



SLOVENSKI STANDARD
SIST EN 60598-2-20:1995

01-marec-1995

Luminaires - Part 2: Particular requirements - Section 20: Lighting chains

Luminaires -- Part 2: Particular requirements -- Section 20: Lighting chains

Leuchten -- Teil 2: Besondere Anforderungen -- Hauptabschnitt 20: Lichtketten

Luminaires -- Partie 2: Règles particulières -- Section 20: Guirlandes lumineuses

Ta slovenski standard je istoveten z: EN 60598-2-20:1991/A11:1992

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ICS:

29.140.40 Svetila Luminaires

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EUROPEAN STANDARD

EN 60598-2-20

NORME EUROPEENNE

EUROPÄISCHE NORM

July 1991

UDC 628.974.6::621.3.049-777.001.4.002.2(083.71) 614.825.001.25

Descriptors: Illumination, construction of the electric circuit, testing, definitions, electrical safety requirements

ENGLISH VERSION

LUMINAIRES

PART 2: PARTICULAR REQUIREMENTS

SECTION TWENTY - LIGHTING CHAINS

(IEC 598-2-20:1982 + A1:1987, modified)

Luminaire

Deuxième partie: Règles particulières
Section vingt - Guirlandes lumineuses
(CEI 598-2-20:1982 + A1:1987, modifiés)

Leuchten

Teil 2: Besondere Anforderungen
Hauptabschnitt zwanzig - Lichtketten
(IEC 598-2-20:1982 + A1:1987, modifiziert)**iTeh STANDARD PREVIEW**

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CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

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Ref. No. EN 60598-2-20:1991 E

FOREWORD

The CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 598-2-20:1982 and its amendment 1:1987 could be accepted without textual changes, has shown that some CENELEC common modifications were necessary for the acceptance as European Standard.

The reference document, together with the common modifications prepared by the CENELEC Technical Committee TC 34Z, was submitted to the CENELEC members for formal vote.

The text of the draft was approved by CENELEC as EN 60598-2-20 on 10 December 1990.

The following dates were fixed:

- latest date of publication of
an identical national standard (dop) 1992-06-01
- latest date of withdrawal of
conflicting national standards (dow) 1993-01-01

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For products which have complied with the relevant national standard before 1993-01-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1996-01-01.

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Annexes designated "normative" are part of the body of the standard. In this standard, annexes ZA and ZB are normative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 598-2-20:1982 and its amendment:1987 was approved by CENELEC as a European Standard with agreed common modifications as given below.

Clause No. of R.D	Clause heading	Common modification
20.3	Definitions	<p>Add the following new definition:</p> <p>3) Sealed lighting chain</p> <p>'A lighting chain enclosed in a rigid or flexible insulating translucent pipe having no joints, sealed at the ends.'</p>
20.4	Classification of luminaires	<p><u>Sub-clause 20.4.1.</u> Delete the text of this sub-clause and substitute the following:</p> <p>'According to the type of protection against electric shock, lighting chains shall be classified as Class II or Class III.'</p> <p>NOTE - See Annex ZB for special national conditions.'</p>
20.5	Marking	<p><u>Sub-clause 20.5.1.</u> Amend item b) 2) to commence as follows:</p> <p>'2) for series-connected lamps other than those in sealed chains, replace ...'</p> <p>Add to item b), the following new item 4):</p> <p>'4) for series connected lamps where fused lamps are used to ensure compliance with Sub-clause 20.12.3, do not replace a fused lamp with a non-fused lamp (see item e).'</p> <p>Add the following new item e):</p> <p>'e) Lighting chains fitted with fused lamps to ensure compliance with Sub-clause 20.12.3 shall be accompanied by information indicating the means for identification of fused lamps (see Sub-clause 20.5.3).'</p> <p>NOTE. For the purpose of this sub-clause, a fused lamp is a lamp designed so as to break the circuit in the event of an overload either by means of a separate fuse incorporated within the lamp or by any other means e.g. a special filament. Such fuses or special filaments are not considered integral components [see Sub-clause 0.5.1 of Section Zero of Publication 598-1].</p> <p><u>Sub-clause 20.5.2.</u> Delete the first two lines of this sub-clause and substitute the following:</p> <p>'The following information shall be marked on the lampholder or on the cable or on a durable non-removable sleeve or label fitted to the cable:'</p> <p><u>Insert the following new Sub-clause 20.5.3.</u></p> <p>'20.5.3. Fused lamps used to ensure compliance with Sub-clause 20.12.3 shall have a suitable means of identification, such as a special colour.'</p>

Clause No. of R.D	Clause heading	Common modification
20.6	Construction	<p><u>Sub-clause 20.6.1.</u> Delete the text of this sub-clause and substitute the following:</p> <p>'Edison screw lampholders E14 and E27 shall meet the requirements of EN 60 238 (1989): Edison Screw Lampholders.</p> <p>Edison screw lampholders E5 and E10, and similar small lampholders of the push-in type shall meet the appropriate requirements of EN 60 238 (1989), as modified by Appendix B.</p> <p>Edison screw lampholders larger than E 10 with non-metallic screw threads shall meet the requirements of Sub-clause 12.1 (Construction) of EN 60 238 (1989).</p> <p>NOTE - E10 and smaller lampholders may have screw threads of insulating material.'</p> <p>In lighting chains fitted with parallel connected lamps, E27 and B22 lampholders with insulation piercing contacts shall meet the requirements of this section. In addition, E27 lampholders with insulation piercing contacts shall meet the requirements of Sub-clause 12.1 (Construction) of EN 60 238 (1989).</p> <p><u>Sub-clause 20.6.4.</u> Delete the text of this sub-clause and substitute the following:</p> <p>'Only Sub-clauses 4.11.4 and 4.11.5 of Clause 4.11 of Section Four of Publication 598-1, referring to electrical connections and current carrying parts, apply.'</p> <p><u>Sub-clause 20.6.6.</u> Delete the text of this sub-clause and substitute the following:</p> <p>'Compliance with the mechanical strength requirements of clause 4.13 of Section Four of Publication 598-1 for E14 and E27 lampholders incorporated in lighting chains shall be checked by the tests given in Clause 15 of EN 60 238 (1989). E5 and E10 and similar small lampholders of push-in type shall be checked by the tests given in Clause 15 of EN 60 238 (1989) as modified by Appendix B. The tests are made on three samples of the lampholder without lamps inserted. After the test, the relevant compliance requirements of clause 4.13 of Section Four of Publication 598-1 shall be met.'</p>

Clause No. of R.D	Clause heading	Common modification
		<p data-bbox="300 526 354 1451">Sub-clause 20.6.7. Delete the text of this sub-clause and substitute the following:</p> <p data-bbox="386 452 450 1451">'E5 and E10 lampholders and similar small lampholders of push-in type shall be used only if the rated voltage of each lamp does not exceed:</p> <ul data-bbox="475 683 561 1415" style="list-style-type: none"> - for E5 and similar small lampholders25 V - for E10 and similar small lampholders60 V <p data-bbox="587 586 625 1451">and the maximum rated wattage of the lighting chain does not exceed:</p> <ul data-bbox="651 481 737 1415" style="list-style-type: none"> - for lighting chains using E5 or similar small lampholders50 W - for lighting chains using E10 or similar small lampholders100 W <p data-bbox="753 913 785 1451">Compliance shall be checked by inspection.'</p> <p data-bbox="810 577 865 1451">Sub-clause 20.6.10. Delete the text of this sub-clause and substitute 'No requirement'.</p> <p data-bbox="890 922 922 1451">Insert new Sub-clauses 20.6.11 to 20.6.14:</p> <p data-bbox="944 542 1002 1451">'20.6.11. Lampholders for replaceable push-in lamps shall have a body of insulating material</p> <p data-bbox="1024 922 1056 1451">Compliance shall be checked by inspection.</p> <p data-bbox="1088 452 1145 1451">20.6.12 The cap of the replaceable push-in lamp shall not rotate in relation to the lampholder shell.</p> <p data-bbox="1168 564 1200 1451">Compliance shall be checked by applying a torque of 0.025 Nm for 1 min.</p>

Clause No. of R.D	Clause heading	Common modification
		<p>20.6.13. Replaceable push-in lamps shall be easily inserted and removed but the lamp shall remain in the seated position when it is subjected to a pull force of 3 N.</p> <p>Compliance shall be checked by manual test and by measuring the force.</p> <p>20.6.14. Sealed lighting chains shall have adequate mechanical strength.</p> <p>For rigid sealed chains, compliance shall be checked by the following tests carried out in turn.</p> <p>a) Subject the pipe 45 times to a pull of 60 N, the stress being applied to the ends of the pipe without jerks for 1 min.</p> <p>b) Subject the pipe to a torque of 0.15 Nm, the stress being applied to the ends of the pipe in the most unfavourable direction (alternatively in cases of doubt) without jerks for 1 min.</p> <p>For flexible sealed chains, compliance shall be checked by the tests of a) and b) above followed by the additional test below.</p> <p>Wind the pipe on a cylinder of 250 mm diameter with a pull of 60 N for the number of operations and at the ambient temperature given below:</p> <ul style="list-style-type: none"> - for ordinary chains 10 times at 25 ± 5 °C (IP 20) - for chains having an 10 times at 25 ± 5 °C IP number over 20 followed by 10 times at -15 ± 5 °C <p>After the tests specified above, the pipe shall show no damage affecting safety of the chain and shall comply with the electric strength test of Sub-clause 20.14 applied between live parts and the body.</p> <p>NOTE 1 - Failure of lamps during the test is permitted.</p> <p>NOTE 2 - An example of a test device suitable for winding a flexible pipe is given in Figure 4.</p>

Clause No. of R.D	Clause heading	Common modification
20.7	Creepage distances and clearances	<p>Delete the text of this sub-clause and substitute the following:</p> <p>'The provisions of Section Eleven of Publication 598-1 apply except that:</p> <ul style="list-style-type: none"> - for Edison screw lampholders E10, E14 and E27, Clause 17 of EN 60 238 (1989) applies; - for Edison screw lampholders E5 and similar small lampholders of push-in type, Clause 17 of EN 60 238 (1989), as modified by Appendix B, applies.'
20.10	External and internal wiring	<p>Sub-clause 20.10.1. Delete the text of this sub-clause and substitute the following:</p> <p>'Sub-clause 5.2.2 of Section Five of Publication 598-1 does not apply. Internal and external cables of lighting chains other than sealed chains and external cables of sealed chains shall not be lighter than the following:</p> <ul style="list-style-type: none"> - for ordinary lighting chains using series-connected lampholders H05V - F or H03VH7 - H - for Class III ordinary lighting chains using parallel-connected lampholders H03VH - H or H03VVH2 - F or H03VV - F - for Class II ordinary lighting chains using parallel-connected lampholders H03VV - F or H03VVH2 - F - for other lighting chains using series-connected lampholders H05RN - F (HD 22.8) - for other lighting chains using parallel-connected lampholders H05RNH2 - F or H05RN - F (HD 22.4) - for other lighting chains where the length of cable between the supply plug and the nearest lampholder exceeds 3 m - that part of the cable

Clause No. of R.D	Clause heading	Common modification
		<p>The nominal cross-sectional area of the conductors for the cables listed above shall be not less than one of the following values:</p> <ul style="list-style-type: none"> a) 0.5 mm² for ordinary lighting chains with E5 or E10 lampholders or similar small lampholders of push-in type; b) 0.75 mm² for other lighting chains with E5 or E10 lampholders or similar small lampholders of push-in type, and for lighting chains with E14, E27, B15 or B22 lampholders and fitted with series-connected lamps; c) 1.5 mm² for lighting chains with E14, E27, B15 or B22 lampholders and fitted with parallel connected lamps. <p>The internal conductors of sealed chains may have a cross-sectional area of less than 0.4 mm² provided that the current carrying capacity and mechanical properties are adequate. Conductors without insulation may be used provided adequate precautions have been taken to ensure maintenance of the minimum clearance distances and compliance with the requirements of Sub-clause 5.3.1 of EN 60 598: Part 1.</p> <p>NOTE - Specific types of cables for lighting chains are under consideration.</p> <p><u>Sub-clause 20.10.3.</u> Delete the second sentence to Note 1.</p>

Clause No. of R.D	Clause heading	Common modification
20.11	Protection against electric shock	<p>Sub-clause 20.11.1. Delete the first and third paragraphs.</p> <p>Delete the text of the fourth paragraph and substitute the following:</p> <p>'If the plug of a lighting chain incorporates a means for disconnecting one end of the chain to facilitate installation, the connector fitted at the end of the cable shall have an entry such that the diameter of the opening and the distance from the front to live parts are equal to the corresponding dimensions specified on Standard Sheet C7 of EN 60 320. The two parts of the connector shall not separate when subjected to a pull force of 10 N'.</p> <p>In the fifth and sixth paragraphs delete 'shown in Figure 1 of Publication 598-1' and substitute 'specified in HD 365.'</p>
20.12	Endurance tests and thermal tests	<p>Delete the first sentence and substitute the following:</p> <p>'The provisions of Section Twelve of Publication 598-1 apply together with the requirements of Sub-Clauses 20.12.1 to 20.12.3.'</p> <p>At the end of this clause, add new Sub-clauses 20.12.1 to 20.12.3:</p> <p>'20.12.1 The requirements of item d) of Sub-clause 12.3.1 and item d) of Sub-clause 12.4.1 of Section Twelve of Publication 598-1 are replaced by the following:</p> <p>The tests are carried out at a voltage such that the wattage is equal to 1.05 times the wattage measured when the lighting chain is supplied at the rated voltage.</p> <p>20.12.2 The requirements of item e) of Sub-clause 12.3.1 and item g) of Sub-clause 12.4.1 of Section Twelve of Publication 598-1 apply except that lamps for sealed chains are not replaced.</p>

Clause No. of R.D	Clause heading	Common modification
20.15	Resistance to heat, fire and tracking	<p>20.12.3. The operation of devices for bridging the lamp filament, where fitted in accordance with Sub-clause 20.6.8, shall not cause the lampholders or cable of a lighting chain to attain a temperature which would impair safety.</p> <p>Compliance shall be checked by causing the bridging device to operate successively on each lamp; the lamp not being replaced. The temperatures of the cable shall be allowed to stabilize before each bridging device is made to operate. The temperature of lampholders and cables shall not exceed the appropriate values given in Tables X and XI. If a protective device (e.g. a fuse in a lamp) operates during the test, the highest temperatures reached shall be taken as the final temperatures.</p>
Figure 1	Tumbling barrel	<p>Delete the text of this clause and substitute the following:</p> <p>'The provisions of Section Thirteen of Publication 598-1 apply except that:</p> <ul style="list-style-type: none"> - for flexible pipes of sealed chains, the test of Sub-clause 13.2.1 is replaced by the test of Clause 8 of HD 385'. - for lampholders, the tests of Clause 13 are replaced by the tests of: <ul style="list-style-type: none"> - for E14 and E27 lampholders.....Clause 20 of EN 60 238 - for E5 and E10 and similar.....Clause 20 of EN 60 238 lampholders of the push-in type modified by Appendix B
Figure 2	An example of a suitable connection for lighting chains	Delete Figure 1 and substitute 'Not used'.
		Delete figure.2 and substitute 'Not used'.