

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Ferrite cores – Dimensions –
Part 5: EP-cores and associated parts for use in inductors and transformers**

**Noyaux ferrites – Dimensions –
Partie 5: Noyaux EP et pièces associées utilisés dans les inductances et transformateurs**

IEC 62317-5:2015

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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FERRITE CORES –
DIMENSIONS –****Part 5: EP-cores and associated parts
for use in inductors and transformers**

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International Standard IEC 62317-5 has been prepared IEC technical committee 51: Magnetic components and ferrite materials.

This first edition cancels and replaces the first edition of IEC 61596 published in 1995. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 61596:

- a) addition of EP5-core in Table 1,
- b) addition of effective parameter and A_{\min} values, main dimensions of coil formers, and pin locations and base outlines for EP5-core.

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

CDV	Report on voting
51/1063/CDV	51/1103/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62317 series, published under the general title *Ferrite cores – Dimensions*, can be found on the IEC website.

The committee has decided that the contents of this 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

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- withdrawn,
- replaced by a revised edition, or
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WITHDRAWN

INTRODUCTION

IEC 62317 consists of the following parts, under the general title *Ferrite cores – Dimensions*:

Part 1: General specification

Part 2: Pot-cores for use in telecommunications, power supply, and filter applications

Part 3: Half pot-cores¹

Part 4: RM-cores and associated parts

Part 5: EP-cores and associated parts for use in inductors and transformers

Part 6: ETD-cores for use in power supplies²

Part 7: EER-cores

Part 8: E-cores

Part 9: Planar cores

Part 10: PM-cores³

Part 11: EC-cores for use in power supply applications⁴

Part 12: Ring cores⁵

Part 13: PQ-cores for use in power supply applications

Part 14: EFD-cores for use in power supply applications⁶

¹ Under consideration.

² To be published.

³ Under consideration.

⁴ Under consideration.

⁵ Under consideration.

⁶ Under consideration.

FERRITE CORES – DIMENSIONS –

Part 5: EP-cores and associated parts for use in inductors and transformers

1 Scope

This part of IEC 62317 specifies the dimensions that are of importance for mechanical interchangeability for a preferred range of EP-cores, the essential dimensions of coil formers to be used with these cores and the locations of their terminal pins on a 2,50 mm printed wiring grid in relation to the base outlines of the cores, and the effective parameter values to be used in calculations involving them.

The general considerations upon which the design of this range of cores is based are as given in Annex A.

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.

Void.

3 Primary standards

3.1 General

Compliance with the following requirements ensures mechanical interchangeability of complete assemblies and wound coil formers.

3.2 Dimensions of EP-cores

3.2.1 Principal dimensions

The principal dimensions of EP-cores shall be as given in Figure 1 and Table 1.

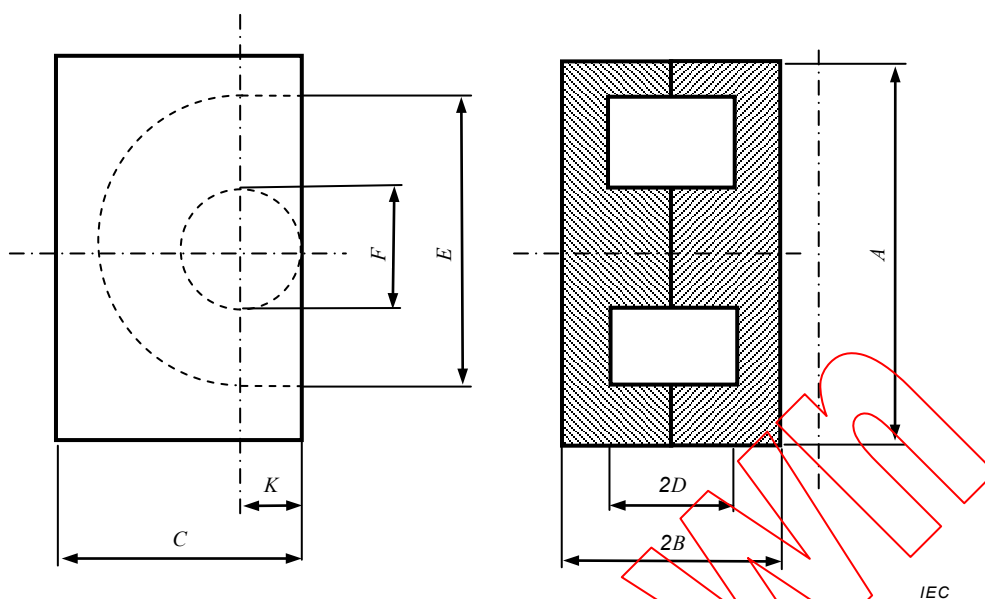


Figure 1 – Principal dimensions of EP-cores

Table 1 – Principal dimensions of EP-cores

Size	A mm		C mm		K mm	E mm		F mm		2B mm		2D mm	
	Min.	Max.	Min.	Max.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
EP5	5,85	6,15	3,70	3,90	1,00	4,25	4,55	1,60	1,80	5,50	5,70	3,80	4,20
EP7	9,00	9,40	6,20	6,50	1,80	7,20	7,60	3,20	3,40	7,30	7,50	5,00	5,40
EP10	11,2	11,8	7,45	7,85	1,95	9,20	9,60	3,15	3,45	10,0	10,4	7,20	7,60
EP13	12,2	12,8	8,60	9,00	2,50	9,70	10,3	4,20	4,50	12,7	13,0	9,00	9,40
EP17	17,6	18,4	10,75	11,25	3,45	11,6	12,4	5,50	5,85	16,6	17,0	11,0	11,6
EP20	23,5	24,5	14,6	15,3	4,70	16,1	16,9	8,50	9,00	21,2	21,6	14,0	14,6
EP30	30,5	31,5	22,6	23,6	7,85	23,6	24,4	14,5	15,0	29,7	30,0	23,0	23,8

3.2.2 Effective parameter and A_{\min} values

The effective parameter values of a pair of cores having the dimensions given in 3.2.1 are as shown in Table 2.

Table 2 – Effective parameter and A_{\min} values

Size	C_1 mm ⁻¹	C_2 mm ⁻³	l_e mm	A_e mm ²	V_e mm ³	A_{\min}^a mm ²
EP5	3,206 3	1 070,7 × 10 ⁻³	9,60	2,99	28,8	2,27
EP7	1,450 6	135, 85 × 10 ⁻³	15,5	10,7	65	8,55
EP10	1,696 8	150, 50 × 10 ⁻³	19,1	11,3	216	8,55
EP13	1,234 1	63, 326 × 10 ⁻³	24,1	19,5	469	14,9
EP17	0,840 01	24, 868 × 10 ⁻³	28,4	33,8	958	25,3
EP20	0,507 91	6, 460 3 × 10 ⁻³	39,9	78,6	3 140	60,1
EP30	0,348 63	1, 950 0 × 10 ⁻³	62,3	179	11 100	149

NOTE The above values have been calculated using the method given in 3.8 of IEC 60205:2006.

^a A_{\min} is selected as the smallest value among A_1, A_2, A_3, A_4 and A_5 using the mean value of each dimension.

3.3 Main dimensions of coil formers

The main dimensions of coil formers suitable for use with a pair of EP-cores shall be as given in Figure 2 and Table 3.

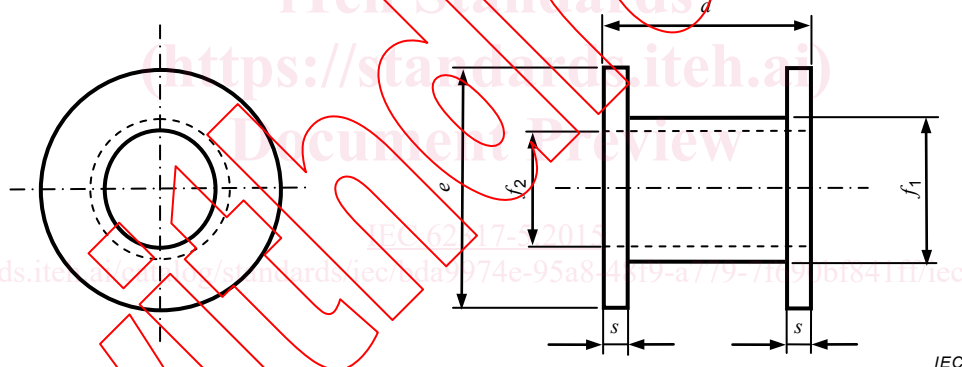


Figure 2 – Main dimensions of coil formers for EP-cores

Table 3 – Main dimensions of coil formers for EP-cores

Size	e mm		f_1 mm		f_2 mm		d mm		s mm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
EP5	4,00	4,20	2,65	2,85	1,85	2,05	3,50	3,70	0,30	0,50
EP7	6,70	7,00	4,30	4,70	3,60	3,80	4,45	4,75	0,60	0,80
EP10	8,60	9,00	4,65	4,95	3,60	3,80	6,70	7,00	0,50	0,70
EP13	9,30	9,60	5,55	5,85	4,60	4,80	8,60	8,90	0,45	0,65
EP17	11,1	11,4	7,05	7,35	6,00	6,30	10,6	10,9	0,55	0,75
EP20	15,6	15,9	10,0	10,3	9,10	9,40	13,5	13,9	0,55	0,75
EP30	23,1	23,5	16,7	17,0	15,1	15,4	22,5	22,9	0,80	1,00