**STA/SD/OP/04/F2**

**KENYA BUREAU OF STANDARDS**

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| **Document Type:** | **Adoption proposal** | |
| **Dates:** | Circulation date | Closing date |
| 2020-03-10 | 2020-04-11 |
| **TC Secretary** | **This form shall be filled, signed and returned to Kenya Bureau of Standards for the attention of Robert Njoroge (njoroger@kebs.org)** | |

The Kenya Bureau of Standards intends to adopt the International Standards listed below.

We are therefore seeking views from potential users in respect of the same. The Standards are available at the Kenya Bureau of Standards Information Resource Centre. Please tick and fill your preference of the listed option in the attached table against each of the standards.

Where the option is that the adoption is not acceptable, you **MUST** give a reason(s) and recommendation(s).

**NOTE 1:** Absence of any reply or comments shall be deemed to be an acceptance of the proposal for adoption and **shall constitute an approval vote**.

1. **Number**: IEC 60287-1-1:2006+AMD1:2014 CSV to replace KS IEC 60287-1-1:2006

**Title**: Kenya Standard- Electric cables - Calculation of the current rating - Part 1-1:Current rating equations (100 % load factor) and calculation of losses – General, First Edition

**Scope**: IEC 60287-1-1:2006+A1:2014 Applicable to the conditions of steady-state operation of cables at all alternating voltages, and direct voltages up to 5 kV, buried directly in the ground, in ducts, troughs or in steel pipes, both with and without partial drying-out of the soil, as well as cables in air. The term "steady state" is intended to mean a continuous constant current (100 % load factor) just sufficient to produce asymptotically the maximum conductor temperature, the surrounding ambient conditions being assumed constant. Provides formulae for current ratings and losses. The formulae given are essentially literal and designedly leave open the selection of certain important parameters. These may be divided into three groups:

- parameters related to construction of a cable (for example, thermal resistivity of insulating material) for which representative values have been selected based on published work;

- parameters related to the surrounding conditions, which may vary widely, the selection of which depends on the country in which the cables are used or are to be used;

- parameters which result from an agreement between manufacturer and user and which involve a margin for security of service (for example, maximum conductor temperature).

<https://webstore.iec.ch/publication/1266>

1. **Number**: IEC 60287-2-1:2015 To replace KS IEC 60287-2-1:2006

**Title**: Kenya Standard- Electric cables - Calculation of the current rating - Part 2-1: Thermal resistance - Calculation of thermal resistance, Second Edition

**Scope**: IEC 60287-2-1:2015 is solely applicable to the conditions of steady-state operation of cables at all alternating voltages, and direct voltages up to 5 kV, buried directly in the ground, in ducts, in troughs or in steel pipes, both with and without partial drying-out of the soil, as well as cables in air. The term "steady state" is intended to mean a continuous constant current (100 % load factor) just sufficient to produce asymptotically the maximum conductor temperature, the surrounding ambient conditions being assumed constant.

<https://webstore.iec.ch/publication/22254>

1. **Number**: IEC 60287-1-2:1993

**Title**: Kenya Standard- Electric cables - Calculation of the current rating - Part 1: Current rating equations (100 % load factor) and calculations of losses - Section 2: Sheath eddy current loss factors for two circuits in flat formation, Second Edition

**Scope**: Provides a method for calculating the eddy current losses in the metallic sheaths of single-core cables arranged as a three-phase, double-circuit in flat formation.

<https://webstore.iec.ch/publication/1267>

1. **Number**: IEC 60287-1-3:2002

**Title**: Kenya Standard — Electric cables - Calculation of the current rating - Part 1-3: Current rating equations (100 % load factor) and calculation of losses - Current sharing between parallel single-core cables and calculation of circulating current losses, First Edition

**Scope**: Provides a method for calculating the phase currents and circulating current losses in single-core cables arranged in parallel. The method described in this standard can be used for any number of cables per phase in parallel in any physical layout. The phase currents can be calculated for any arrangement of sheath bonding. For the calculation of sheath losses, it is assumed that the sheaths are bonded at both ends. A method for calculating sheath eddy current losses in two circuits in flat formation is given in IEC 60287-1-2.

<https://webstore.iec.ch/publication/1268>

1. **Number**: IEC 60287-2-3:2017

**Title**: Kenya Standard — Electric cables - Calculation of the current rating - Part 2-3: Thermal resistance - Cables installed in ventilated tunnels, First Edition

**Scope**: IEC 60287-2-3:2017 describes a method for calculating the continuous current rating factor for cables of all voltages installed in ventilated tunnels. The method is applicable to any type of cable.

The method applies to natural as well as forced ventilation.

Longitudinal heat transfer within the cables and the surroundings of the tunnel is assumed to be negligible.

All cables are assumed to be identical within the tunnel and it is assumed that the tunnel cross-section does not change with distance along the tunnel.

<https://webstore.iec.ch/publication/28493>

1. **Number**: IEC 60287-3-1:2017

**Title**: Kenya Standard — Electric cables - Calculation of the current rating - Part 3-1: Operating conditions - Site reference conditions, First Edition

**Scope**: IEC 60287-3-1:2017 is applicable to the conditions of steady-state operation of cables at all voltages, buried directly in the ground, in ducts, troughs or in steel pipes, both with and without partial drying-out of the soil, as well as cables in air. The term "steady state" is intended to mean a continuous constant current (100 % load factor) just sufficient to produce asymptotically the maximum conductor temperature, the surrounding ambient conditions being assumed constant. This document defines site reference conditions, however the general values are superseded by specific national requirements. This edition includes the following significant technical changes with respect to the previous edition:  
- the updated list of national laying conditions is now covered in Annex A;  
- Clause 5 about the information required from the purchaser for the selection of the appropriate type of cable has been removed.

<https://webstore.iec.ch/publication/60845>

1. **Number**: IEC 60287-3-2:2012

**Title**: Kenya Standard — Electric cables - Calculation of the current rating - Part 3-2: Sections on operating conditions - Economic optimization of power cable size, First Edition

**Scope**: IEC 60287-3-2:2012 sets out a method for the selection of a cable size taking into account the initial investments and the future costs of energy losses during the anticipated operational life of the cable. Matters such as maintenance, energy losses in forced cooling systems and time of day energy costs have not been included in this standard. Two examples of the application of the method to hypothetical supply systems are given in Annex A.

<https://webstore.iec.ch/publication/1279>

1. **Number**: IEC 60287-3-3:2007

**Title**: Kenya Standard — Electric cables - Calculation of the current rating - Part 3-3: Sections on operating conditions - Cables crossing external heat sources, First Edition

**Scope**: Describes a method for calculating the continuous current rating factor for cables of all voltages where crossings of external heat sources are involved. The method is applicable to any type of cable. The method assumes that the entire region surrounding a cable, or cables, has uniform thermal characteristics and that the principle of superposition applies. The principle of superposition does not strictly apply to touching cables and hence the calculation method set out in this standard will produce an optimistic result if applied to touching cables.

<https://webstore.iec.ch/publication/1280>

1. **Number**: IEC 60156:2018

**Title**: Kenya Standard — Insulating liquids - Determination of the breakdown voltage at power frequency - Test method, First Edition

**Scope**: IEC 60156:2018 specifies the method for determining the dielectric breakdown voltage of insulating liquids at power frequency. The test procedure is performed in a specified apparatus, where the oil sample is subjected to an increasing AC electrical field until breakdown occurs. The method applies to all types of insulating liquids of nominal viscosity up to 350 mm2/s at 40 °C. It is appropriate both for acceptance testing on unused liquids at the time of their delivery and for establishing the condition of samples taken in monitoring and maintenance of equipment. This third edition cancels and replaces the second edition published in 1995. This edition constitutes a technical revision and, mainly, confirms the content of the previous edition even if some advances are included. The test method has not been changed for practical reason due to the very large number of instrumentation disseminated around the world, even if the use of stirring is now recommended.

<https://webstore.iec.ch/publication/63770>

**ADOPTION PROPOSAL**

| **S/No.** | **Standard Number** | **Adoption acceptable as presented** | **Adoption proposal not acceptable** | **Reason why adoption proposal not acceptable** | **Proposed Change/recommendation(s)** |
| --- | --- | --- | --- | --- | --- |
|  | IEC 60287-1-1:2014 |  |  |  |  |
|  | IEC 60287-1-2:1993 |  |  |  |  |
|  | IEC 60287-1-3:2002 |  |  |  |  |
|  | IEC 60287-2-3:2017 |  |  |  |  |
|  | IEC 60287-3-1:2017 |  |  |  |  |
|  | IEC 60287-3-2:2012 |  |  |  |  |
|  | IEC 60287-2-1:2015 |  |  |  |  |
|  | IEC 60287-3-3:2007 |  |  |  |  |
|  | IEC 60156:2018 |  |  |  |  |

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| Name and (of respondent) |  | Position |  |
| Signature |  |  |  |

On behalf of: (Name of organization)

Date (& stamp):