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STN P	**Vodiče pre vonkajšie vedenie Kompozitné jadro vystužené vkáknami ako nosný prvok Časť 2: Kompozitné jadrá s kovovou matricou**	**STN P CLC IEC/TS 62818-2 34 7517**

Conductors for overhead lines - Fiber reinforced composite core used as supporting member material - Part 2: Metallic matrix composite cores

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/26

Obsahuje: CLC IEC/TS 62818-2:2026, IEC TS 62818-2:2024

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TECHNICAL SPECIFICATION

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English Version

Conductors for overhead lines - Fiber reinforced composite core used as supporting member material - Part 2: Metallic matrix composite cores (IEC/TS 62818-2:2024)

Conducteurs pour lignes aériennes - Âme composite renforcé par fibres, utilisé en tant que matériau de support - Partie 2: Âmes composites à matrice métallique (IEC/TS 62818-2:2024)

Leiter für Freileitungen - Kern aus faserverstärktem Verbundwerkstoff als tragendes Material - Teil 2: Kerne aus Metallmatrix-Verbundwerkstoff (IEC/TS 62818-2:2024)

This Technical Specification was approved by CENELEC on 2026-02-09.

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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

Ref. No. CLC IEC/TS 62818-2:2026 E

European foreword

This document (CLC IEC/TS 62818-2:2026) consists of the text of document IEC/TS 62818-2:2024, prepared by IEC/TC 7 "Overhead electrical conductors".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Technical Specification IEC/TS 62818-2:2024 was approved by CENELEC as a European Technical Specification 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.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60068-2-11	2021	Environmental testing - Part 2-11: Tests - Test Ka: Salt mist	EN IEC 60068-2-11	2021
IEC 60216-1	2013	Electrical insulating materials - Thermal endurance properties - Part 1: Ageing procedures and evaluation of test results	EN 60216-1	2013
IEC 60468	1974	Method of measurement of resistivity of metallic materials	-	-
IEC 63248	2022	Conductors for overhead lines - Coated or cladded metallic wire for concentric lay stranded conductors	EN IEC 63248	2022
ISO 527-5	2021	Plastics - Determination of tensile properties - Part 5: Test conditions for unidirectional fibre-reinforced plastic composites	EN ISO 527-5	2021
ISO 11359-1	2023	Plastics - Thermomechanical analysis (TMA) - Part 1: General principles	-	-
ISO 11359-2	2021	Plastics_- Thermomechanical analysis (TMA)_- Part_2: Determination of coefficient of linear thermal expansion and glass transition temperature	-	-
ISO 14125	1998	Fibre-reinforced plastic composites - Determination of flexural properties	EN ISO 14125	1998

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Conductors for overhead lines – Fiber reinforced composite core used as supporting member material – Part 2: Metallic matrix composite cores

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TECHNICAL SPECIFICATION

Conductors for overhead lines – Fiber reinforced composite core used as supporting member material – Part 2: Metallic matrix composite cores

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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CONDUCTORS FOR OVERHEAD LINES – FIBER REINFORCED COMPOSITE CORE USED AS SUPPORTING MEMBER MATERIAL –

Part 2: Metallic matrix composite cores

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC TS 62818-2 has been prepared by IEC technical committee 7: Overhead Electrical Conductors. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
7/753/DTS	7/755/RVDTS

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

The language used for the development of this Technical Specification is English.

A list of all parts in the IEC 62818 series, published under the general title *Conductors for overhead lines – Fiber reinforced composite core used as supporting member material*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The first conductors using a composite core were installed in the early 2000s. Since then, they have been increasingly used by utilities worldwide. As a result, there is a need for an IEC publication to agree on tests methods to qualify these cores.

Because of the potential variety of products possible for this purpose, this document does not set minima or maxima (usually provided by the manufacturer, but rather standardizes testing methods to ascertain the numerical values of the basic properties needed by the purchaser to choose the right supporting member material according to the properties of the overhead line conductors. Future discussion items for review may include: performance level and acceptance criteria, other ageing tests and criteria or other relevant tests.

In a future document, tests on the complete conductor which include the composite core will be covered in detail (for example salt fog, corrosion test, mechanical tests, etc.).

CONDUCTORS FOR OVERHEAD LINES – FIBER REINFORCED COMPOSITE CORE USED AS SUPPORTING MEMBER MATERIAL –

Part 2: Metallic matrix composite cores

1 Scope

This part of IEC 62818, which is a Technical Specification, establishes a system of fiber reinforced composite cores used as supporting member material in conductors for overhead lines which may be used as the basis for specifications. This document is applicable to fiber reinforced composite core, with a metallic matrix, used as supporting member material in conductors for overhead lines.

This document gives guidance on:

– defining the common terms used for fiber reinforced composite cores with a metallic matrix,
– prescribing common methods and recommendations to characterize the properties of fiber reinforced composite cores based on single or multi-wires, with MMC (Metallic Matrix Composite) used as a supporting member material in conductors,
– prescribing or recommending acceptance or failure criteria when applicable.

These tests, criteria and recommendations are intended to ensure a satisfactory use and quality under normal operating and environmental conditions.

This document does not prescribe performance or compliance criteria which may be required but indicative values could be given in Annexes for guidance.

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 60068-2-11:2021, *Environmental testing – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60216-1:2013, *Electrical insulating materials – Thermal endurance properties – Part 1: Ageing procedures and evaluation of test results*

IEC 60468:1974, *Method of measurement of resistivity of metallic materials*

IEC 63248:2022, *Conductors for overhead lines – Coated or cladded metallic wire for concentric lay stranded conductors*

ISO 527-5:2021, *Plastics: Determination of tensile properties – Part 5: Test conditions for unidirectional fiber-reinforced plastic composites*

ISO 11359-1:2023, *Plastics – Thermomechanical analysis (TMA) – Part 1: General principles*

ISO 11359-2:2021, *Plastics – Thermomechanical analysis (TMA) – Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

ISO 14125:1998, *Fiber-reinforced plastic composites – Determination of flexural properties*