

Specification for

**Nominal lengths of bolts,
screws and studs, and
thread lengths for
general purpose bolts**

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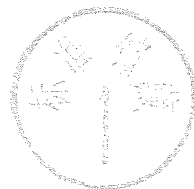
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STANDARDS

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the General Mechanical Engineering Standards Policy Committee (GME/-) to Technical Committee GME/9, upon which the following bodies were represented:

BEAMA Ltd.
 British Constructional Steelwork Association Ltd.
 British Industrial Fasteners Federation
 British Railways Board
 British Steel Industry
 British Steel Industry (Wire Section)
 Gauge and Tool Makers' Association
 Ministry of Defence
 Society of Motor Manufacturers and Traders Limited
 Washer Manufacturers' Association of Great Britain

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

British Furniture Manufacturers' Federation
 British Independent Steel Producers' Association
 British Plastics Federation
 British Turned-parts Manufacturers' Association
 EEA (the Electronic and Business Equipment Association)
 General, Municipal, Boilermakers and Allied Trades Union
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 National Association of Fastener Stockholders
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 Screw Thread Tool Manufacturers' Association
 Small Electrical Appliances Marketing Association
 Society of British Aerospace Companies Limited
 Steel Construction Institute
 Telecommunications Engineering and Manufacturing Association
 Timber Trade Federation
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National foreword

This British Standard, which has been prepared under the direction of the General Mechanical Engineering Standards Policy Committee, is identical with ISO 888 : 1976 'Bolts, screws and studs — Nominal lengths, and thread lengths for general purpose bolts' published by the International Organization for Standardization (ISO).

Cross-reference

International standard	Corresponding British Standard
ISO 225 : 1976	BS 6565 : 1985 Method for dimensioning and designating bolts, screws, studs and nuts (Identical)

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Bolts, screws and studs – Nominal lengths, and thread lengths for general purpose bolts

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies nominal lengths for bolts, screws and studs, and thread lengths for general purpose bolts.

2 REFERENCE

ISO 225, *Bolts, screws and studs – Dimensioning*.

3 NOMINAL LENGTHS FOR BOLTS, SCREWS AND STUDS

The basic dimensions shown in table 1 apply to the nominal lengths of bolts and screws (for example : hexagon bolts,

TABLE 1 – Basic dimensions in millimetres and in inches

Nominal length /		Nominal length /	
mm	in	mm	in
2	1/16	60	—
2,5	3/32	65	2 1/2
3	1/8	70	2 3/4
4	5/32	75	3
5	3/16	80	3 1/4
6	1/4	85	—
(7)	—	90	3 1/2
8	5/16	(95)	3 3/4
(9)	—	100	4
10	3/8	(105)	4 1/4
(11)	7/16	110	4 1/2
12	1/2	(115)	—
14	9/16	120	4 3/4
16	5/8	(125)	—
(18)	—	130	5
20	3/4	140	5 1/2
(22)	7/8	150	6
25	1	160	—
(28)	1 1/8	170	6 1/2
30	1 1/4	180	7
(32)	—	190	7 1/2
35	1 3/8	200	8
(38)	—	220	9
40	1 1/2	240	—
45	1 3/4	260	10
50	2	280	11
55	2 1/4	300	12

slotted head screws, cross recess head screws) and studs of both metric and inch sizes. Table 1 indicates the comparable basic lengths in the two systems, but values are not intended to be identical.

Lengths in brackets should be avoided as far as possible.

For dimensioning of nominal lengths, see ISO 225.

4 THREAD LENGTHS FOR GENERAL PURPOSE BOLTS

The thread lengths shown in tables 2, 3 and 4 apply to bolts (for example : hexagon bolts) of both metric and inch sizes. Table 2 contains the formulae on which the calculation of the thread lengths indicated in tables 3 and 4 was based.

For dimensioning of thread lengths, see ISO 225.

TABLE 2 – Formulae – Dimensions in millimetres and inches

mm		
Nominal length /		Formulae for thread length b
over	to	
—	125	$2d + 6$
125	200	$2d + 12$
200	—	$2d + 25$

in		
Nominal length /		Formulae for thread length b
over	to	
—	5	$2d + 1/4$
5	8	$2d + 1/2$
8	—	$2d + 1$

d = nominal diameter of the bolt

TABLE 3 – Allocation of the thread lengths to the bolt diameters
Dimensions in millimetres

Thread diameter <i>d</i>	1,6	2	2,5	3	4	5	6	7	8	10	12	14	16	18	20	
Thread length <i>b</i>	$l \leq 125$	9	10	11	12	14	16	18	20	22	26	30	34	38	42	46
	$125 < l \leq 200$	–	–	–	–	–	–	–	–	28	32	36	40	44	48	52
	$l > 200$	–	–	–	–	–	–	–	–	–	–	–	–	57	61	65

Thread diameter <i>d</i>	22	24	27	30	33	36	39	42	45	48	52	56	60	64	68	
Thread length <i>b</i>	$l \leq 125$	50	54	60	66	72	78	84	90	96	102	–	–	–	–	–
	$125 < l \leq 200$	56	60	66	72	78	84	90	96	102	108	116	124	132	140	148
	$l > 200$	69	73	79	85	91	97	103	109	115	121	129	137	145	153	161

Thread diameter <i>d</i>	72	76	80	85	90	95	100	105	110	115	120	125	130	140	150
Thread length <i>b</i>	$l \leq 125$	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	$125 < l \leq 200$	156	164	172	182	192	–	–	–	–	–	–	–	–	–
	$l > 200$	169	177	185	195	205	215	225	235	245	255	265	275	285	305

TABLE 4 – Allocation of the thread lengths to the bolt diameters
Dimensions in inches

Thread diameter <i>d</i>	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	
Thread length <i>b</i>	$l \leq 5$	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4
	$5 < l \leq 8$	–	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2	2 1/4	2 1/2	2 3/4	3
	$l > 8$	–	–	–	–	–	–	–	–	2 3/4	3	3 1/4	3 1/2

Thread diameter <i>d</i>	1 3/8	1 1/2	1 3/4	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	
Thread length <i>b</i>	$l \leq 5$	3	3 1/4	3 3/4	4 1/4	–	–	–	–	–	–	–	
	$5 < l \leq 8$	3 1/4	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	–	–
	$l > 8$	3 3/4	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9

Publication(s) referred to

See national foreword.

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BSI
2 Park Street
London
W1A 2BS

BSI
Linford Wood
Milton Keynes
MK14 6LE