BRITISH STANDARD

BS EN
60423:2007

Conduit systems for cable management — Outside diameters of conduits for electrical installations and threads for conduits and fittings

The European Standard EN 60423:2007 has the status of a British Standard

ICS 29.120.10

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN 60423:2007. It is identical to IEC 60423:2007. It supersedes BS EN 60423:1995 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/213, Cable management.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2007

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60423

October 2007

ICS 29.120.10

Supersedes EN 60423:1994

English version

Conduit systems for cable management - Outside diameters of conduits for electrical installations and threads for conduits and fittings

(IEC 60423:2007)

Systèmes de conduits
pour la gestion du câblage -
Diamètres extérieurs des conduits
pour installations électriques
et filetages pour conduits et accessoires
(CEI 60423:2007)

Elektroinstallationsrohrsysteme
für elektrische Energie
und für Informationen -
Außendurchmesser
von Elektroinstallationsrohren
und Gewinde für Elektroinstallationsrohre
und deren Zubehör
(IEC 60423:2007)

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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Foreword

The text of document 23A/541/FDIS, future edition 3 of IEC 60423, prepared by SC 23A, Cable management systems, of IEC TC 23, Electrical accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60423 on 2007-10-01.

This European Standard supersedes EN 60423:1994.

The following main changes have been made to EN 60423:1994:

– revised figures and tables plus editorial and normative reference updates;
– conduit range increased to 110 mm outside diameter.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2008-07-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2010-10-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 60423:2007 was approved by CENELEC as a European Standard without any modification.

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CONTENTS

INTRODUCTION

The mechanical performance of the threadable parts of the conduit system will be a function of material and wall thickness, which is specified in the appropriate product standard (IEC 61386 series).

CONDUIT SYSTEMS FOR CABLE MANAGEMENT – OUTSIDE DIAMETERS OF CONDUITS FOR ELECTRICAL INSTALLATIONS AND THREADS FOR CONDUITS AND FITTINGS

1 Scope

This International Standard specifies outside diameters for conduits used in electrical installations or in communication systems and the dimensional requirements for threads. It also specifies the dimensional requirements for threads used in associated fittings.

It is not applicable to extra heavy-duty electrical rigid steel conduits specified in IEC 60981.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 68-1:1998, *ISO general purpose screw threads – Basic profile – Part 1: Metric screw threads*

ISO 965-1:1998, *ISO general-purpose metric threads – Tolerances – Part 1: Principles and basic data*

ISO 1502:1996, *ISO general-purpose metric screw threads – Gauges and gauging*

3 Outside diameters and threads

The outside diameters, tolerances and details of threadable conduit and external and internal metric threads are given in Table 1. Details of the thread form are given in Figure 1, which is based on ISO 68-1 and ISO 965-1. Outside diameters and tolerances of non-threadable conduit are given in Table 2.

4 Gauges

External threads are checked by means of threaded GO ring gauges and plain NO-GO ring gauges specified in ISO 1502.

Internal threads are checked by means of threaded GO plug gauges and plain NO-GO plug gauges specified in ISO 1502.

Outside diameters of threadable conduits are checked by means of GO ring gauges specified in Figure 2 and NO-GO gap gauges specified in Figure 3a for threadable rigid metal conduits, or NO-GO ring gauges specified in Figure 3b for threadable conduits other than rigid metal.

Outside diameters of non-threadable conduits may be checked by any suitable measuring

5 Samples of conduit

The samples shall be (500 ± 5) mm in length.

Table 1 – Outside diameters for threadable conduits and thread details for conduits and associated fittings

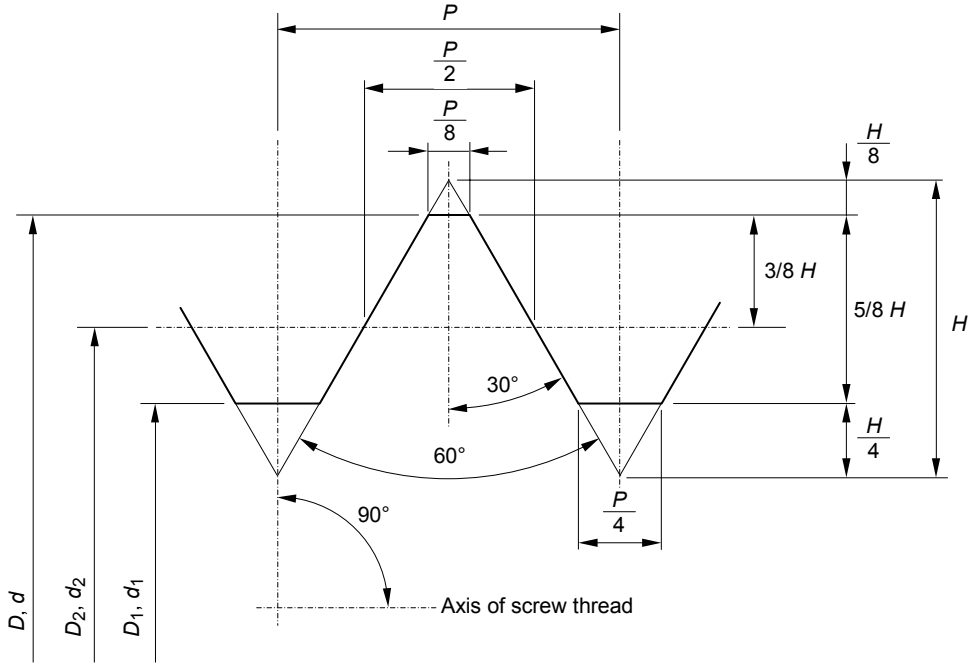
Dimensions in millime

Outside diameters and thread for conduits				External threads						Internal threads				
Outside diameters	Metric threads	Class of fit	Pitch	Major diameter (d)		Effective diameter (d_2)		Minor diameter (d_1)		Major diameter (D)	Effective diameter (D_2)		Minor diameter (D_1)	
				max.	min.	max.	min.	max.	min.	min.	max.	min.	max.	min.
6 0/–0,1	M6 × 0,75	6 g/6H	0,75	5,978	5,838	5,491	5,391	5,058	4,929	6,000	5,645	5,513	5,378	5,188
8 0/–0,2	M8 × 1	8 g/7H	1,00	7,974	7,694	7,324	7,144	6,747	6,528	8,000	7,540	7,350	7,217	6,917
10 0/–0,2	M10 × 1	8 g/7H	1,00	9,974	9,694	9,324	9,144	8,747	8,528	10,000	9,540	9,350	9,217	8,917
12 0/–0,3	M12 × 1,5	8 g/7H	1,50	11,968	11,593	10,994	10,770	10,128	9,846	12,000	11,262	11,026	10,751	10,376
16 0/–0,3	M16 × 1,5	8 g/7H	1,50	15,968	15,593	14,994	14,770	14,128	13,846	16,000	15,262	15,026	14,751	14,376
20 0/–0,3	M20 × 1,5	8 g/7H	1,50	19,968	19,593	18,994	18,770	18,128	17,846	20,000	19,262	19,026	18,751	18,376
25 0/–0,4	M25 × 1,5	8 g/7H	1,50	24,968	24,593	23,994	23,758	23,128	22,834	25,000	24,276	24,026	23,751	23,376
32 0/–0,4	M32 × 1,5	8 g/7H	1,50	31,968	31,593	30,994	30,758	30,128	29,834	32,000	31,276	31,026	30,751	30,376
40 0/–0,4	M40 × 1,5	8 g/7H	1,50	39,968	39,593	38,994	38,758	38,128	37,834	40,000	39,276	39,026	38,751	38,376
50 0/–0,4	M50 × 1,5	8 g/7H	1,50	49,968	49,593	48,994	48,744	48,128	47,820	50,000	49,291	49,026	46,751	48,376
63 0/–0,4	M63 × 1,5	8 g/7H	1,50	62,968	62,593	61,994	61,744	61,128	60,820	63,000	62,291	62,026	61,751	61,376
75 0/–0,4	M75 × 1,5	8 g/7H	1,50	74,698	74,593	73,994	73,744	73,128	72,820	75,000	74,291	74,026	73,751	73,376
90 0/-0,5	M90 × 2	8 g/7H	2,00	89,962	89,512	88,663	88,383	87,508	87,151	90,000	89,001	88,701	88,310	87,835
110 0/–0,5	M110 × 2	8 g/7H	2,00	109,962	109,512	108,663	108,383	107,508	107,151	110,000	109,001	108,701	108,310	107,835

NOTE See Figure 1 for details.

Table 2 – Outside diameters for non-threadable conduit

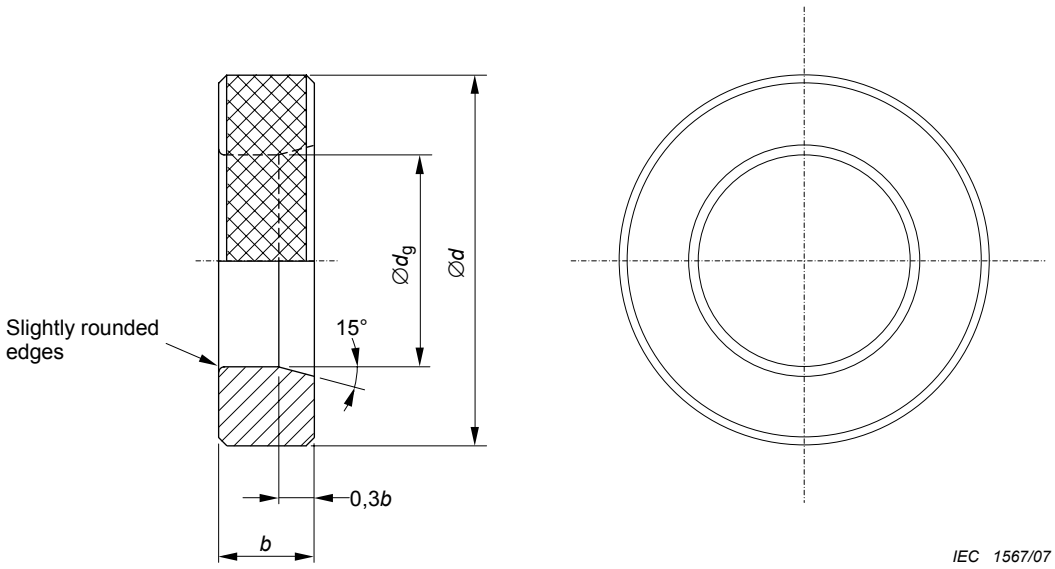
Outside diameters mm	Tolerance mm
6	+0,0 –0,1
8	+0,0 –0,2
10	+0,0 –0,2
12	+0,0 –0,3
16	+0,0 –0,3
20	+0,0 –0,3
25	+0,0 –0,4
32	+0,0 –0,4
40	+0,0 –0,4
50	+0,0 –0,5
63	+0,0 –0,6
75	+0,0 –0,7
90	+0,0 –0,9
110	+0,0 –1,1



3/8 H = 0,324 76 P H = 0,866 03 P

5/8 H = 0,541 27 P P = Pitch

Figure 1 – Basic profile of screw threads



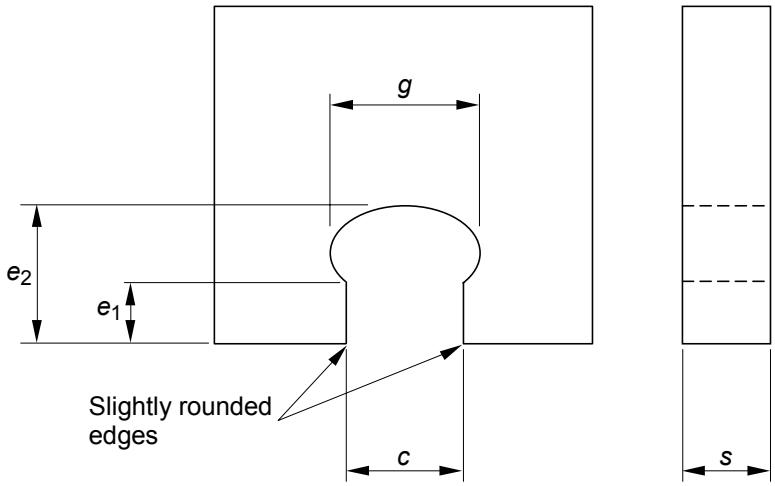
Admissible wear: +0,01 mm

Material: steel

It shall be possible to slide the gauge completely over the conduit without excessive force. For conduits normally provided with a protective coating, this test may be carried out before the application of the protective coating.

Size mm	d_g [a] mm	***b*** mm	***d*** mm
6	6,04	8	32
8	8,04	8	32
10	10,04	8	32
12	12,04	10	38
16	16,04	12	45
20	20,04	12	45
25	25,04	16	60
32	32,04	18	70
40	40,04	18	70
50	50,04	20	85
63	63,04	20	100
75	75,04	24	120
NOTE For conduits above 75 mm, alternate appropriate measuring methods may be used.			
[a] Manufacturing tolerance: $^{+0,00}_{-0,01}$ mm			

Figure 2 – Gauges for checking maximum outside diameters of threadable conduits



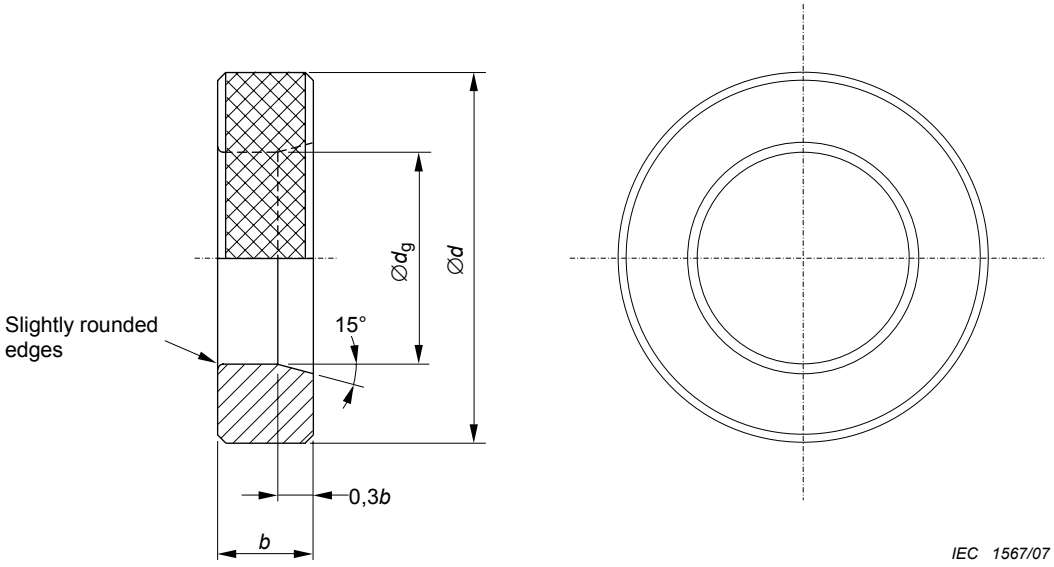
IEC 1568/07

Material: steel

It shall not be possible to pass the gauge over the conduit, in any position, without excessive force.

Size	*C* mm	Manufacturing tolerance mm	Admissible wear mm	e_1 mm	e_2 mm	*g* mm	*s* mm
6	5,900	+0,000 –0,016	+0,016 –0,000				
8	7,800	+0,000 –0,016	+0,016 –0,000				
10	9,800	+0,000 –0,016	+0,016 –0,000	5	11	12	7
12	11,700	+0,000 –0,018	+0,018 –0,000	6	13	14	8
16	15,700	+0,000 –0,018	+0,018 –0,000	8	17	18	8
20	19,700	+0,000 –0,022	+0,022 –0,000	10	23	27	9
25	24,600	+0,000 –0,022	+0,022 –0,000	10	23	27	9
32	31,600	+0,000 –0,025	+0,025 –0,000	12	29	34	10
40	39,600	+0,000 –0,030	+0,030 –0,000	14	35	42	10
50	49,600	+0,000 –0,030	+0,030 –0,000	16	42	52	12
63	62,600	+0,000 –0,030	+0,030 –0,000	18	49	65	12
75	74,600	+0,000 –0,030	+0,030 –0,000	20	55	77	14
NOTE For conduits over 75 mm, alternate appropriate measuring methods may be used.							

Figure 3a – Gauges for checking minimum outside diameters of rigid metallic threadable conduits



Material: steel

It shall not be possible to slide the gauge completely over the conduit under its own weight.

Size	d_g [a] mm	*b* mm	*d* mm
6	5,90	16	32
8	7,80	16	32
10	9,80	16	32
12	11,70	20	38
16	15,70	24	45
20	19,70	24	45
25	24,60	32	60
32	31,60	36	70
40	39,60	36	70
50	49,50	40	85
63	62,40	40	100
75	74,30	48	120
NOTE For conduits over 75 mm, alternate appropriate measuring methods may be used.			
[a] Manufacturing tolerance: $^{+0,00}_{-0,01}$ mm Admissible wear: $^{+0,01}_{-0,00}$ mm			

Figure 3b – Gauges for checking minimum outside diameters of threadable conduits other than rigid metallic

Figure 3 – Gauges for checking minimum outside diameters of threadable conduits

Bibliography

IEC 60981, *Extra heavy-duty electrical rigid steel conduits*

IEC 61386 (all parts), *Conduit systems for electrical installations*
NOTE Harmonized in EN 61386 series (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
ISO 68-1	1998	ISO general purpose screw threads - Basic profile - Part 1: Metric screw threads	–	–
ISO 965-1	1998	ISO general-purpose metric screw threads - Tolerances - Part 1: Principles and basic data	–	–
ISO 1502	1996	ISO general-purpose metric screw threads - Gauges and gauging	–	–

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