

# Slotted pan-head tapping screws

The European Standard EN ISO 1481 : 1994 has the status of a British Standard

UDC 621.882.215.082.8

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This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on  
15 January 1995

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The following BSI references relate to the work on this standard:  
Committee reference GME/9  
Draft for comment 82/70257 DC

ISBN 0 580 23677 3

### Amendments issued since publication

| Amd. No. | Date | Text affected |
|----------|------|---------------|
|          |      |               |
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## National foreword

This British Standard has been prepared under the direction of the Engineering Sector Board and is the English language version of EN ISO 1481 : 1994 *Slotted pan head tapping screws*, published by the European Committee for Standardization (CEN). It is identical with ISO 1481 : 1983, published by the International Organization for Standardization (ISO). EN ISO 1481 : 1994 was produced as a result of international discussions in which the United Kingdom took an active part.

The references clause of EN ISO 1481 states that the International Standards ISO 3269 and ISO 4042 are at the stage of draft. These were subsequently published as follows:

ISO 3269 : 1988 *Fasteners — Acceptance inspection*

ISO 4042 : 1989 *Threaded components — Electroplated coatings*

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

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Descriptors: fasteners, screws, slotted headscrews, tapping screws, dimensions, designation

English version

## Slotted pan head tapping screws

(ISO 1481 : 1983)

Vis à tôle à tête cylindrique large, fendue  
(ISO 1481 : 1983)

Flachkopf-Blechschrauben mit Schlitz  
(ISO 1481 : 1983)

This European Standard was approved by CEN on 1994-06-20. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

### CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

### **Foreword**

This European Standard has been taken over by the Technical Committee CEN/TC 185, Threaded and non-threaded mechanical fasteners and accessories, from the work of ISO/TC 2, Fasteners, of the International Organization for Standardization (ISO).

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 1995, and conflicting national standards shall be withdrawn at the latest by January 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

NOTE. Normative references to international publications are listed in annex ZA (normative).

# Slotted pan head tapping screws

## 1 Scope and field of application

This International Standard specifies the characteristics of slotted pan head tapping screws with thread sizes from ST 2,2 to ST 9,5 inclusive.

## 2 References

ISO 225, *Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions.*

ISO 1478, *Tapping screws thread.*

ISO 2702, *Heat-treated steel tapping screws — Mechanical properties.*

ISO 3269, *Fasteners — Acceptance inspection.*<sup>1)</sup>

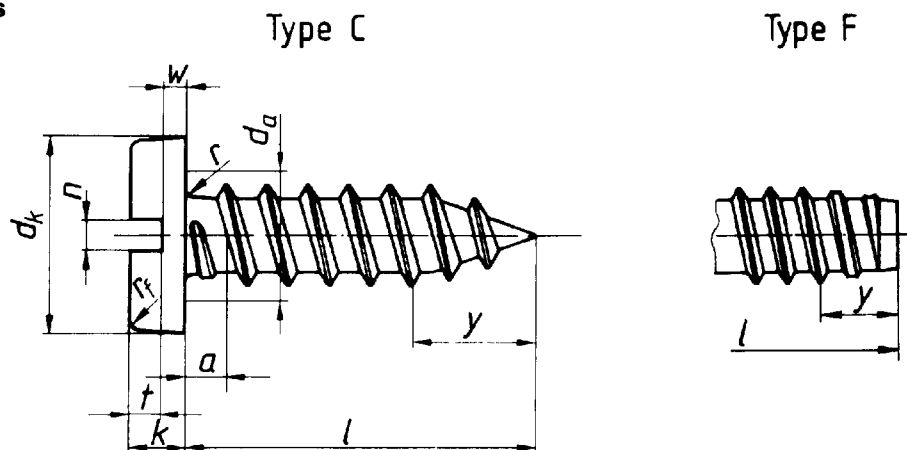
ISO 4042, *Threaded components — Electroplated coatings components.*<sup>1)</sup>

ISO 4759/1, *Tolerances for fasteners — Part 1: Bolts, screws and nuts with thread diameters > 1,6 and < 150 mm and product grades A, B and C.*

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<sup>1)</sup> At present at the stage of draft.

3 Dimensions



Dimensions in millimetres

| Thread size |        | ST 2,2 | ST 2,9 | ST 3,5 | ST 4,2 | ST 4,8 | ST 5,5 | ST 6,3 | ST 8 | ST 9,5 |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|------|--------|
| $P^{1)}$    |        | 0,8    | 1,1    | 1,3    | 1,4    | 1,6    | 1,8    | 1,8    | 2,1  | 2,1    |
| $a^{2)}$    | max.   | 0,8    | 1,1    | 1,3    | 1,4    | 1,6    | 1,8    | 1,8    | 2,1  | 2,1    |
| $d_a$       | max.   | 2,8    | 3,5    | 4,1    | 4,9    | 5,5    | 6,3    | 7,1    | 9,2  | 10,7   |
| $d_k$       | max.   | 4      | 5,6    | 7      | 8      | 9,5    | 11     | 12     | 16   | 20     |
|             | min.   | 3,7    | 5,3    | 6,6    | 7,6    | 9,1    | 10,6   | 11,6   | 15,6 | 19,5   |
| $k$         | max.   | 1,3    | 1,8    | 2,1    | 2,4    | 3      | 3,2    | 3,6    | 4,8  | 6      |
|             | min.   | 1,1    | 1,6    | 1,9    | 2,2    | 2,7    | 2,9    | 3,3    | 4,5  | 5,7    |
| $n$         | nom.   | 0,5    | 0,8    | 1      | 1,2    | 1,2    | 1,6    | 1,6    | 2    | 2,5    |
|             | min.   | 0,56   | 0,86   | 1,06   | 1,26   | 1,26   | 1,66   | 1,66   | 2,06 | 2,56   |
|             | max.   | 0,7    | 1      | 1,2    | 1,51   | 1,51   | 1,91   | 1,91   | 2,31 | 2,81   |
| $r$         | min.   | 0,1    | 0,1    | 0,1    | 0,2    | 0,2    | 0,25   | 0,25   | 0,4  | 0,4    |
| $r_f$       | ref.   | 0,6    | 0,8    | 1      | 1,2    | 1,5    | 1,6    | 1,8    | 2,4  | 3      |
| $t$         | min.   | 0,5    | 0,7    | 0,8    | 1      | 1,2    | 1,3    | 1,4    | 1,9  | 2,4    |
| $w$         | min.   | 0,5    | 0,7    | 0,8    | 0,9    | 1,2    | 1,3    | 1,4    | 1,9  | 2,4    |
| $y$ ref. 3) | Type C | 2      | 2,6    | 3,2    | 3,7    | 4,3    | 5      | 6      | 7,5  | 8      |
|             | Type F | 1,6    | 2,1    | 2,5    | 2,8    | 3,2    | 3,6    | 3,6    | 4,2  | 4,2    |

|      |  | Type C |      | Type F |      |  |   |   |   |   |   |   |   |
|------|--|--------|------|--------|------|--|---|---|---|---|---|---|---|
| nom. |  | min.   | max. | min.   | max. |  |   |   |   |   |   |   |   |
| 4,5  |  | 3,7    | 5,3  | 3,7    | 4,5  |  | — | — | — | — | — | — | — |
| 6,5  |  | 5,7    | 7,3  | 5,7    | 6,5  |  |   |   |   |   |   |   |   |
| 9,5  |  | 8,7    | 10,3 | 8,7    | 9,5  |  |   |   |   |   |   |   |   |
| 13   |  | 12,2   | 13,8 | 12,2   | 13   |  |   |   |   |   |   |   |   |
| 16   |  | 15,2   | 16,8 | 15,2   | 16   |  |   |   |   |   |   |   |   |
| 19   |  | 18,2   | 19,8 | 18,2   | 19   |  |   |   |   |   |   |   |   |
| 22   |  | 21,2   | 22,8 | 20,7   | 22   |  |   |   |   |   |   |   |   |
| 25   |  | 24,2   | 25,8 | 23,7   | 25   |  |   |   |   |   |   |   |   |
| 32   |  | 30,7   | 33,3 | 30,7   | 32   |  |   |   |   |   |   |   |   |
| 38   |  | 36,7   | 39,3 | 36,7   | 38   |  |   |   |   |   |   |   |   |
| 45   |  | 43,7   | 46,3 | 43,5   | 45   |  |   |   |   |   |   |   |   |
| 50   |  | 48,7   | 51,3 | 48,5   | 50   |  |   |   |   |   |   |   |   |

1)  $P$  = pitch of the thread.  
 2) Distance from the underside of the head to the first major diameter of the thread within the specified limits.  
 3) Length of incomplete thread.  
 4) Sizes with lengths marked with a dash (—) in the table shall not be manufactured.

#### 4 Specifications and reference International Standards

|                       |  |            |
|-----------------------|--|------------|
| Material              | Steel, according to ISO 2702   |            |
| Thread                | According to ISO 1478  |            |
| Mechanical properties | According to ISO 2702  |            |
| Tolerances            | Product grade  | A          |
|                       | International Standard   | ISO 4759/1 |
| Finish                | Plain<br>Requirements for electroplating are covered in ISO 4042.<br>If different electroplating requirements are desired or if requirements are needed for other finishes, they should be negotiated between customer and supplier. |            |
| Acceptability         | For acceptance procedure see ISO 3269.   |            |

#### 5 Designation

Example for the designation of a slotted pan head tapping screw with thread size ST 3,5, nominal length  $l = 16$  mm and cone end type C:

**Tapping screw ISO 1481 - ST 3,5 × 16 - C**



**Annex ZA (normative)**

**Normative references to international publications with their relevant European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

| Publication | Year | Title   | EN/HD       | Year |
|-------------|------|---|-------------|------|
| ISO 225     | 1983 | <i>Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions</i> | EN 20225    | 1991 |
| ISO 1478    | 1983 | <i>Tapping screws thread</i>  | EN ISO 1478 | 1994 |

## National annex NA (informative)

### Committees responsible

The United Kingdom participation in the preparation of this European Standard was entrusted by the Engineering Sector Board (E/-) to Technical Committee GME/9, upon which the following bodies were represented:

BEAMA Ltd.  
 British Constructional Steelwork Association Ltd.  
 British Industrial Fasteners Federation  
 British Steel Industry  
 British Steel Industry (Wire Section)  
 Gauge and Tool Makers' Association  
 National Association of Fastener Stockholders  
 Society of Motor Manufacturers and Traders Ltd.  
 Washer Manufacturers' Association of Great Britain

The following bodies also participated in the preparation of the standard, through subcommittees and panels:

British Plastics Federation  
 Portable Electric Tool Manufacturers' Association  
 Small Electrical Appliances Marketing Association  
 Timber Trade Federation

## National annex NB (informative)

### Cross-references

| Publication referred to | Corresponding British Standard   |
|-------------------------|--|
| ISO 225 : 1983          | BS EN 20225 : 1992 <i>Fasteners — Bolts, screws, studs and nuts — Symbols and designations of dimensions</i>   |
| ISO 1478 : 1983         | BS EN ISO 1478 : 1995 <i>Tapping screw threads</i>   |
| ISO 2702 : 1992         | BS EN ISO 2702 : 1995 <i>Heat-treated steel tapping screws — Mechanical properties</i>   |
| ISO 4759-1 : 1978       | BS 6322 <i>Tolerances for fasteners</i><br>Part 1 : 1982 <i>Specification for tolerances of bolts, screws and nuts with thread diameters <math>\geq 1.6</math> mm and <math>\leq 150</math> mm and product grades A, B and C</i> |

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