



SLOVENSKI STANDARD

oSIST prEN 50708-2-5:2020

01-oktober-2020

Močnostni transformatorji - Dodatne evropske zahteve - 2-5. del: Srednji močnostni transformatorj - Enofazne naprave

Power transformers - Additional European requirements - Part 2-5: Medium power transformer - Single phase

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Transformateurs de puissance - Exigences européennes supplémentaires - Partie 2-5 : Transformateurs de moyenne puissance monophasés

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Ta slovenski standard je istoveten z: <http://standards.iteh.ai/catalog/standards/sist/50708-2-5/2020/61b4-4fe9-b871-5897b868758d/osist-pren-50708-2-5-2020> prEN 50708-2-5

ICS:

29.180 Transformatorji. Dušilke Transformers. Reactors

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 50708-2-5

August 2020

ICS

English Version

Power transformers - Additional European requirements - Part 2-5: Medium power transformer - Single phase

Transformateurs de puissance - Exigences européennes supplémentaires - Partie 2-5 : Transformateurs de moyenne puissance monophasés

To be completed

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2020-10-30.

It has been drawn up by CLC/TC 14.

If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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prEN 50708-2-5:2020 (E)

1	Contents	
2	European foreword	3
3	Introduction	4
4	1 Scope	5
5	2 Normative references	5
6	3 Terms and definitions	5
7	4 Service conditions	5
8	5 Rating and general requirements	5
9	5.1 General	5
10	5.2 PEI values for single-phase liquid immersed transformers	5
11	6 Rating plate	6
12	7 Tolerances	6
13	8 Tests	6
14	9 Accessories and fittings	6
15	10 Capitalization of losses	6
16	11 Transformers overhaul	7
17	Bibliography	8

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18 **European foreword**

19 This document (prEN 50708-2-5:2020) has been prepared by CLC/TC 14 “Power transformers”.

20 This document is currently submitted to the Enquiry.

21 The following dates are proposed:

- latest date by which the existence of this document has to be announced at national level (doa) dor + 6 months
- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) dor + 12 months
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) dor + 36 months (to be confirmed or modified when voting)

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prEN 50708-2-5:2020 (E)**22 Introduction**

23 This document defines the rules for the assessment of energy performance to ensure the product
24 conformity to the Commission Regulation (EU) No 548/2014 of 21 May 2014 and its amendment No
25 2019/1783 of 1 October 2019.

26 Regulation leads to have a minimum level of energy performances of power transformers.

27 NOTE In this document, the term Regulation refers to the Commission Regulation (EU) No 548/2014 of 21
28 May 2014 and its amendment No 2019/1783 of 1 October 2019.

29 For the purpose of this document, the requirements of the general EN 50708-1-1:2020 apply.

30 This document contains particular requirements for specific transformers or transformer applications,
31 which are based on the requirements of the general EN 50708-1-1:2020.

32 This document should be considered in conjunction with the requirements of the general parts.

33 The particular requirements of the different sub parts of EN 50708 supplement, modify or replace
34 certain requirements of the general parts of EN 50708-1 and/or EN 50708-1-X being valid at the time
35 of publication of this document. The absence of references to the exclusion of a part or a clause of a
36 general part means that the corresponding clauses of the general part are applicable (undated
37 reference).

38 Requirements of other -X parts with X greater than 1 being eventually relevant for cases covered by
39 this document also apply. This document could therefore also supplement, modify or replace certain
40 of these requirements valid at the time of publication of this document.

41 The main clause numbering of each part follows the pattern and corresponding references of
42 EN 50708-1-1:2020. The numbers following the particular number of this document are those of the
43 corresponding parts, or clauses of the other parts of the EN 50708 series, valid at the time of
44 publication of this document. (standards.iteh.ai)

45 In the case where new or amended general parts with modified numbering were published after the
46 sub part was issued, the clause numbers referring to a general part in sub parts might no longer align
47 with the latest edition of the general part. Dated references should be observed.

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48 1 Scope

49 The scope of this document is to define the energy performance of liquid immersed single-phase
50 Medium Power Transformers in compliance with EN 50708-1-1:2020.

51 2 Normative references

52 The following documents are referred to in the text in such a way that some or all of their content
53 constitutes requirements of this document. For dated references, only the edition cited applies. For
54 undated references, the latest edition of the referenced document (including any amendments)
55 applies.

56 EN 50708-1-1:2020, *Power transformers - Additional European requirements: Part 1-1: Common part*
57 *- General requirements*

58 EN 50708-2-1, *Power transformers - Additional European requirements: Part 2-1 Medium power*
59 *transformer - General requirements*

60 EN 50708-3-1, *Power transformers - Additional European requirements: Part 3-1 Large power*
61 *transformer - General requirements*

62 EN 60076-1, *Power transformers - Part 1: General (IEC 60076-1)*

63 3 Terms and definitions

64 For the purposes of this document, the terms and definitions given in EN 50708 series apply.

65 ISO and IEC maintain terminological databases for use in standardization at the following addresses:

66 — ISO Online browsing platform: available at <https://www.iso.org/obp>

67 — IEC Electropedia: available at <http://www.electropedia.org/>

68 **4 Service conditions** <https://standards.iteh.ai/catalog/standards/sist/557f2dba-61b4-4fe9-b871-5897b868758d/osist-pren-50708-2-5-2020>

69 EN 60076-1 applies.

70 5 Rating and general requirements

71 5.1 General

72 EN 50708-2-1 apply unless otherwise stated in this document.

73 The following table give the minimum Peak Efficiency Index of losses for single phase transformers.

74 The Peak Efficiency Index classes remain the same for all highest voltage for equipment values (U_m)
75 regardless of the additional loss corrections specified in EN 50708-2-1.

76 NOTE Single phase transformers represent a small part of network transformers in European countries with
77 a large diversity of specifications and applications. The possibility of standard components for this kind of
78 transformer is therefore difficult to reach because no common rules to define standard losses existed until now.
79 That is the reason why PEI has been chosen to procure a guidance for the market.

80 5.2 PEI values for single-phase liquid immersed transformers

81 For liquid immersed single-phase transformers with a de-energized tapping range $\leq 7,5$ % Table 1
82 applies.

Table 1 — PEI values for liquid immersed single-phase transformers

Sr (kVA)	Minimum Peak efficiency index %	
	TIER 1	TIER 2
16	98,380	98,480
25	98,500	98,650
33	98,610	98,800
50	98,730	98,891
100	98,900	99,093
160	99,012	99,191
250	99,112	99,283
315	99,154	99,320
400	99,209	99,369
500	99,247	99,398
630	99,295	99,437
800	99,343	99,473
1 000	99,360	99,484
1 250	99,418	99,487
1 600	99,424	99,494
2 000	99,426	99,502
2 500	99,441	99,514
3 150	99,444	99,518

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84 **6 Rating plate**

85 The additional requirements for rating plate are given in EN 50708-1-1:2020.

86 **7 Tolerances**

87 The additional requirements for tolerances are given in EN 50708-1-1:2020.

88 **8 Tests**

89 During factory acceptance tests, the PEI value calculated from the losses measurement shall be equal
90 to or higher than the values given.

91 The test report of the transformers shall report the PEI value and the corresponding kPEI.

92 **9 Accessories and fittings**

93 List of accessories and fittings are under development in relevant parts.

94 **10 Capitalization of losses**

95 The additional requirements for capitalization of losses are given in EN 50708-1-1:2020.

96 **11 Transformers overhaul**

97 The additional requirements for transformers overhaul are given in EN 50708-1-1:2020.

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98

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100 *Accessories and fittings*
- 101 IEC/TR 60616:1978, *Terminals and tapping markings for power transformers*
- 102

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