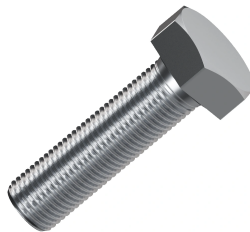


ISO 8676

Hexagon head screws with fine pitch thread



Standard	ISO 8676		
Product Type	This document specifies the characteristics of hexagon head screws, in steel and stainless steel, with metric fine pitch threads M8x1 to M64x4, and with product grades A and B. If in certain cases other specifications are requested, property classes and stainless steel grades can be selected from ISO 898-1 or ISO 3506-1, and dimensional options from ISO 888 or ISO 4753.		
Material	Stainless Steel, Carbon Steel, Alloy Steel		
Property Class	A2-70, A4-80 (ISO 3506-1) · 4.8, 8.8, 10.9 (ISO 898-1)		
Surface Finish	Passivated, Plain, Zinc Plated, Hot Dip Galvanized, Dacromet, Blackened, Phosphate		
Size Range	M8 - M64	Length Range	16-300 mm
Thread	ISO metric fine pitch		

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Carbon steel / Alloy steel mechanical properties to	ISO 898-1:2013
Stainless steel mechanical properties to	ISO 3506-1:2020
Product grade	A / B
Dimensions edition	to be agreed
Length tolerance	to be agreed

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 3506-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
A2-70	700 MPa	Rp0.2 min. 450 MPa	0,4d mm	-	ISO 3506-1
A4-80	800 MPa	Rp0.2 min. 600 MPa	0,3d mm	-	ISO 3506-1

MECHANICAL PROPERTIES

REQUIRED VALUES PER ISO 898-1

Class	Rm min.	Yield requirement	Elongation requirement	Hardness	Source
4.8	420 MPa	Rpf min. 340 MPa (not a test value)	Af min. 0.24	130 - 220 HV	ISO 898-1
8.8	800 MPa	Rp0.2 min. 640 MPa	A min. 12 %	250 - 320 HV	ISO 898-1 (d ≤ M16)
8.8	830 MPa	Rp0.2 min. 660 MPa	A min. 12 %	255 - 335 HV	ISO 898-1 (d > M16)
10.9	1040 MPa	Rp0.2 min. 940 MPa	A min. 9 %	320 - 380 HV	ISO 898-1

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

d Diameter - mm	P Thread Pitch - mm	s (max) Width Across Flats - mm	e (min) Width Across Corners - mm	k Nominal Head Height - mm	d Diameter - mm	P Thread Pitch - mm	s (max) Width Across Flats - mm	e (min) Width Across Corners - mm	k Nominal Head Height - mm
M8	1	13	14.38	5.3	M16	1.5	24	26.75	10
M10	1.25	16	17.77	6.4	M20	2	30	32.95	12.5
M12	1.5	18	20.03	7.5	M24	2	36	39.55	15

FURTHER SIZES IN THIS STANDARD

ALL DIMENSIONS PER THE STANDARD

Not held in stock. Available to order; minimum order quantity applies.

d Diameter - mm	P Thread Pitch - mm	s (max) Width Across Flats - mm	e (min) Width Across Corners - mm	k Nominal Head Height - mm	d Diameter - mm	P Thread Pitch - mm	s (max) Width Across Flats - mm	e (min) Width Across Corners - mm	k Nominal Head Height - mm
M14	1.5	21	23.36	8.8	M42	3	65	71.3	26
M18	2	27	29.56	11.5	M45	3	70	76.95	28
M22	2	34	37.29	14	M48	3	75	82.6	30
M27	2	41	45.2	17	M52	3	80	88.25	33
M30	2	46	50.85	18.7	M56	4	85	93.56	35
M33	2	50	55.37	21	M60	4	90	99.21	38
M36	3	55	60.79	22.5	M64	4	95	104.86	40
M39	3	60	66.44	25					

MARKING
Steel — Required

What	Manufacturer identification mark and the property class symbol (Table 19), for example 8.8
Where	Preferably on the top of the head, embossed or indented; alternatively indented on the side of the head. On flanged products, on the flange
Sizes	d >= 5 mm
Clause	ISO 898-1:2013, 10.3.3.1 Hexagon and hexalobular head bolts and screws

Stainless steel — Required

What	Stainless steel grade, the optional letter L, a hyphen and the property class symbol (Table 13, or Table 14 with a leading zero for reduced loadability), together with the manufacturer identification mark, for example A2-70
Where	Preferably on the top of the head, indented or embossed, or on the side of the head, indented. On bolts and screws with flange, on the flange when the manufacturing process does not allow marking on the top of the head
Sizes	d >= 5 mm
Clause	ISO 3506-1:2020, 10.3.1 Hexagon head bolts and screws

"All hexagon head bolts and screws of nominal thread diameter d >= 5 mm shall be marked for all stainless steel grades and all property classes, with the stainless steel grade in accordance with Clause 6, with the property class symbol in accordance with Table 13 (fasteners with full loadability) or Table 14 (fasteners with reduced loadability that can be tensile tested with b >= 3d in accordance with 9.1), and with the manufacturer's identification mark in accordance with 10.2."

Tabelle 3 of ISO 8676:2011 lists three material columns - steel, stainless steel and non-ferrous metal - and sets no marking of its own. Steel follows ISO 898-1 and stainless steel follows ISO 3506-1, so their marking rules apply.

Note the stainless step-down by diameter: A2-70 and A4-70 for d up to and including 24 mm, A2-50 and A4-50 above 24 mm up to and including 39 mm, and by agreement above that. Steel is 5.6, 8.8 and 10.9 up to and including 39 mm.

Non-ferrous metal materials are those specified in ISO 8839.

Confirm the ordered property class before production.

INSPECTION DOCUMENTS WE CAN ISSUE

EN 10204 3.1 material certificate	Can be included when agreed in the order.
Dimensional inspection report	Can be provided for the agreed inspection scope.
Certificate of conformity	Can be issued against the confirmed order requirements.
Mechanical test report	Available when the required tests are agreed before production.
Chemical analysis report	Available when the material verification scope is agreed.
Coating inspection report	Can record the coating checks agreed for the order.

REFERENCES & NOTES

Note: Dimensional values follow the selected execution standard. Material properties and batch test results are included only when declared or supported by the applicable certificate or test report.

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