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Luftledningar för starkström – Distansstänger – Fordringar och provning

*Overhead lines –
Requirements and tests for spacers*

Som svensk standard gäller europastandarden EN IEC 61854:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61854:2020.

Nationellt förord

Europastandarden EN IEC 61854:2020

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61854, Second edition, 2020 - Overhead lines - Requirements and tests for spacers**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61854, utgåva 1, 2003, gäller ej fr o m 2023-03-24.

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English Version

Overhead lines - Requirements and tests for spacers (IEC 61854:2020)

Lignes aériennes - Exigences et essais applicables aux
entretoises
(IEC 61854:2020)

Freileitungen - Anforderungen und Prüfungen für
Feldabstandhalter
(IEC 61854:2020)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 11/265/FDIS, future edition 2 of IEC 61854, prepared by IEC/TC 11 "Overhead lines" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61854:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-12-24
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-03-24

This document supersedes EN 61854:1998 and all of its amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC 61854:2020 was approved by CENELEC as a European Standard without any modification.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-466	1990	International Electrotechnical Vocabulary. Chapter 466: Overhead lines	-	-
IEC 60888	1987	Zinc-coated steel wires for stranded conductors	-	-
IEC 61284	1997	Overhead lines - Requirements and tests for fittings	EN 61284	1997
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 and 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	-	-
ISO 815-2	2014	Rubber, vulcanized or thermoplastic - Determination of compression set - Part 2: At low temperatures	-	-
ISO 868	2003	Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness)	EN ISO 868	2003

EN IEC 61854:2020 (E)

ISO 1183-1	2019	Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method	EN ISO 1183-1	2019
ISO 1431-1	2012	Rubber, vulcanized or thermoplastic - Resistance to ozone cracking - Part 1: Static and dynamic strain testing	-	-
ISO 1461	2009	Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods	EN ISO 1461	2009
ISO 1817	2015	Rubber, vulcanized or thermoplastic - Determination of the effect of liquids	-	-
ISO 2781	2018	Rubber, vulcanized or thermoplastic - Determination of density	-	-
ISO 2859-1	1999	Sampling procedures for inspection by attributes - Part 1: Sampling schemes indexed by acceptable quality limit (AQL) for lot-by-lot inspection	-	-
+ A1	2011		-	-
ISO 2859-2	1985	Sampling procedures for inspection by attributes - Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection	-	-
ISO 2921	2011	Rubber, vulcanized - Determination of low-temperature retraction (TR test)	-	-
ISO 3951-1	2013	Sampling procedures for inspection by variables - Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL	-	-
ISO 3951-2	2013	Sampling procedures for inspection by variables - Part 2: General specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection of independent quality characteristics	-	-
ISO 4649	2017	Rubber, vulcanized or thermoplastic - Determination of abrasion resistance using a rotating cylindrical drum device	-	-
ISO 4662	2017	Rubber, vulcanized or thermoplastic - Determination of rebound resilience	-	-
ISO 6502-2	2018	Rubber - Measurement of vulcanization characteristics using curemeters - Part 2: Oscillating disc curemeter	-	-
ISO 9001	2015	Quality management systems - Requirements	EN ISO 9001	2015

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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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 Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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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*

ISO 815-2:2014, *Rubber, vulcanized or thermoplastic – Determination of compression set – Part 2: At low temperatures*

ISO 868:2003, *Plastics and ebonite – Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 1183-1: 2019, *Plastics — Methods for determining the density of non-cellular plastics — Part 1: Immersion method, liquid pycnometer method and titration method*

ISO 1431-1:2012, *Rubber, vulcanized or thermoplastic – Resistance to ozone cracking – Part 1: Static and dynamic strain testing*

ISO 1461:2009, *Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods*

ISO 1817:2015, *Rubber, vulcanized or thermoplastic – Determination of the effect of liquids*

ISO 2781:2018, *Rubber, vulcanized or thermoplastic – Determination of density*

ISO 2859-1:1999/AMD1: 2011, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptable quality limit (AQL) for lot-by-lot inspection*

ISO 2859-2:1985, *Sampling procedures for inspection by attributes – Part 2: Sampling plans indexed by limiting quality level (LQ) for isolated lot inspection*

ISO 2921:2011, *Rubber, vulcanized – Determination of low-temperature retraction (TR test)*

ISO 3951-1:2013, *Sampling procedures for inspection by variables -- Part 1: Specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection for a single quality characteristic and a single AQL*

ISO 3951-2:2013, *Sampling procedures for inspection by variables -- Part 2: General specification for single sampling plans indexed by acceptance quality limit (AQL) for lot-by-lot inspection of independent quality characteristics*

ISO 4649:2017, *Rubber, vulcanized or thermoplastic – Determination of abrasion resistance using a rotating cylindrical drum device*

ISO 4662:2017, *Rubber, vulcanized or thermoplastic – Determination of rebound resilience*

ISO 6502-2:2018, *Rubber – Measurement of vulcanization characteristics using curemeters – Part 2: Oscillating disc curemeter*

ISO 9001:2015, *Quality management systems – Requirements*