



SLOVENSKI STANDARD

SIST EN 50290-2-36:2016

01-oktober-2016

Komunikacijski kabli - 2-36. del: Skupna pravila za snovanje in konstruiranje - Izolacijska zmes iz zamrežene silikonske gume

Communication cables - Part 2-36: Common design rules and construction - Crosslinked Silicone rubber insulation compound

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Câbles de communication - Partie 2-36: Règles de conception communes et construction - Mélange de caoutchouc silicone réticulé pour enveloppes isolantes

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| 29.035.20 | Plastični in gumeni izolacijski materiali | Plastics and rubber insulating materials |
| 33.120.10 | Koaksialni kabli. Valovodi | Coaxial cables. Waveguides |

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EUROPEAN STANDARD

EN 50290-2-36

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Communication cables - Part 2-36: Common design rules and construction - Crosslinked Silicone rubber insulation compound

Câbles de communication - Partie 2-36: Règles de conception communes et construction - Mélange de caoutchouc silicone réticulé pour enveloppes isolantes

Kommunikationskabel - Teil 2-36: Gemeinsame Regeln für Entwicklung und Konstruktion - Vernetzte Silikongummi-Isoliermischung

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

| Contents | Page |
|--|-------------|
| European foreword..... | 3 |
| 1 Scope..... | 4 |
| 2 Normative references..... | 4 |
| 3 Compound test requirements | 4 |
| 4 Cable test requirements | 5 |
| 5 Health, Safety and Environmental (HSE) Regulations | 5 |

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European foreword

This document (EN 50290-2-36:2016) has been prepared by CLC/TC 46X, "Communication cables".

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-07-22
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-07-22

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EN 50290-2-36:2016 (E)

1 Scope

This Part 2-36 of EN 50290 gives specific requirements for crosslinked Silicone rubber compound (SiR) to be used for the insulation of fire resistant cables.

It is essential to read this European Standard in conjunction with Part 2-20 of EN 50290 and other applicable product standards.

Using raw material and type test data as outlined in this standard, the raw material supplier will have sufficient data to demonstrate compliance and warrant that the material is suitable for the specified application.

This part 2-36 of EN 50290 describes the compound type as given in Table 1.

Table 1 — Crosslinked SiR insulation compound

| Type | Maximum operating temperature |
|------|-------------------------------|
| SiR | 180 °C |

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50290-2-20, *Communication cables — Part 2-20: Common design rules and construction — General*

EN 60684-2, *Flexible insulating sleeving — Part 2: Methods of test (IEC 60684-2)*

EN 60754-1, *Test on gases evolved during combustion of materials from cables — Part 1: Determination of the halogen acid gas content (IEC 60754-1)*

EN 60754-2, *Test on gases evolved during combustion of materials from cables — Part 2: Determination of acidity (by pH measurement) and conductivity (IEC 60754-2)*

EN 60811-401, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 401: Miscellaneous tests — Thermal ageing methods — Ageing in an air oven (IEC 60811-401)*

EN 60811-501, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 501: Mechanical tests — Tests for determining the mechanical properties of insulating and sheathing compounds (IEC 60811-501)*

EN 60811-507, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 507: Mechanical tests - Hot set test for cross-linked materials (IEC 60811-507)*

EN 60811-606, *Electric and optical fibre cables — Test methods for non-metallic materials — Part 606: Physical tests — Methods for determining the density (IEC 60811-606)*

3 Compound test requirements

The tests are to be carried out on granules or moulded plaques (or other suitable forms) produced from granules of the supplied compound. This data shall describe the general performance of Silicone rubber insulation compounds. The data shall be provided by the compound supplier and therefore can be included in any supply specification of the raw material. Test methods, relevant requirements and limits are shown in Table 2. In the case of special applications, additional requirements could be specified.

4 Cable test requirements

The anticipated performance assumes standard cable design and conventional process technology and is specified in Table 3. In case of specific applications, additional requirements could be specified. Relevant test methods and requirements, especially referring to any cable fire performance, shall be included in the detailed specification of the cable.

5 Health, Safety and Environmental (HSE) Regulations

The materials are subject to Health, Safety and Environmental (HSE) requirements as defined in EN 50290-2-20. Any deviations or compliance failures must be identified by the raw material supplier and necessary corrective actions to be undertaken agreed with the cable maker.

Table 2 — Crosslinked Silicone rubber insulation compound – properties on granules^a

| Characteristics | Test method | Unit | Values |
|--|--------------------------------|-------------------|---|
| 1 Corrosivity of gases pH-value conductivity value | EN 60754-2 | [-] µS/mm | ≥ 4,3 ≤ 10 |
| 2 Halogen acid content HCl/HBr HF | EN 60754-1 EN 60684-2, 45.2 | % % | ≤ 0,5 ≤ 0,1 |
| 3 Density | EN 60811-606 | g/cm ³ | to be reported by supplier ^b |
| ^a All values of Table 2 shall be provided by the compound supplier, see Clause 3. ^b Informative: to be given values are only to characterize the material in order to give a perception whether the material is suitable to meet the cable requirements requested in the relevant product standard/specification. | | | |

Table 3 — Crosslinked Silicone rubber insulation compound – properties on cable

| Characteristics | Test method | Unit | Value |
|-----------------|--|-------------------|----------------|
| 1 | Mechanical properties | | |
| 1.1 | Before ageing | EN 60811-501 | |
| 1.1.1 | Tensile strength – median, min. | MPa | 5 |
| 1.1.2 | Elongation at break – median, min. | % | 150 |
| 1.2 | After ageing Ageing conditions – temperature – duration | EN 60811-401 | |
| | | °C h | 200±3 10x24 |
| 1.2.1 | Tensile strength – median, min. | MPa | 4 |
| 1.2.2 | Elongation at break – median, min. | % | 120 |
| 2 | Hot set test | EN 60811-507 | |
| | Test conditions | | |
| | – Temperature | °C | 250±3 |
| | – Duration | min | 15 |
| | – Tensile force | N/cm ² | 20±0,5 |
| | Results to be obtained | | |
| | Elongation under load | | |
| | - max. | % | 100 |
| | Residual Elongation | | |
| | - max. | % | 25 |