

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Ferrite cores – Dimensions –
Part 11: EC-cores for use in power supply applications**

**Noyaux ferrites – Dimensions –
Partie 11: Noyaux EC utilisés dans des applications d'alimentation électrique**

IEC 62317-11:2015

<https://standards.iteh.ai/standards/iec/3399201f-50a8-49db-9b33-096cf89ea82a/iec-62317-11-2015>



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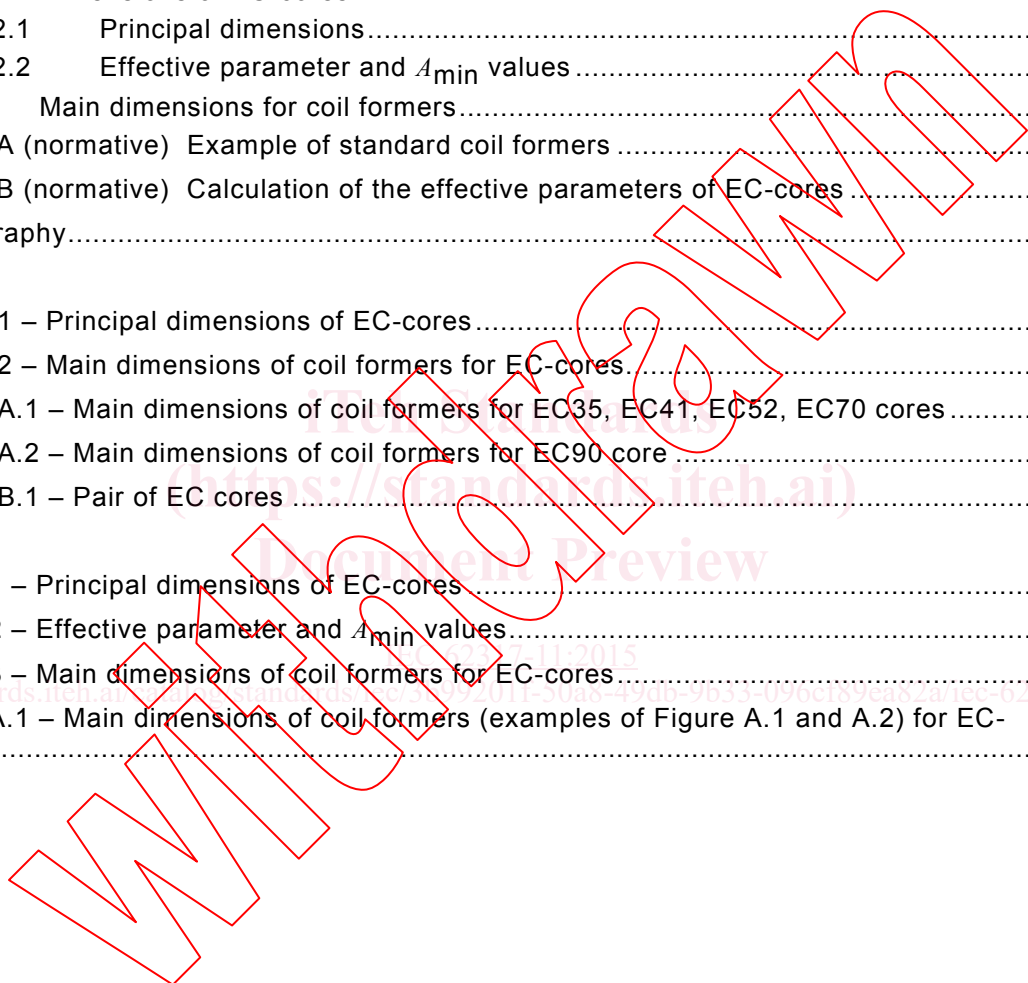
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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Primary standards	6
3.1 General.....	6
3.2 Dimensions of EC-cores.....	6
3.2.1 Principal dimensions.....	6
3.2.2 Effective parameter and A_{min} values.....	6
3.3 Main dimensions for coil formers.....	9
Annex A (normative) Example of standard coil formers	10
Annex B (normative) Calculation of the effective parameters of EC-cores.....	13
Bibliography.....	15
Figure 1 – Principal dimensions of EC-cores.....	7
Figure 2 – Main dimensions of coil formers for EC-cores.....	9
Figure A.1 – Main dimensions of coil formers for EC35, EC41, EC52, EC70 cores.....	10
Figure A.2 – Main dimensions of coil formers for EC90 core.....	11
Figure B.1 – Pair of EC cores	13
Table 1 – Principal dimensions of EC-cores	8
Table 2 – Effective parameter and A_{min} values.....	8
Table 3 – Main dimensions of coil formers for EC-cores.....	9
Table A.1 – Main dimensions of coil formers (examples of Figure A.1 and A.2) for EC-cores	12



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FERRITE CORES – DIMENSIONS –

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

FOREWORD

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International Standard IEC 62317-11 has been prepared by IEC technical committee 51: Magnetic components and ferrite materials.

This first edition cancels and replaces the first edition of IEC 60647 published in 1979. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the first edition of IEC 60647:

- a) addition of EC90 and EC120 cores in Table 1,
- b) addition of effective parameter and A_{\min} values and main dimensions of coil formers for EC90 and EC120 cores.

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

CDV	Report on voting
51/1077/CDV	51/1083/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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- 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: Dimensions of half pot-cores made of ferrite for inductive proximity switches¹
- 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 supplies
- Part 7: EER-cores
- Part 8: E-cores
- Part 9: Planar cores
- Part 10: PM-cores made of magnetic oxides and associated parts – Dimensions²
- Part 11: EC-cores for use in power supply applications
- Part 12: Dimensions of uncoated ring cores of magnetic oxides³

¹ Under consideration, currently available as IEC 62323.

² Under consideration, currently available as IEC 61247.

³ Under consideration, currently available as IEC 61604.

FERRITE CORES – DIMENSIONS –

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

1 Scope

This part of IEC 62317 specifies the dimensions that are of importance for mechanical interchangeability for a preferred range of EC-cores, the essential dimensions of coil formers to be used with them, and the effective parameter values to be used in calculations involving them.

The selection of core sizes for this standard is based on the philosophy of including those sizes which are industrial standards, either by inclusion in national standards, or by broad-based use in industry. See 62317-1 for more detail concerning the philosophy of selecting core sizes to be included.

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 EC-cores

3.2.1 Principal dimensions

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

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.

A_{\min} is specified in IEC 60205:2006, 2.2.

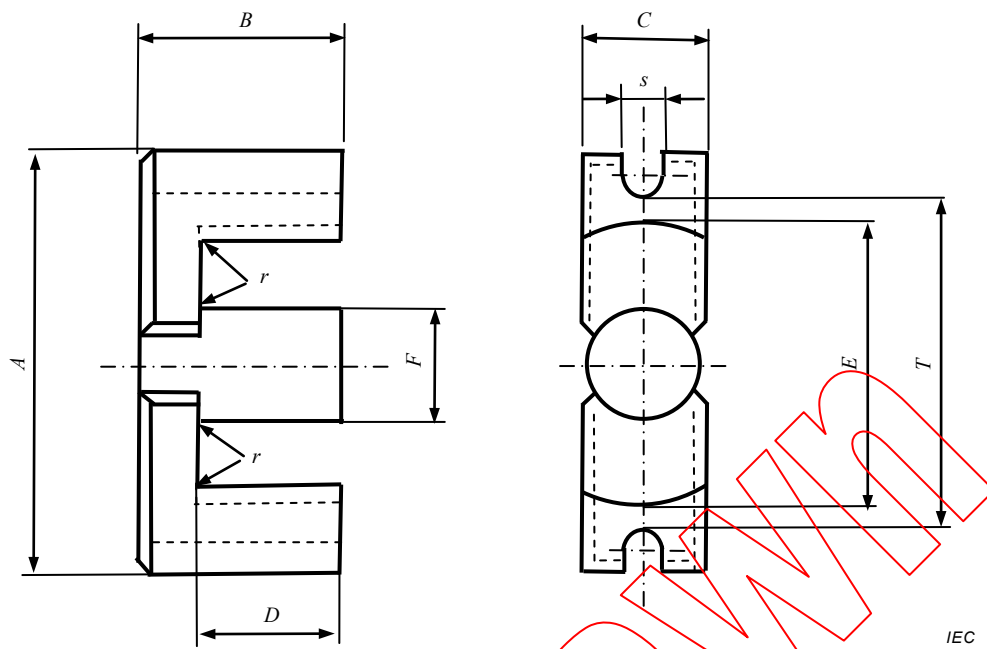


Figure 1 – Principal dimensions of EC-cores

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WITHDRAWN

Table 1 – Principal dimensions of EC-cores

Size	A mm		B mm		C mm		D mm		E mm		F mm		r mm	s mm		T mm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Min.	Max.	Min.	Max.
EC 35	33,7	35,3	17,15	17,45	9,2	9,8	11,9	12,6	22,2	23,3	9,2	9,8	0,5	2,5	3,0	27,7	29,3
EC 41	39,6	41,6	19,35	19,65	11,3	11,9	13,5	14,3	26,3	27,8	11,3	11,9	0,7	3,0	3,3	32,6	34,6
EC 52	50,9	53,5	24,05	24,35	13,05	13,75	15,5	16,3	32,1	33,9	13,05	13,75	0,8	3,5	4,0	42,7	45,3
EC 70	68,3	71,7	34,35	34,65	16,0	16,8	22,3	23,2	43,3	45,7	16,0	16,8	1,0	4,5	5,0	57,9	61,3
EC 90	88,2	91,8	44,35	45,65	29,0	31,0	35,0	36,0	68,5	71,5	29,0	31,0	1,0	5,2	5,8	77,2	80,8
EC 120	118,0	122,0	49,85	51,15	29,0	31,0	35,0	36,0	93,3	96,7	29,0	31,0	1,5	5,2	5,8	111,0	107,0

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} mm ²
EC 35	0,901 41	$10,618 \times 10^{-3}$	76,5	84,9	6 500	70,9
EC 41	0,718 97	$5,864 0 \times 10^{-3}$	88,2	123	10 800	106
EC 52	0,571 92	$3,167 6 \times 10^{-3}$	103	181	18 600	141
EC 70	0,508 59	$1,818 6 \times 10^{-3}$	142	280	39 800	211
EC 90	0,342 50	$0,547 70 \times 10^{-3}$	215	629	135 000	570
EC 120	0,324 96	$0,421 00 \times 10^{-3}$	251	772	194 000	707

NOTE The manufacturers can indicate in their catalogues more precise values than those given in Table 2.

3.3 Main dimensions for coil formers

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

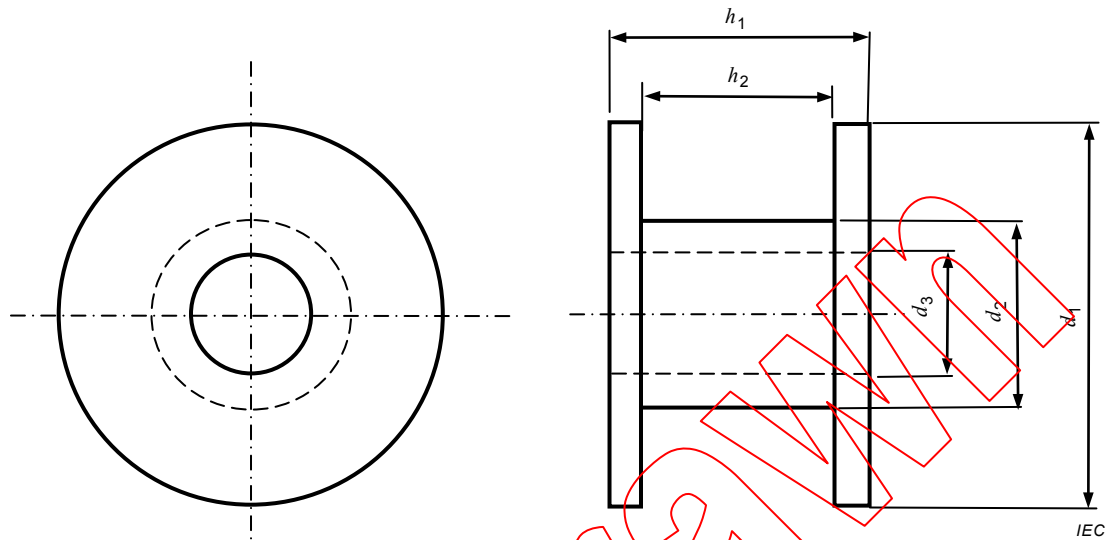


Figure 2 – Main dimensions of coil formers for EC-cores

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

Size	d_1	d_2	d_3	h_1	h_2
	mm	mm	mm	mm	mm
	Max.	Max.	Min.	Max.	Min.
EC 35	21,8	12,3	9,9	23,6	21,4
EC 41	25,8	14,4	12,0	26,8	24,4
EC 52	31,6	16,3	13,85	30,7	28,2
EC 70	42,7	19,6	17,0	44,3	41,3
EC 90	67,7	35,6	31,4	69,6	64,8
EC 120	92,4	35,6	31,4	69,6	64,8