



SLOVENSKI STANDARD
SIST EN IEC 63248:2023/A11:2023

01-april-2023

Vodniki za nadzemne vode - Prevlečena ali prekrita kovinska žica za koncentrično pletene vodnike - Dopolnilo A11

Conductors for overhead lines - Coated or clad metallic wire for concentric lay stranded conductors

Leiter für Freileitungen - Beschichtete oder ummantelte Metalldrähte für Leiter aus konzentrisch verseilten Drähten

Conducteurs pour lignes aériennes - Fil métallique revêtu ou recouvert pour conducteurs toronnés à couches concentriques

Ta slovenski standard je istoveten z: EN IEC 63248:2022/A11:2022

ICS:

| | | |
|-----------|------------|---|
| 29.240.20 | Daljnovodi | Power transmission and distribution lines |
|-----------|------------|---|

| | |
|--|-----------------|
| SIST EN IEC 63248:2023/A11:2023 | en,fr,de |
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EUROPEAN STANDARD

EN IEC 63248:2022/A11

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2022

ICS 29.060.01; 29.240.20

English Version

Conductors for overhead lines - Coated or cladded metallic wire for concentric lay stranded conductors

Conducteurs pour lignes aériennes - Fil métallique revêtu
ou recouvert pour conducteurs toronnés à couches
concentriques

Leiter für Freileitungen - Beschichtete oder ummantelte
Metalldrähte für Leiter aus konzentrisch verseilten Drähten

This amendment A11 modifies the European Standard EN IEC 63248:2022; it was approved by CENELEC on 2022-04-11. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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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

EN IEC 63248:2022/A11:2022 (E)**European foreword**

This document (EN IEC 63248:2022/A11:2022) has been prepared by CLC/TC 7X “Overhead electrical conductors”.

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2023-04-11
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2025-04-11
this document have to be withdrawn

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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.

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1 Modifications to Table A.1, “Wire Designation”

Add the designations “ST3D, ST4A, ST5E” to Table A.1 as follows:

Add “D, E” to footnote ^e to Table A.1 as follows:

| Group | Designation | Wire designation |
|--|-------------|------------------------|
| Group 1 ^{e,f} Zinc-coated steel wires | S1A | Zinc-coated steel S1A |
| | ST1A | Zinc-coated steel ST1A |
| | ST3D | Zinc-coated steel ST3D |
| | ST4A | Zinc-coated steel ST4A |
| | S2A | Zinc-coated steel S2A |
| | ST5E | Zinc-coated steel ST5E |
| | S3A | Zinc-coated steel S3A |
| ^e For Group 1, Group 4 and Group 5 the last letter (A, B, C, D, E) refers to the coating class. | | |

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EN IEC 63248:2022/A11:2022 (E)

2 Modification to Table A.4, “Requirements for zinc and zinc-aluminium alloy coated steel wires (group 1, group 4 and group 5)”

Add the designations “ST3D, ST4A, ST5E” to Table A.4 in the same sequence as given in Table A.1 (see Modification 1):

| Nominal Diameter, mm | | Diameter tolerance, mm | Min. stress at 1 % extension, MPa | Min. ultimate tensile strength, MPa | Min. lot average tensile strength, a MPa | Min. elongation after break, % | Ratio of mandrel diameter to wire diameter for ductility wrapping test -- | Ratio of mandrel diameter to wire diameter for coating adherence test -- | Min. number of torsions -- |
|----------------------|------------------------|------------------------|-----------------------------------|-------------------------------------|--|--------------------------------|---|--|----------------------------|
| Over -- | Up to and including -- | | | | | | | | |
| ST3D | | | | | | | | | |
| 1,24 | 1,50 | ±0,05 | 1 210 | 1 500 | | 4,0 | 2 | 4 | 16 |
| 1,50 | 1,75 | ±0,07 | 1 210 | 1 500 | | 4,0 | 2 | 4 | 16 |
| 1,75 | 2,25 | ±0,08 | 1 210 | 1 500 | | 4,0 | 2 | 4 | 16 |
| 2,25 | 2,75 | ±0,10 | 1 210 | 1 500 | | 4,0 | 3 | 4 | 16 |
| 2,75 | 3,00 | ±0,12 | 1 210 | 1 500 | | 4,0 | 3 | 4 | 16 |
| 3,00 | 3,50 | ±0,13 | 1 100 | 1 400 | | 4,0 | 3 | 4 | 16 |
| 3,50 | 4,25 | ±0,13 | 1 100 | 1 400 | | 4,0 | 3 | 5 | 14 |
| 4,25 | 4,75 | ±0,13 | 1 100 | 1 400 | | 4,0 | 3 | 5 | 14 |
| 4,75 | 5,50 | ±0,13 | 1 100 | 1 400 | | 4,0 | 3 | 5 | 14 |
| ST4A | | | | | | | | | |
| 1,24 | 1,50 | ±0,03 | 1 275 | 1 670 | | 3,5 | 2 | 4 | 12 |
| 1,50 | 1,75 | ±0,03 | 1 275 | 1 670 | | 3,5 | 2 | 4 | 12 |
| 1,75 | 2,25 | ±0,03 | 1 275 | 1 670 | | 3,5 | 2 | 4 | 12 |
| 2,25 | 2,75 | ±0,04 | 1 275 | 1 670 | | 4,0 | 3 | 4 | 12 |
| 2,75 | 3,00 | ±0,05 | 1 275 | 1 670 | | 4,0 | 3 | 4 | 12 |
| 3,00 | 3,50 | ±0,05 | 1 225 | 1 620 | | 4,0 | 3 | 4 | 12 |
| 3,50 | 4,25 | ±0,06 | 1 225 | 1 620 | | 4,0 | 3 | 5 | 12 |
| 4,25 | 4,75 | ±0,06 | 1 225 | 1 620 | | 4,0 | 3 | 5 | 12 |
| 4,75 | 5,50 | ±0,07 | 1 225 | 1 620 | | 4,0 | 3 | 5 | 12 |
| ST5E | | | | | | | | | |
| 1,24 | 1,75 | ±0,03 | 1 420 | 1 620 | | 3,5 | 4 | 4 | |
| 1,75 | 2,30 | ±0,04 | 1 420 | 1 620 | | 3,5 | 4 | 4 | |
| 2,30 | 2,55 | ±0,04 | 1 370 | 1 620 | | 4,0 | 4 | 4 | |
| 2,55 | 2,75 | ±0,04 | 1 370 | 1 670 | | 4,0 | 4 | 4 | |
| 2,75 | 3,50 | ±0,05 | 1 370 | 1 670 | | 4,0 | 4 | 4 | |
| 3,50 | 4,75 | ±0,06 | 1 370 | 1 670 | | 4,0 | 5 | 5 | |
| 4,75 | 5,50 | ±0,07 | 1 370 | 1 670 | | 4,0 | 5 | 5 | |

3 Modification to Table A.7, “Initial setting for determining stress at 1 % extension”

Add the designations “ST3D, ST4A, ST5E” to Table A.7 as follows:

| Nominal Diameter, mm | | Initial stress, MPa | Initial setting of extensometer, % |
|--|---------------------|------------------------|--|
| Over | Up to and including | | |
| Zinc and Zinc aluminium alloy wires (group 1, group 4, group 5) Designations: S1 – S2 – S3 – ST1A – ST3D – ST4A – ST5E – ST6C | | | |
| 1,24 | 2,25 | 100 | 0,05 |
| 2,25 | 3,00 | 200 | 0,10 |

4 Modification to Table A.8, “Coating requirements for zinc and zinc-aluminium alloy coated wires”

Add the designations “ST3D, ST4A, ST5E” to Table A.8 as follows:

| Min. mass of coating, g/m ² | | | | | |
|--|---------------------|---------|------|------|------|
| Group 1 Zinc coated wire | | | | | |
| Diameter, mm | | Class A | | ST3D | ST5E |
| Over | Up to and including | ST4A | ST6C | | |
| 1,24 | 1,50 | 185 | 150 | 365 | 185 |
| 1,50 | 1,75 | 200 | 160 | 460 | 200 |
| 1,75 | 2,25 | 215 | 175 | 550 | 215 |
| 2,25 | 3,00 | 230 | 190 | 640 | 250 |
| 3,00 | 3,50 | 245 | 205 | 730 | 250 |
| 3,50 | 4,25 | 260 | 260 | 730 | 260 |
| 4,25 | 4,75 | 275 | 275 | 775 | 275 |
| 4,75 | 5,50 | 290 | 290 | 825 | 290 |

EN IEC 63248:2022/A11:2022 (E)

5 Modification to Table A.12, “Minimum number of dips for Zn and Zn Alloy coatings (group 1, group 4, group 5)”

Add the designations “ST3D, ST4A, ST5E” to Table A.12 as follows:

| Diameter, mm | | Class A, ST4A, 5MS1B Number of dips | | ST3D Number of dips | | ST5E Number of dips | | ST6C Number of dips | |
|--------------|---------------------|--|-------------------------|------------------------|-------------------------|------------------------|-------------------------|------------------------|-------------------------|
| Over | Up to and including | of 1 min ^a | of 1/2 min ^b | of 1 min ^a | of 1/2 min ^b | of 1 min ^a | of 1/2 min ^b | of 1 min ^a | of 1/2 min ^b |
| 1,24 | 1,75 | 2 | - | 3 | 1 | 2 | - | 1 | 1 |
| 1,75 | 2,00 | 2 | 1 | 4 | - | 2 | 1 | 2 | - |
| 2,00 | 2,25 | 2 | 1 | 4 | - | 3 | 1 | 2 | - |
| 2,25 | 3,00 | 3 | - | 5 | - | 3 | 1 | 2 | 1 |
| 3,00 | 3,50 | 3 | 1 | 6 | - | 3 | 1 | 3 | - |
| 3,50 | 4,25 | 3 | 1 | 6 | - | 3 | 1 | 3 | 1 |
| 4,25 | 4,75 | 4 | - | 6 | - | 4 | - | 4 | - |
| 4,75 | 5,50 | 4 | - | 6 | - | 4 | - | 4 | - |

^a for zinc-aluminium alloy coatings one dip equals 45 s instead of 1 min
^b for zinc-aluminium alloy coatings one dip equals 22 s instead of 1/2 min

6 Modification to Table B.1, “Properties of wire for calculation purposes”

Add the designations “ST3D, ST4A, ST5E” to Table B.1 as follows:

| Group | Designation | Density at 20°C kg/m ³ | Resistivity at 20°C Ω·mm ² /m | Coefficient of linear expansion °C ⁻¹ | Temperature coefficient of resistance, α, at 20°C °K ⁻¹ | Modulus of elasticity GPa |
|-------|---|--------------------------------------|---|---|---|------------------------------|
| 1 | S1A, ST1A, S2A, S3A, ST6C, S4A, S5A, ST4A, ST3D, ST5E | 7 780 | 0,191 57 | 11,5 × 10 ⁻⁶ | 0,0036 | 195 |
| | S6A, S7A, S8A | 7 780 | a | 11,5 × 10 ⁻⁶ | 0,0036 | 195 |

7 Addition of Annex E, Special national conditions

Annex E (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard or Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Clause Special national condition

7.4.3

Norway

An additional grade of steel may be used to accommodate the climatic conditions.

This grade shall have the properties given below and shall have a class A zinc coating. In all other respects the requirements of this specification shall be followed.

Tensile strength (R_m) 980 N/mm² minimum – 1 180 N/mm² maximum

Stress at 1 % extension (R_{e1} %) 880 N/mm² minimum – 1 080 N/mm² maximum

7.4.4.3

Norway

ST5E wire shall be subjected to a reverse bend test in place of a torsion test. The test method shall be as described in ISO 7801, with the radius of the cylindrical support and the number of bends required before breaking given in Table E.1.

Table E.1

| Nominal wire diameter mm | | Radius of cylindrical support | Number of bends |
|-----------------------------|------------------------|----------------------------------|-----------------|
| Over | Up to and including | mm | |
| 1,24 | 1,50 | 3,75 | 7 |
| 1,50 | 2,00 | 5,0 | 7 |
| 2,00 | 2,30 | 7,5 | 10 |
| 2,30 | 2,55 | 7,5 | 8 |
| 2,55 | 2,70 | 7,5 | 6 |
| 2,70 | 3,00 | 7,5 | 5 |
| 3,00 | 4,00 | 10,0 | 5 |
| 4,00 | 5,50 | 15,0 | 4 |

ST1A wire shall be subjected to a reverse bend test in place of a torsion test. The test method shall be as described in ISO 7801, with the radius of the cylindrical support and the number of bends required before breaking given in Table E.2.

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Table E.2

| Nominal wire diameter mm | | Radius of cylindrical support | Number of bends |
|-----------------------------|------------------------|----------------------------------|-----------------|
| Over | Up to and including | mm | |
| 1,24 | 1,50 | 3,75 | 9 |
| 1,50 | 2,00 | 5,0 | 9 |
| 2,00 | 2,30 | 7,5 | 12 |
| 2,30 | 2,55 | 7,5 | 10 |
| 2,55 | 2,70 | 7,5 | 8 |
| 2,70 | 3,00 | 7,5 | 7 |
| 3,00 | 4,00 | 10,0 | 7 |
| 4,00 | 5,50 | 15,0 | 6 |

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