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मानक

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IS 7800 (1990): Thread cutting tapping screw - Screw threads and ends - Dimensions [PGD 31: Bolts, Nuts and Fasteners Accessories]



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“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*

**THREAD CUTTING TAPPING SCREWS —  
SCREW THREADS AND ENDS — DIMENSIONS**

*( First Revision )*

**भारतीय मानक**

**चूड़ी बनाने वाले टैपिंग पेच — चूड़ियाँ और किनारे — परिमाण**

**( पहला पुनरीक्षण )**

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**BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002**

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards on 16 February 1990, after the draft finalized by the Bolts, Nuts and Fasteners Accessories Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This standard was originally issued in 1975. The revision has been done in order to incorporate the designation system followed in International Standards on tapping screws. In the new system, screw size numbers have been dispensed with and screw sizes are designated by the nominal diameters prefixed with letters ST. The following table gives old screw size numbers with the corresponding new size designations:

<i>Screw Size No. as per IS 7800 : 1975</i>	<i>Corresponding Sizes in This Revision</i>	<i>Screw Size No . as per IS 7800 : 1975</i>	<i>Corresponding Sizes in This Revision</i>
( 0 )	Not covered	8	ST 4.2
( 1 )	Not covered	10	ST 4.8
2	ST 2.2	( 12 )	ST 5.5
( 3 )	Not covered	14	ST 6.3
4	ST 2.9	( 16 )	ST 8
( 5 )	Not covered		
6	ST 3.5		
( 7 )	Not covered		

Thread cutting tapping screws are generally for application in materials where disruptive internal stresses are undesirable because of low plastic deformation capability of the materials or where excessive driving torques are encountered with thread forming tapping screws. These screws may also be used in applications where thread forming tapping screws are used, with the advantage of a lower driving torque.

Type BT and Y tapping screws are intended for use in plastics, asbestos and other similar compositions.

In the preparation of this standard, considerable assistance has been derived from:

BS 4174-1972 'Specification for self-tapping screws and metallic drive screws', issued by the British Standards Institution.

ISO 1478-1983 'Tapping screws thread', issued by the International Organization for Standardization ( ISO ).

# Indian Standard

## THREAD CUTTING TAPPING SCREWS — SCREW THREADS AND ENDS — DIMENSIONS ( First Revision )

### 1 SCOPE

1.1 This standard covers the dimensions for screw threads and ends for thread cutting tapping screws with thread sizes from ST 2·2 to ST 8.

### 2 REFERENCE

IS No.	Title
IS 5957 : 1989	Screw threads for thread forming tapping screws — Dimensions (first revision)

### 3 TYPES

3.1 Screw threads for thread cutting tapping screws are of the following two types:

- a) Type BT — This form of screw thread conforms to Type F of IS 5957 : 1989 except that the thread has one cutting flute extending for a short distance from the point of screw.
- b) Type Y — This form of screw thread has widely spaced threads, blunt, slightly

tapered point and cutting flutes which extend from the point to the head.

### 4 THREAD PROFILE AND DIMENSIONS

4.1 The thread profile and dimensions for Type BT and Y shall be as given in Tables 1 and 2, respectively.

NOTE — Details of taper point, slot and flute design are left to the discretion of the manufacturer, provided that the screws meet the performance requirement. The threads are not to be gauged but should meet the performance requirement.

4.2 No protrusion of excess metal beyond the apex of the point resulting from thread rolling shall be permissible.

### 5 DESIGNATION

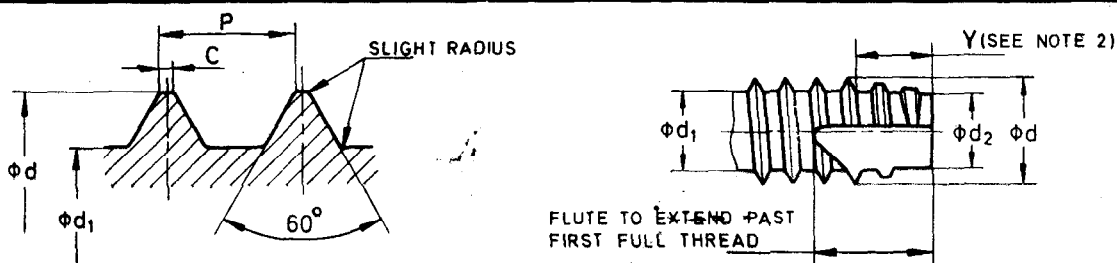
5.1 The tapping screw thread shall be designated by the nomenclature, thread size, type and number of this standard.

5.2 A tapping screw thread of size ST 3·5 and type BT shall be designated as:

Tapping screw thread ST 3·5 — BT — IS 7800

**Table 1 Dimensions for Screw Threads for Type BT Thread Cutting Tapping Screws**  
( Clause 4.1 )

All dimensions in millimetres.



THREAD PROFILE

Screw Thread Size	d		d <sub>1</sub>		d <sub>2</sub>		C	P
	Max	Min	Max	Min	Max	Min		
ST 2·2	2·24	2·13	1·63	1·52	1·47	1·37	0·1	0·79
ST 2·9	2·90	2·79	2·18	2·08	2·01	1·88	0·1	1·05
ST 3·5	3·53	3·43	2·64	2·51	2·41	2·26	0·1	1·27
ST 4·2	4·22	4·09	3·10	2·95	2·84	2·70	0·1	1·41
ST 4·8	4·80	4·65	3·58	3·43	3·30	3·12	0·15	1·59
ST 5·5	5·46	5·31	4·17	3·99	3·86	3·68	0·15	1·81
ST 6·3	6·25	6·10	4·88	4·70	4·55	4·34	0·15	1·81
ST 8	8·00	7·82	6·20	5·99	5·84	5·64	0·15	2·12

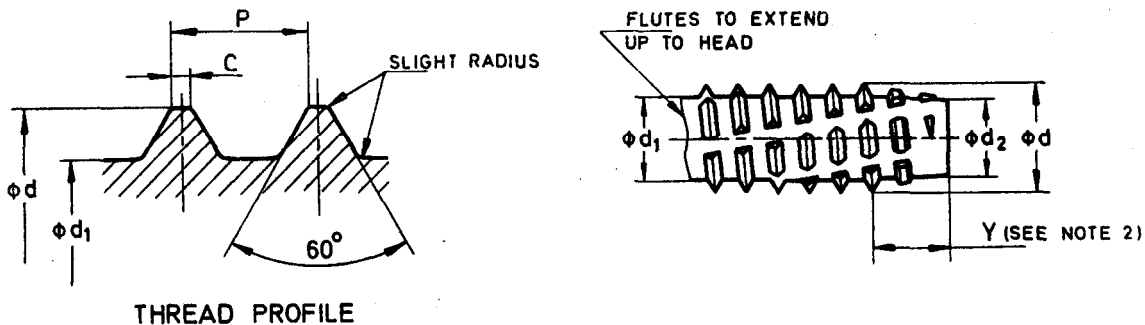
#### NOTES

1. The above dimensions are for uncoated screw threads and may be exceeded after coating.

2. The length of taper point  $Y = 1\frac{1}{2}$  to 2 threads for short screws and 2 to  $2\frac{1}{2}$  threads for long screws. For details of short and long screws, see individual product standards.

**Table 2 Dimensions for Screw Threads for Type Y Thread Cutting Tapping Screws**  
( Clause 4.1 )

All dimensions in millimetres.



Screw Thread Size	d		d <sub>1</sub>		d <sub>2</sub>		C	P
	Max	Min	Max	Min	Max	Min		
ST 2.9	2.95	2.84	2.29	2.18	2.01	1.88	0.127	1.05
ST 3.5	3.58	3.48	2.74	2.62	2.41	2.26	0.152	1.27
ST 4.2	4.27	4.14	3.20	3.05	2.84	2.70	0.203	1.41
ST 4.8	4.88	4.72	3.68	3.53	3.30	3.12	0.203	1.59
ST 5.5	5.54	5.38	4.27	4.09	3.86	3.68	0.203	1.81
ST 6.3	6.35	6.20	4.98	4.80	4.54	4.34	0.203	1.81

**NOTES**

**1** The above dimensions are for uncoated screw threads and may be exceeded after coating.

**2** The length of taper point  $Y = 1\frac{1}{2}$  to 2 threads for short screws and 2 to  $2\frac{1}{2}$  threads for long screws. For details of short and long screws, see individual product standards.

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