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**Hexagon washer head drilling screws  
with tapping screw thread**

*Vis autoperceuses à tête hexagonale à embase plate, avec filetage de vis  
à tôle*

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ISO 15480:1999

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## 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 15480 was prepared by Technical Committee ISO/TC 2, *Fasteners*.

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Printed in Switzerland

# Hexagon washer head drilling screws with tapping screw thread

## 1 Scope

This International Standard specifies the characteristics of hexagon washer 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 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*.

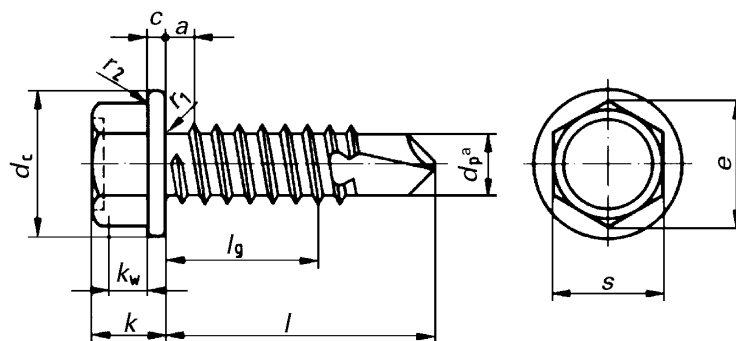
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<sup>1)</sup> To be published. (Revision of ISO 3269:1988)

<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

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Table 1 — Dimensions

Dimensions in millimetres

Thread		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		
$d^c$	max.	6,3	8,3	8,8	10,5	11	13,5		
	min.	5,8	7,6	8,1	9,8	10	12,2		
$c$	min.	0,4	0,6	0,8	0,9	1	1		
$s$	nom. = max.	4,00 <sup>c</sup>	5,50	7,00	8,00	8,00	10,00		
	min.	3,82	5,32	6,78	7,78	7,78	9,78		
$e$	min.	4,28	5,96	7,59	8,71	8,71	10,95		
$k$	nom. = max.	2,8	3,4	4,1	4,3	5,4	5,9		
	min.	2,5	3,0	3,6	3,8	4,8	5,3		
$k_w^d$	min.	1,3	1,5	1,8	2,2	2,7	3,1		
$r_1$	max.	0,4	0,5	0,6	0,7	0,8	0,9		
$r_2$	max.	0,2	0,25	0,3	0,3	0,4	0,5		
Drilling range (sheet or plate thickness) <sup>e</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.	$l$		$l_g^f$						
	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	

<sup>a</sup>  $P$  is the pitch of the thread.

<sup>b</sup>  $a$  is the distance from the underside of the head to the first major diameter of the thread.

<sup>c</sup> Divergence from the width across flats for hexagon tapping screws in accordance with ISO 1479 (5 mm). In the case of hexagon washer head tapping screws (see ISO 7053) the width across flats of 4 mm has been introduced worldwide and also applies in this case.

<sup>d</sup>  $k_w$  is the wrenching height.

<sup>e</sup> In order to determine the nominal length  $l$  it may be necessary to add an air gap (if present) to the individual sheet or plate thickness.

<sup>f</sup>  $l_g$  is the distance from the underside of the head to the last major diameter of the thread.

## 4 Specifications and reference International Standards

See Table 2.

**Table 2 — Specifications and reference International Standards**

<b>Material</b>		Steel
	International Standard	ISO 10666
<b>Thread</b>	International Standard	ISO 1478
<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

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EXAMPLE A hexagon washer head drilling screw with thread ST3,5 and nominal length  $l = 16$  mm is designated as follows:

**Drilling screw ISO 15480 - ST3,5 × 16**

[ISO 15480:1999](#)

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## Bibliography

- [1] ISO 1479:1983, *Hexagon head tapping screws.*
- [2] ISO 7053:1992, *Hexagon washer head tapping screws.*

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