

Specification for

Self-tapping screws and metallic drive screws

UDC 621.882.082.8

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Ministry of Defence, Navy Department

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Rolled Thread Screw Association

Scientific Instrument Manufacturers' Association

Society of Motor Manufacturers and Traders Ltd.

Individual manufacturers

This British Standard, having been approved by the Mechanical Industry Standards Committee, was published under the authority of the Executive Board on 25 September 1972

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First published 31 May 1967
First revision September 1972

The following BSI references relate to the work on this standard;
Committee references MEE/60, MEE/60/9
Draft for comment 70/31170

ISBN 0580 07337 8

Amendments issued since publication

Amd. No.	Date of issue	Comments
8549	May 1995	Indicated by a sideline in the margin

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Foreword

This standard makes reference to the following British Standards:

BS 1580, *Unified screw threads*.

BS 4500, *ISO limits and fits*.

BS 4183, *Machine screws and machine screw nuts. Metric series*.

This revised British Standard has been prepared under the authority of the Mechanical Engineering Industry Standards Committee to supersede the first edition published in 1967. Since 1967 the International Committee on Bolts, Nuts and Accessories (ISO/TC2), has prepared ISO Draft Recommendations Nos. 1478–1483 for Type AB and Type B self tapping screws based on the American Standard USAS B18, 6.4.

This revision of BS 4174 introduces Type AB self tapping screws which are recommended instead of Type A. Type A has been declared obsolescent, but information on this type has been retained as an Appendix to this standard until such time as it becomes obsolete. In addition metric equivalents of the inch dimensions have been included together with details of metric hexagon heads for Types AB, B, BT and Y.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 45 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Obsolescent (by Amendment No. 1).

The need for screws covered by this British Standard has been reviewed and it has been decided that in the interests of rationalization they should be regarded as obsolescent. Their use for new designs is not therefore recommended. The standard will be withdrawn in due course.

Even though this standard has largely been superseded by a series of BS EN standards of which BS EN ISO 1479:1994 and BS EN ISO 7049:1994 are typical examples, it has not been withdrawn but declared obsolescent as it is recognized that it should remain available for the servicing of existing designs which are expected to have a long working life.

1 Scope

This British Standard relates to ferrous and non-ferrous tapping screws and metallic drive screws.

Provisions are made for two classes of tapping screw, namely thread forming and thread cutting, each available in several types which are described and illustrated in the standard.

General dimensions are given for countersunk, raised countersunk, and pan head tapping screws with slotted or recessed heads, slotted mushroom heads, recessed flange heads and hexagon head tapping screws and round head metallic drive screws. Countersunk and raised countersunk head tapping screws in short lengths have shallower truncated heads than those in normal lengths and separate tables of dimensions are accordingly provided.

Details of a suitable head flushness gauge for countersunk head screws and a gauge for checking recess penetration on recessed head screws together with testing requirements for the inspection of tapping screws and approximate hole sizes for steel screws in various materials, are given with appendices.

NOTE 1 Round head screws other than metallic drive screws have not been included in this standard as it is considered that pan head screws provide for most of the applications in which round head screws are normally used and allow more conveniently for the application of torque.

NOTE 2 The titles of the British Standards referred to in this standard are given on page iii.

2 Styles of head

2.1 The descriptions of the various types of screw head are in accordance with those commonly used in British practice. The equivalent British and American terms are listed for information below:

British	American
Hexagon	Hexagon
Countersunk	Flat
Truncated countersunk	Undercut flat
Raised countersunk	Oval
Truncated raised countersunk	Undercut oval
Pan	Pan
Mushroom	Truss
Flange	Flange
Round-head (metallic drive screws only)	Round-head (metallic drive screws only)

2.2 American "type designations" are used to indicate the type of tapping or drive screw and these are shown, together with their former (British) equivalents, in Table 1.

3 Types of screws and type designations

3.1 **General.** The various types of thread forming, thread cutting and drive screw covered by this standard are as shown in Table 1.

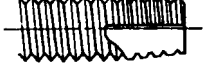
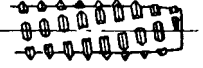
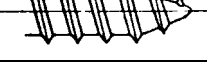
3.2 **Thread forming screws.** These screws are for application in materials which allow sufficient plastic deformation to enable the thread to be formed by displacement without the removal of any material.

3.2.1 *Type AB.* These screws have widely spaced threads and gimlet points. The thread pitches are the same as those of Type B. They are primarily intended for use in light sheet metal, metal-clad and resin-impregnated plywood, soft plastics, etc. Type AB is suitable for applications in which Type A has previously been used.

3.2.2 Type B. These screws have widely spaced threads and blunt, slightly tapered points. These screws are primarily intended for use in light and heavy sheet metal, non-ferrous castings, soft plastics, metal-clad and resin-impregnated plywood, etc.

3.2.3 Type A. These screws have widely spaced threads and gimlet points. The pitch is coarser than for Types AB and B. They are primarily intended for use in light sheet metal, metal-clad and resin-impregnated plywood, soft plastics, etc. This type of screw is now obsolescent and it is recommended that Type AB be substituted where Type A screws are now specified.

Table 1 — Types of screws and type designations for tapping screws and metallic drive screws

Thread contour	Type of screw	Type designation for tapping screws and metallic drive screws
	Thread forming	AB
	Thread forming	B (formerly Z)
	Thread cutting	T (formerly 23)
	Thread cutting	Y
	Thread cutting	D (formerly 1)
	Thread cutting	BT (formerly 25)
	Drive	U
	Thread forming	A Not recommended; use Type AB

3.3 Thread cutting screws. These screws are for applications in materials which do not allow plastic deformation to an extent sufficient to form a thread by displacement. They may also be used, however, in materials which do allow plastic deformation and may have the advantage of a lower driving torque than thread forming screws. In some cases they may have the further advantage of a standard machine screw thread form. Details of these types and their application are as follows:

- 1) *Type BT.* These screws are similar to the Type B thread forming screws but have one cutting flute extending for a short distance from the point of the screw. They are primarily intended for use in light and heavy sheet metal, non-ferrous castings, plastics, die castings, metal-clad and resin-impregnated plywood, asbestos and other compositions.
- 2) *Type Y.* These screws have widely spaced threads, blunt, slightly tapered points and cutting flutes which extend from the point to the head. They are similar to the American Type BF except that the cutting flutes on the American screws extend only a short distance from the point of the screw. These screws are primarily intended for use in plastics, die castings, metal-clad and resin-impregnated plywood, asbestos and other compositions.
- 3) *Type D.* These screws have threads of unified form closely approximating to machine screw threads. They have blunt, slightly tapered points and one slot to form a cutting edge extending for a short distance from the point of the screw. They are suitable for use in such materials as aluminium, zinc, and lead die castings, steel sheets and shapes, cast iron, brass, plastics, etc.

4) *Type T*. These screws have threads of unified form closely approximating to machine screw threads. They have blunt, slightly tapered points and one or more cutting flutes extending for a short distance from the point of the screw. These screws are suitable for use in materials such as aluminium, zinc and lead die castings, steel sheets and shapes, cast iron, brass, plastics, etc.

3.4 Metallic drive screws. These screws are designated Type U. They have multiple threads with a large lead angle and a pilot point. Primarily for use in cast iron, metal shapes and plastics, these screws are hammered or forced into the appropriate holes and are intended for making permanent fastenings.

4 Material and Manufacture

4.1 Steel. The steel used in the manufacture of tapping screws and metallic drive screws shall be such that after suitable heat treatment the finished products shall satisfy the test requirements of this standard.

4.2 Other materials. Tapping screws and metallic drive screws may be made from corrosion-resistant steel, brass, monel and aluminium but screws made from these materials shall not be subject to the test requirements of this standard.

5 Finish

Steel tapping screws and metallic drive screws may have either a dull or bright finish according to the process used for hardening. They may also be supplied with plated or other protective and/or decorative finish.

NOTE Special attention is drawn to the fact that when plating is applied to hardened screws it is necessary for them to be heat-treated immediately in order to remove hydrogen embrittlement. A suitable treatment is to bake the screws at a minimum temperature of 190 °C for a period of not less than 2 hours.

6 Dimensions

6.1 Thread forming screws. The dimensions and tolerances for thread forming screws shall be as specified in 7 to 12 and Table 2, Table 4, Table 5, Table 8 to Table 21 and Table 23.

6.2 Thread cutting screws. The dimensions and tolerances for thread cutting screws shall be as specified in 7 to 12 and Table 2 and Table 4 to Table 21.

6.3 Metallic drive screws. The dimensions and tolerances for metallic drive screws shall be as specified in 7 to 10 and Table 3 and Table 22.

NOTE The dimensions given in the tables are for uncoated screws and may be exceeded after coating.

7 Heads of screws

The screw head shall be concentric with the shank within a tolerance of 2 % of the maximum head diameter or the maximum width across flats of hexagon head screws, the tolerance being one half of the total indicator reading.

The slots and recesses shall be clean and free from burrs.

The slots shall be concentric with the shank within a tolerance of 4 % of the basic major diameter plus 0.025 mm (0.001 in) the tolerance being one half of the total indicator reading.

Recesses shall be concentric with the shank within a tolerance of 4 % of the basic major diameter plus 0.025 mm (0.001 in) the tolerance being one half of the total indicator reading.

The head height specified in the dimensional tables represents a metal to metal measurement, i.e. on heads having rounded top surfaces, the reduction of the rounded surface due to a slot or recess shall not be considered part of the head height.

On countersunk and raised countersunk heads the head height specified shall be measured from the upper surface of the head (excluding the raised portion on raised countersunk heads) to the point of intersection of the bearing surface of the head and the basic major diameter; this point of intersection is not necessarily the same as the actual junction of the head and shank.

The depth of slot, dimension *T*, shall be measured from the top of the head to the point at which the slot breaks through.

The depth of recess, dimension *U*, shall be measured from the extreme point at the bottom of the recess to the point where the sides or wings of the recess join the upper surface of the head.

Countersunk and raised countersunk screws as specified in Table 10, Table 11, Table 14 and Table 15 have truncated heads and are designed to give additional thread engagement on short length screws.

8 Length of screws

8.1 Countersunk head and truncated countersunk head. The nominal length shall be the distance from the upper surface of the head to the extreme end of the point.

8.2 Raised countersunk head and truncated raised countersunk head. The nominal length shall be measured as in 8.1, excluding the raised portion of the head.

8.3 Pan, mushroom and hexagon head. The nominal length shall be the distance from the underside of the head to the extreme end of the point.

8.4 Tolerance on length. The tolerance on the nominal length of screws shall be applied to the inch nominal lengths only and are $j_s 17$ for Types AB and A and minus $\frac{1T}{2} 17$ for Types B, BT, D, T and Y. The maximum and minimum values of length are shown in Table 2 except for Type U, the tolerances for which are shown in Table 3. (See BS 4500.)

The approximate metric nominal lengths are included for order reference purposes.

Table 2 — Types AB, A, B, BD, D, T and Y thread forming and cutting screws

Length *l*

Nominal size		Types AB and A				Types B, BT, D, T and Y			
		Max.		Min.		Max.		Min.	
mm	in	mm	in	mm	in	mm	in	mm	in
3.2	$\frac{1}{8}$	3.78	0.149	2.58	0.102	3.18	0.125	2.58	0.102
4.5	$\frac{3}{16}$	5.36	0.211	4.16	0.164	4.76	0.188	4.16	0.164
6.5	$\frac{1}{4}$	7.10	0.280	5.60	0.220	6.35	0.250	5.60	0.220
9.5	$\frac{3}{8}$	10.27	0.404	8.77	0.345	9.52	0.375	8.77	0.345
13	$\frac{1}{2}$	13.60	0.535	11.80	0.465	12.70	0.500	11.80	0.465
16	$\frac{5}{8}$	16.78	0.661	14.98	0.590	15.88	0.625	14.98	0.590
19	$\frac{3}{4}$	20.10	0.791	18.00	0.709	19.05	0.750	18.00	0.709
22	$\frac{7}{8}$	23.27	0.916	21.17	0.833	22.22	0.875	21.17	0.833
25	1	26.45	1.041	24.35	0.959	25.40	1.000	24.35	0.959
32	$1\frac{1}{4}$	33.00	1.300	30.50	1.201	31.75	1.250	30.50	1.201
38	$1\frac{1}{2}$	39.35	1.549	36.85	1.451	38.10	1.500	36.85	1.451
45	$1\frac{3}{4}$	45.70	1.799	43.20	1.701	44.45	1.750	43.20	1.701
50	2	52.30	2.059	49.30	1.941	50.80	2.000	49.30	1.941

Table 3 — Metallic drive screws, Type U

Length	Tolerance on length	
	mm	in
Up to and including 9.5 mm ($\frac{3}{8}$ in)	± 0.25	± 0.010
Over 9.5 mm ($\frac{3}{8}$ in)	± 0.38	± 0.015

8.5 Short screws. These lengths and shorter for countersunk and raised countersunk heads become truncated in accordance with Table 10, Table 11, Table 14 and Table 15. Also for Types B, BT and Y the point length *F* becomes $1\frac{1}{2}$ to 2 pitches long as against 2 to $2\frac{1}{2}$ pitches for normal length screws (see Table 4.)

Table 4 — Short screws

Type AB		Types B, BT and Y			
		Screw size (No.)	Length		
Screw size (No.)	Length		Countersunk and raised counter-sunk heads	All other heads	
	mm in		mm in	mm	in
2	4.5 ($\frac{3}{16}$)	2	4.5 ($\frac{3}{16}$)	2.8	($\frac{7}{54}$)
4	6.5 ($\frac{1}{4}$)	4	6.5 ($\frac{1}{4}$)	4.5	($\frac{3}{16}$)
6	8.0 ($\frac{5}{16}$)	6	8.0 ($\frac{5}{16}$)	8.0	($\frac{1}{4}$)
8	11.0 ($\frac{7}{16}$)	8	11.0 ($\frac{7}{16}$)	8.0	($\frac{5}{16}$)
10	13.0 ($\frac{1}{2}$)	10	13.0 ($\frac{1}{2}$)	9.5	($\frac{3}{8}$)
12	14.0 ($\frac{9}{16}$)	12	14.0 ($\frac{9}{16}$)	11.0	($\frac{7}{16}$)
14	16.0 ($\frac{5}{8}$)	14	16.0 ($\frac{5}{8}$)	13.0	($\frac{1}{2}$)
16	21.0 ($\frac{13}{16}$)	16	16.0 ($\frac{5}{8}$)	13.0	($\frac{1}{2}$)

NOTE The lengths in these tables are intended for design purpose only. When ordering, reference should be made to Table 39 to Table 43 inclusive for preferred lengths.

9 Screw threads

9.1 Thread forming screws, Types AB and B. Types AB and B screws shall have threads conforming to the dimensions, limits and tolerances specified in Table 5.

9.2 Thread forming screws, Type A. Type A screws shall have threads conforming to the dimensions, limits and tolerances specified in Table 23.

9.3 Thread cutting screws, Types BT and Y. Types BT and Y screws shall have threads conforming to the dimensions, limits and tolerances specified in Table 5 and Table 6 respectively.

9.4 Thread cutting screws, Types D and T. Types D and T screws shall have threads approximating to unified form conforming to the dimensions, limits and tolerances specified in Table 7.

9.5 Metallic drive screws, Type U. Type U screws shall have threads conforming to the dimensions, limits and tolerances specified in Table 22.

10 Length of thread

10.1 Thread forming and thread cutting screws, Types AB, B, A, BT and Y. Screws in lengths equal to 8 times their diameter or 38 mm (1.5 in) whichever is the shorter shall be threaded as close to the head as is practical in manufacture.

Longer screws shall, unless otherwise specified, have a minimum length of thread equal to 6 times their diameter, or 38 mm (1.5 in) whichever is the shorter.

10.2 Thread cutting screws, Types D and T

10.2.1 Screws in lengths equal to 8 times their diameter and under. The length of unthreaded shank under the head shall not exceed 1 pitch on screws in lengths up to and including 3 times their diameter or 2 pitches on screws in lengths over 3 times their diameter up to and including 8 times their diameter or 38 mm (1.5 in) whichever is the shorter. The length of unthreaded shank under the head is defined as the distance from the leading face of a nut which has been screwed as far as possible on to the screw by hand to the junction of the basic major diameter and the countersunk portion of the head on countersunk and raised countersunk head screws and the underside of the head on other types of screws.

10.2.2 Screws in lengths over 8 times their diameter. Screws in lengths equal to more than 8 times their diameter shall, unless otherwise specified, have a minimum length of thread equal to 6 times their diameter or 38 mm (1.5 in) whichever is the shorter.

10.3 Metallic drive screws, Type U. All screws shall be threaded as close to the head as is practical in manufacture.

11 Diameter of unthreaded shank

11.1 Thread forming and thread cutting screws, Types AB, B, A, BT and Y. The diameter of the unthreaded portion of the shank shall not exceed the maximum major diameter of the thread and shall be not less than the minor diameter of the thread as specified in Table 5, Table 6 and Table 23 as appropriate.

11.2 Thread cutting screws, Types D and T. The diameter of the unthreaded portion of the shank shall not exceed the maximum major diameter of the thread as specified in Table 7 and shall be not less than the Class 2A minimum effective diameter as specified for the appropriate thread in BS 1580.

12 Radius under head

On countersunk and raised countersunk head screws the radius under the head shall not exceed 40 % of the basic major diameter. On all other types of screw (including truncated countersunk and raised countersunk head screws) the radius under the head shall not exceed 15 % of the basic major diameter.

13 Testing

(after heat treatment)

13.1 Application test. Steel thread forming screws, Types AB, B and A and steel thread cutting screws, Types BT, Y, D and T shall be tested by screwing into holes in steel test plates conforming to 13.2 until the threads forming the point of the screw or any such incomplete threads are completely through the test plate. The screw shall have been hardened sufficiently to permit mating threads to be formed or cut into the test plate without deformation or shearing of the thread on the screws and without breaking the screws. All tests shall be carried out in the dry condition and during testing screws shall be driven without interruption into test plates.

13.2 Test plates. Test plates shall be made from low carbon cold-rolled steel having a hardness of 115/150 HV and shall conform to the appropriate thickness given in Appendix D, Table 27 and Table 28. The holes in the test plates shall be drilled or drilled and reamed to within ± 0.025 mm (0.001 in) of the sizes given in Appendix D, Table 27 and Table 28.

13.3 Torque test. Steel thread forming screws, Types AB, B and A, and steel thread cutting screws, Types BT, Y, D and T, shall be tested by the following method:

The screw shank shall be clamped by a suitable means so that at least two full threads under the head remain unclamped. The clamping device shall not damage or distort the thread. Torque shall be applied to the head of the screw by means of a suitable calibrated torque driver or other torque measuring device and the minimum torsional load specified in Appendix D, Table 25 and Table 26 shall be applied before fracture of the screw occurs.

14 Designation for ordering

When designating tapping screws and metallic drive screws for the purpose of an enquiry or an order, the following information shall be given:

- 1) Material.
- 2) Style of head and whether slotted or recessed¹⁾.
- 3) Type designation (e.g. Type AB).
- 4) Screw size (e.g. No. 6).
- 5) Length of screw in millimetres (or inches).
- 6) British Standard number (i.e. BS 4174).
- 7) Details of plating required (if any)²⁾.

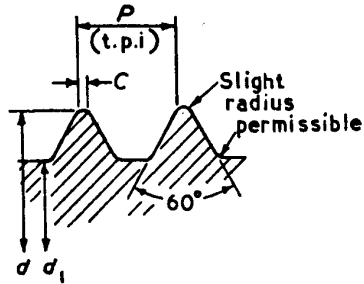
For example:

- a) Brass, slotted pan head tapping screws, Type AB, No. 6 $\times$ 9.5 mm to BS 4174.
- b) Steel, round head metallic drive screws, Type U, No. 10 $\times$ 13 mm to BS 4174.

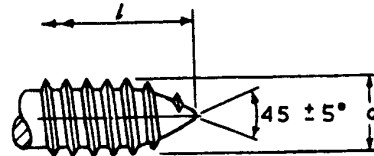
¹⁾ For hexagon heads state whether inch or metric across flats size is required, see Table 21.

²⁾ See relevant British Standards for specification of plating required.

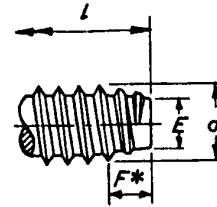
Table 5 — Thread and point details for Type AB and B thread forming screws and Type BT thread cutting screws



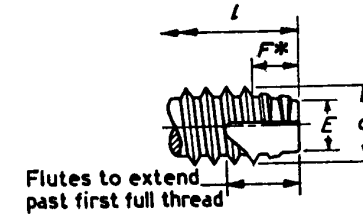
Thread form



Type AB



Type B



Type BT

Metric dimensions

Inch dimensions

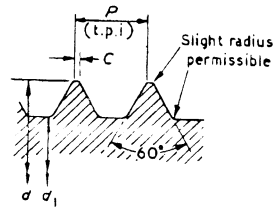
Screw size (No.)	Pitch P	Major dia. d		Minor dia. d_1		Crest width C	Point dia. E	
		max.	min.	max.	min.		max.	min.
	mm	mm	mm	mm	mm	mm	mm	mm
2	0.79	2.24	2.13	1.63	1.52	0.1	1.47	1.37
4	1.07	2.90	2.79	2.18	2.08	0.1	2.01	1.88
6	1.27	3.53	3.43	2.64	2.51	0.1	2.41	2.26
8	1.41	4.22	4.09	3.10	2.95	0.1	2.84	2.70
10	1.59	4.80	4.65	3.58	3.43	0.15	3.30	3.12
12	1.80	5.46	5.31	4.17	3.99	0.15	3.86	3.68
14	1.80	6.25	6.10	4.88	4.70	0.15	4.55	4.34
16	2.12	8.00	7.82	6.20	5.99	0.15	5.84	5.64

Screw size (No.)	Threads per inch	Major dia. d		Minor dia. d_1		Crest width C	Point dia. E	
		max.	min.	max.	min.		max.	min.
		in	in	in	in	in	in	in
2	32	0.088	0.084	0.064	0.060	0.004	0.058	0.054
4	24	0.114	0.110	0.086	0.082	0.004	0.079	0.074
6	20	0.139	0.135	0.104	0.099	0.004	0.095	0.089
8	18	0.166	0.161	0.122	0.116	0.004	0.112	0.106
10	16	0.189	0.183	0.141	0.135	0.006	0.130	0.123
12	14	0.215	0.209	0.164	0.157	0.006	0.152	0.145
14	14	0.246	0.240	0.192	0.185	0.006	0.179	0.171
16	12	0.315	0.308	0.244	0.236	0.006	0.230	0.222

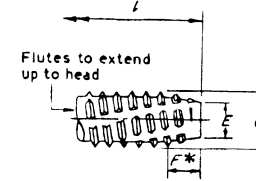
NOTE The above dimensions are for uncoated screws and may be exceeded after coating.

*See 8.5.

Table 6 — Thread and point details for Type Y thread cutting screws



Thread form



Type Y thread

Metric dimensions

Inch dimensions

Screw size (No.)	Pitch P	Major dia. d		Minor dia. d_1		Crest width C	Point dia. E	
		max.	min.	max.	min.	max.	max.	min.
	mm	mm	mm	mm	mm	mm	mm	mm
4	1.07	2.95	2.84	2.29	2.18	0.127	2.01	1.88
6	1.27	3.58	3.48	2.74	2.62	0.152	2.41	2.26
8	1.41	4.27	4.14	3.20	3.05	0.203	2.84	2.70
10	1.59	4.88	4.72	3.68	3.53	0.203	3.30	3.12
12	1.80	5.54	5.38	4.27	4.09	0.203	3.86	3.68
14	1.80	6.35	6.20	4.98	4.80	0.203	4.55	4.34

Screw size (No.)	Threads per inch	Major dia. d		Minor dia. d_1		Crest width C	Point dia. E	
		max.	min.	max.	min.	max.	max.	min.
		in	in	in	in	in	in	in
4	24	0.116	0.112	0.090	0.086	0.005	0.079	0.074
6	20	0.141	0.137	0.108	0.103	0.006	0.095	0.089
8	18	0.168	0.163	0.126	0.120	0.008	0.112	0.106
10	16	0.192	0.186	0.145	0.139	0.008	0.130	0.123
12	14	0.218	0.212	0.168	0.161	0.008	0.152	0.145
14	14	0.250	0.244	0.196	0.189	0.008	0.179	0.171

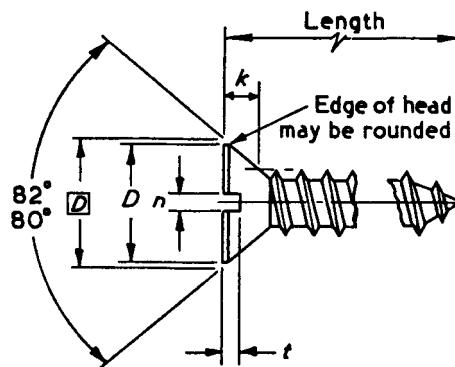
NOTE The above dimensions are for uncoated screws and may be exceeded after coating.

*See 8.5.

Table 7 — Thread and point details for types D and T thread cutting screws
(unified form threads)

		Type T		Type D	
Screw size (No.) or (in) and threads per inch	Major dia. <i>d</i>		Point dia. <i>E</i>		Length ^a <i>l</i>
	max.	min	max.	min.	Countersunk and raised beads
	in	in	in	in	in
4–40	0.1120	0.1072	0.086	0.077	$\frac{1}{4}$
4–48	0.1120	0.1076	0.090	0.083	$\frac{1}{4}$
6–32	0.1380	0.1326	0.106	0.095	$\frac{5}{16}$
6–40	0.1380	0.1332	0.112	0.103	$\frac{5}{16}$
8–32	0.1640	0.1586	0.132	0.121	$\frac{7}{16}$
8–36	0.1640	0.1590	0.135	0.125	$\frac{7}{16}$
10–24	0.1900	0.1834	0.147	0.133	$\frac{1}{2}$
10–32	0.1900	0.1846	0.158	0.147	$\frac{1}{2}$
$\frac{1}{4}$ –20	0.2500	0.2428	0.198	0.181	$\frac{5}{8}$
$\frac{1}{4}$ –28	0.2500	0.2438	0.213	0.201	$\frac{5}{8}$
$\frac{5}{16}$ –18	0.3125	0.3043	0.255	0.236	$\frac{5}{8}$
$\frac{5}{16}$ –24	0.3125	0.3059	0.269	0.255	$\frac{5}{8}$
NOTE 1 The above dimensions are for uncoated screws and may be exceeded after coating.					
NOTE 2 Length of taper point $F = 2\frac{1}{2}$ to $3\frac{1}{2}$ threads for screws having a thread length equal to 8 threads or less = $3\frac{1}{2}$ to $4\frac{1}{2}$ threads for screws having a thread length greater than 8 threads.					
NOTE 3 The design of the slots and flutes shall be generally as illustrated but the details shall be at the option of the manufacturer providing the screws satisfy the testing requirements in Appendix D.					
NOTE 4 The dimensions in this table are based on BS 1580, an imperial units standard, so are given in imperial units only.					
^a Countersunk and raised head screws in these lengths and shorter are “short length screws” and have truncated heads in accordance with Table 10, Table 11, Table 14 and Table 15.					

Table 8 — 80° Countersunk head screws



For types of thread and point available see Table 5 to Table 7 and Table 23

Metric dimensions

Inch dimensions

Screw size (No.)	Diameter of head		Depth of head	Flushness tolerance ^a	Slot		
	$\boxed{D}$ ^a	D	k		Width n		Depth t
		min.	ref.		max.	min.	nom.
	mm	mm	mm	mm	mm	mm	mm
2	4.37	3.73	1.30	0.203	0.79	0.58	0.48
4	5.71	4.95	1.70	0.254	0.99	0.79	0.63
6	7.09	6.20	2.11	0.254	1.22	0.99	0.79
8	8.43	7.42	2.54	0.280	1.37	1.14	0.94
10	9.78	8.64	2.95	0.280	1.52	1.27	1.12
12	11.13	9.88	3.35	0.305	1.70	1.42	1.27
14	12.88	11.48	3.89	0.356	1.90	1.63	1.47
16	16.13	14.43	4.85	0.432	2.13	1.83	1.85

Screw size (No.)	Diameter of head		Depth of head	Flushness tolerance ^a	Slot		
	$\boxed{D}$ ^a	D	k		Width n		Depth t
		min.	ref.		max.	min.	nom.
	in	in	in	in	in	in	in
2	0.172	0.147	0.051	0.008	0.031	0.023	0.019
4	0.225	0.195	0.067	0.010	0.039	0.031	0.025
6	0.279	0.244	0.083	0.010	0.048	0.039	0.031
8	0.332	0.292	0.100	0.011	0.054	0.045	0.037
10	0.385	0.340	0.116	0.011	0.060	0.050	0.044
12	0.438	0.389	0.132	0.012	0.067	0.056	0.050
14	0.507	0.452	0.153	0.014	0.075	0.064	0.058
15	0.635	0.568	0.191	0.017	0.084	0.072	0.073

NOTE 1 See Table 10 for short length screws.

NOTE 2 The above dimensions are for uncoated screws and may be exceeded after coating.

^a See Appendix B.