

# INTERNATIONAL STANDARD

# ISO 15481

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## Cross recessed pan head drilling screws with tapping screw thread

*Vis autoperceuses à tête cylindrique bombée large à empreinte cruciforme,  
avec filetage de vis à tôle*



Reference number  
ISO 15481:1999(E)

## **Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 15481 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

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# Cross recessed pan head drilling screws with tapping screw thread

## 1 Scope

This International Standard specifies the characteristics of cross recessed pan head drilling screws with tapping screw threads from ST2,9 up to and including ST6,3.

## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1478:1999, *Tapping screw thread*.

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

ISO 4042:1999, *Fasteners — Electroplated coatings*.

ISO 4757:1983, *Cross recesses for screws*.

ISO 4759-1:—<sup>2)</sup>, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*.

ISO 10666:1999, *Drilling screws with tapping screw thread — Mechanical and functional properties*.

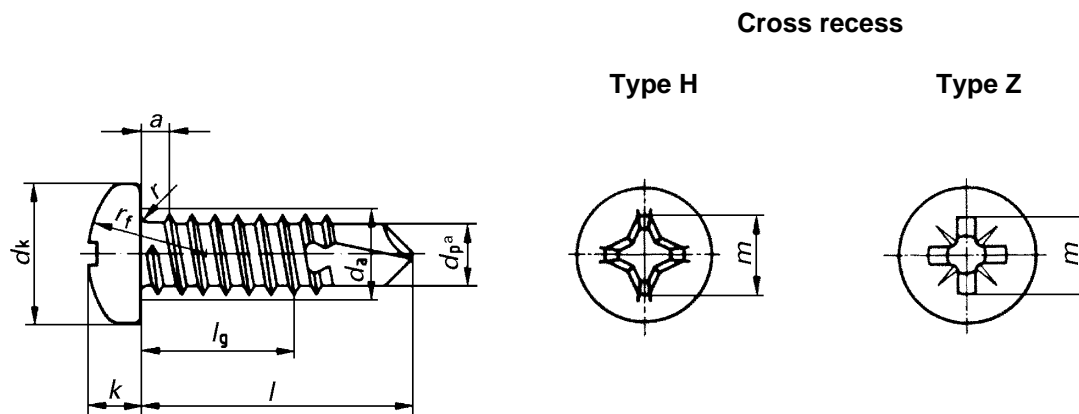
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<sup>1)</sup> To be published. (Revision of ISO 3269:1988)

<sup>2)</sup> To be published. (Revision of ISO 4759-1:1978)

### 3 Dimensions

See Figure 1 and Table 1.



<sup>a</sup> The function of the drilling point (diameter  $d_p$ ) is specified in ISO 10666.

Figure 1

Table 1 — Dimensions

Dimensions in millimetres

Thread size			ST2,9	ST3,5	ST4,2	ST4,8	ST5,5	ST6,3	
$p$	$a$		1,1	1,3	1,4	1,6	1,8	1,8	
$a$	$b$	max.	1,1	1,3	1,4	1,6	1,8	1,8	
$d_a$		max.	3,5	4,1	4,9	5,6	6,3	7,3	
$d_k$		max.	5,6	7,00	8,00	9,50	11,00	12,00	
		min.	5,3	6,64	7,64	9,14	10,57	11,57	
$k$		max.	2,40	2,60	3,1	3,7	4,0	4,6	
		min.	2,15	2,35	2,8	3,4	3,7	4,3	
$r$		min.	0,1	0,1	0,2	0,2	0,25	0,25	
$r_f$		≈	5	6	6,5	8	9	10	
Cross recess	Recess No.		1	2			3		
	Type H	$m$ ref.	3	3,9	4,4	4,9	6,4	6,9	
		Penetration	max.	1,8	1,9	2,4	2,9	3,1	3,6
			min.	1,4	1,4	1,9	2,4	2,6	3,1
		Type Z	$m$ ref.	3	4	4,4	4,8	6,2	6,8
	Penetration		max.	1,75	1,9	2,35	2,75	3,00	3,50
			min.	1,45	1,5	1,95	2,3	2,55	3,05
	Drilling range (sheet or plate thickness) <sup>c</sup>		from	0,7	0,7	1,75	1,75	1,75	2
to		1,9	2,25	3	4,4	5,25	6		
nom.	$l$		$l_g^d$						
	min.	max.	min.						
9,5	8,75	10,25	3,25	2,85					
13	12,1	13,9	6,6	6,2	4,3	3,7			
16	15,1	16,9	9,6	9,2	7,3	5,8	5		
19	18	20	12,5	12,1	10,3	8,7	8	7	
22	21	23		15,1	13,3	11,7	11	10	
25	24	26		18,1	16,3	14,7	14	13	
32	30,75	33,25			23	21,5	21	20	
38	36,75	39,25			29	27,5	27	26	
45	43,75	46,25				34,5	34	33	
50	48,75	51,25				39,5	39	38	
<p><sup>a</sup> <math>P</math> is the pitch of the thread.</p> <p><sup>b</sup> <math>a</math> is the distance from the underside of the head to the first major diameter of the thread.</p> <p><sup>c</sup> In order to determine the nominal length <math>l</math> it may be necessary to add an air gap (if present) to the individual sheet or plate thicknesses.</p> <p><sup>d</sup> <math>l_g</math> is the distance from the underside of the head to the last major diameter of the thread.</p>									

## 4 Specifications and reference International Standards

See Table 2.

**Table 1 — Specifications and reference International Standards**

<b>Material</b>		Steel
	International Standard	ISO 10666
<b>Thread</b>	International Standard	ISO 1478
<b>Cross recesses</b>	International Standard	ISO 4757
<b>Mechanical and functional properties</b>	International Standard	ISO 10666
<b>Tolerances</b>	Product grade	A
	International Standard	ISO 4759-1
<b>Finish</b>		Plain Requirements for electroplating are covered in ISO 4042.
<b>Acceptability</b>		Acceptance procedure is covered in ISO 3269.

## 5 Designation

EXAMPLE A cross recessed pan head drilling screw with thread ST3,5, nominal length  $l = 16$  mm and recess type Z is designated as follows:

**Drilling screw ISO 15481 - ST3,5 × 16 - Z**



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**ICS 21.060.10**

Price based on 4 pages

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