

ISO 14581

Hexalobular socket countersunk flat head screws



Standard	ISO 14581		
Product Type	This document specifies the characteristics of hexalobular socket countersunk flat head screws with reduced loadability due to head design, in steel and stainless steel, with metric coarse pitch threads M2 to M10, and with product grade A. If in certain cases other specifications are requested, stainless steel grades can be selected from ISO 3506 - 1, and dimensional options from ISO 888 or ISO 4753. NOTE 1 The reduced loadability (related to the countersunk head dimensions in combination with penetration of the hexalobular socket specified in this document) implies a limitation of ultimate tensile load shown by a specific marking (property class preceded by a zero). The loadability in the head is assumed to be 80 % of that in the thread for all sizes and all property classes; see Table 3. NOTE 2 Hexalobular socket countersunk head screws (high head), with full loadability are specified in ISO 14582, but these products are not interchangeable, because of different head heights. NOTE 3 Particular attention is needed to ensure alignment of the countersunk head with the bearing surface of the countersink in the assembly.		
Material	Stainless Steel, Carbon Steel		
Property Class	A2-70, A4-80 (ISO 3506-1) · 8.8 (ISO 898-1)		
Surface Finish	Passivated, Plain, Blackened, Zinc Plated		
Size Range	M2 - M10	Length Range	6-60 mm
Thread	ISO metric coarse pitch		

BASIS OF SPECIFICATION

WHICH STANDARD GOVERNS WHAT

Dimensions to	ISO 14581:2013
Carbon steel / Alloy steel mechanical properties to	ISO 898-1:2013
Stainless steel mechanical properties to	ISO 3506-1:2020
Product grade	A
Minimum usable thread length	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
8.8	800 MPa	Rp0.2 min. 640 MPa	A min. 12 %	250 - 320 HV	ISO 898-1 (d <= M16)

DIMENSIONAL DATA - SIZES WE SUPPLY

ALL DIMENSIONS PER THE STANDARD

d Diameter - mm	P Thread Pitch - mm	dk (max) Theoretical Head Diameter - mm	dk Head Diameter - mm	dk (min) Head Diameter - mm	k Nominal Head Height - mm	Recess Number	A (ref) Hexalobular Socket A - mm	t (max) Socket Depth - mm	t (min) Socket Depth - mm	b (l <= 125) Thread Length - mm
M3	0.5	6.3	5.5	5.2	1.65	10	2.8	0.83	0.7	25
M4	0.7	9.4	8.4	8.04	2.7	20	3.95	1.53	1.14	38
M5	0.8	10.4	9.3	8.94	2.7	25	4.5	1.51	1.12	38
M6	1	12.6	11.3	10.87	3.3	30	5.6	1.78	1.39	38
M8	1.25	17.3	15.8	15.37	4.65	45	7.95	2.54	2.15	38
M10	1.5	20	18.3	17.78	5	50	8.95	2.8	2.41	38

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	dk (max) Theoretical Head Diameter - mm	dk Head Diameter - mm	dk (min) Head Diameter - mm	k Nominal Head Height - mm	Recess Number	A (ref) Hexalobular Socket A - mm	t (max) Socket Depth - mm	t (min) Socket Depth - mm	b (l <= 125) Thread Length - mm
M2	0.4	4.4	3.8	3.5	1.2	6	1.75	0.64	0.51	25
M2.5	0.45	5.5	4.7	4.4	1.5	8	2.4	0.79	0.66	25
M3.5	0.6	8.2	7.3	6.94	2.35	15	3.35	1.32	1.16	38

MARKING

Carbon steel / Alloy steel

Head marking to ISO 898-1:2013

Stainless steel

Head marking to ISO 3506-1:2020

Marking requirements are set by the material standard named above, not by the product standard. 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.