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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 2
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Miscellaneous lampholders – Part 1: General requirements and tests

Douilles diverses pour lampes – Partie 1: Exigences générales et essais

IEC 60838-1:2016-05/AMD2:2020-02(en-fr)

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Miscellaneous lampholders – Part 1: General requirements and tests

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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FOREWORD

This amendment has been prepared by subcommittee 34B: Lamp caps and holders, of IEC technical committee 34: Lamps and related equipment.

The text of this amendment is based on the following documents:

FDIS	Report on voting
34B/2071/FDIS	34B/2076/RVD

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

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

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- withdrawn,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

2 Normative references

Replace the reference to IEC 60598-1:2014 with the following:

IEC 60598-1:2014, *Luminaires – Part 1: General requirements and tests*
IEC 60598-1:2014/AMD1:2017

Replace "IEC 60664-1" *with* "IEC 60664-1:2007".

5 General conditions for tests

5.3

In the last paragraph, replace “rated pulse voltage” with “rated ignition voltage”.

7 Marking

7.2

In 7.2, modified by Amendment 1, list item f), fourth dash, replace "pulse voltage" *with* "iginition voltage".

Delete NOTE 3, added by Amendment 1.

In the first sentence of the second paragraph after NOTE 3, starting with "For polarized lampholders the figure marked...", *replace* "pulse voltage" *with* "ignition voltage" *and* "rated pulse voltage" *with* "rated iginition voltage".

9 Terminals

9.3

In the second paragraph, after "5.3 of IEC 60598-1:2014", add "and IEC 60598-1:2014/AMD1:2017".

12 Moisture resistance, insulation resistance and electric strength

12.2.1

Table 1

Replace the last row of Table 1 and add a footnote to the table, as follows:

In lampholders without provision for earthing, between live parts connected together and – external metal parts including fixing screws – metal foil covering external parts of insulation material[a]	1	4
[a] Metal foil is applied for testing only.		

12.2.2

In the NOTE replace "pulse" *with* "ignition".

13 Mechanical strength

In the second paragraph replace the reference to "Clause 4 of IEC 60068-2-75:2014" *with* "Clause 5 of IEC 60068-2-75:2014".

15 Creepage distances and clearances

Table 2a and Table 2b

In the penultimate row of Table 2a and Table 2b, both modified by Amendment 1, delete the last paragraph starting with "In Japan..." *and add, after the first paragraph starting with* "Values for creepage distances..." *the following new paragraph:*

For glass, ceramics or other inorganic insulating materials which do not track, creepage distances need not be greater than their associated clearance for the purpose of insulation coordination. The dimensions of this table are appropriate.

*After Table 2b, delete the paragraph starting with "*However, the distances between live contacts...*".*

Insert, between NOTE 2, added by Amendment 1 and Table 3, modified by Amendment 1, the following new paragraph:

Guidance on working voltages U_{out} can be found in Annex F.

Table 3

Replace the title of Table 3, modified by Amendment 1, with the following new title:

Table 3 – Minimum distances for ignition pulse voltages or equivalent transformed peak voltages U_p

After NOTE 3, added by Amendment 1, replace the four paragraphs with the following new text:

For polarized lampholders, creepage distances and clearances to external metal parts or the outer surface of parts of insulating material may be designed and shall be checked for each pole separately. The distances between the contacts shall be designed according to the high ignition voltage.

Creepage distances shall be not less than the required minimum clearances.

Compliance is checked by measurement.

For clearance distances without influence on safety, for example distances between the contacts, advantage might be taken from improved field conditions, but also in this case the values for the homogenous fields (see IEC 60664-1) remain the absolute minimum.

Compliance is checked by the test of IEC 60664-1:2007, 6.1.2.2.1.1 corresponding to the rated ignition voltage of the holder. Voltage drops are not permissible.

NOTE 4 Rated ignition voltage is referred to as rated impulse voltage in IEC 60664-1 for this test.

16 Endurance

In the last paragraph, replace "oxidation" with "degradation" and add, at the end of the paragraph, the following new note:

NOTE Degradation of cable insulation can include outgassing of corrosive chemicals causing a non-conductive coating on contacts.

17 Resistance to heat and fire

17.1

*Delete the last paragraph of 17.1 starting with "*In case of doubt...*".*

Annex B

Modify the status of Annex B from “normative” to “informative”.

Annex D

Figure D.1

Delete the NOTE in Figure D.1.

Figure D.2

Replace Figure D.2 with the following new Figure D.2.

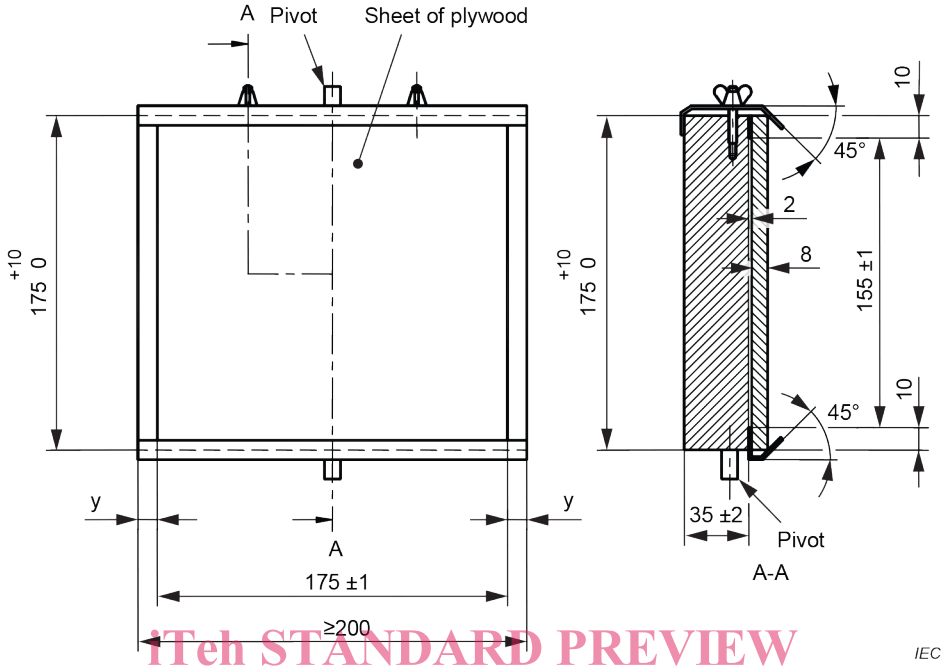

Figure D.2 – Mounting fixture

Add, after Annex E, the following new informative Annex F.

Annex F
(informative)

Guidance on working voltages U_{out}

F.1 Working voltages – relation between lampholders and controlgear

In recent years, an increasing number of controlgear used have been connected to the 250 V mains, however they generate an output voltage higher than the lampholder rated voltage. According to IEC 61347-1 this higher output voltage is required to be marked as U_{out} on the controlgear.

NOTE The typical application of lampholders according to this document is the 250 V mains voltage system, as shown in the example below.

F.2 Example

F.2.1 Clearance

Lampholders having a rated voltage of 250 V for impulse withstand category II need a clearance of 1,5 mm. The reason for this is the expected transient overvoltage of 2,5 kV.

F.2.2 Creepage distance

F.2.2.1 Voltage value

For creepage distances only r.m.s. values of the working voltages are taken into account, provided the frequency of the voltage is less than 30 kHz.

F.2.2.2 Inorganic material that does not track

As for inorganic material, the creepage distance does not need to be longer than the clearance of a ceramic lampholder with a rated voltage of 250 V and this lampholder can be operated at a working voltage of maximum 1,5 kV r.m.s.

NOTE The value of 1,5 kV is based on (2 U + 1 000) V and is derived from the electric strength test.

F.2.2.3 Plastic material with a PTI ≥ 600

A voltage of 250 V needs a clearance of 1,5 mm.

A voltage of 250 V needs a creepage distance of 1,25 mm if the insulation material has a PTI ≥ 600.

In lampholder standards, the required creepage distance can never be less than the clearance, therefore, for a 250 V rated lampholder, the minimum creepage distance is also 1,5 mm.

For a 1,5 mm creepage distance, linear interpolation between the creepage distance for 250 V and 500 V results in a voltage of 300 V.

The 1,5 mm clearance is associated with the maximum r.m.s. working voltage not exceeding 300 V. Interpolation is not allowed for clearances.

Therefore, in the case of a plastic material with a PTI ≥ 600, lampholders with a rated voltage of 250 V can be operated with a working voltage of 300 V r.m.s.

If, however, the actual creepage distance of the lampholder is even longer, then the maximum working voltage that can be applied can be calculated by linear interpolation accordingly. In this case information about the available minimum creepage distance of the lampholder and its actual PTI may be provided in the manufacturer's catalogue or technical documentation. For the calculation, Table 11.1A of IEC 60598-1:2014 and IEC 60598-1:2014/AMD1:2017 and Table 8 of IEC 61347-1:2015, respectively, should be used.

F.2.2.4 Plastic material with a PTI < 600

In the case of a plastic material with a PTI < 600 the working voltage can only be higher than the rated voltage if the creepage distance is longer than the required minimum value.

The calculation of the permissible working voltage can be done by linear interpolation of the values for this material in Table 11.1A of IEC 60598-1:2014 and IEC 60598-1:2014/AMD1:2017 and Table 8 of IEC 61347-1:2015 respectively. In this case information about the available minimum creepage distance of the lampholder and the actual PTI should be given in the manufacturer's catalogue or technical documentation.

F.3 Impulse withstand category

The above calculations should take into account the impulse withstand category the lampholders are designed for.

Lampholders can be connected to a circuit with a higher impulse voltage category than the lampholders are designed for, provided that the clearance according to the rating of the lampholder is sufficient for the intended application according to the relevant table in the lampholder standard for the required impulse withstand category.

If lampholders are connected to a circuit with a lower impulse withstand category than the lampholders are designed for, the calculation of the permissible working voltage can take into account the longer insulation distances that the actual lampholders provide.

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