.

IEC 60050(466):1990, *International Electrotechnical vocabulary (IEV) – Chapter 466: Overhead lines*

IEC 60888:1987, *Zinc-coated steel wires for stranded conductors*

IEC 61284:1997, *Overhead lines – Requirements and tests for fittings*

ISO 34-1:2015, *Rubber, vulcanized or thermoplastic – Determination of tear strength – Part 1: Trouser, angle and crescent test pieces*

ISO 34-2:2015, *Rubber, vulcanized or thermoplastic – Determination of tear strength – Part 2: Small (Delft) test pieces*

ISO 37:2017, *Rubber, vulcanized or thermoplastic – Determination of tensile stress-strain properties*

ISO 188:2011, *Rubber, vulcanized or thermoplastic – Accelerated ageing or heat resistance tests*

ISO 812:2017, *Rubber, vulcanized or thermoplastic – Determination of low-temperature brittleness*

ISO 815-1:2014, *Rubber, vulcanized or thermoplastic – Determination of compression set – Part 1: At ambient or elevated temperatures*