



उत्पाद मैनुअल
आई एस 1364 (PART 1):2023 के अनुसार
हेक्सागोन हेड बोल्ट, स्कू और नट उत्पाद ग्रेड ए और बी भाग 2
हेक्सागोन हेड बोल्ट्स (आकार सीमा एम1.6 से एम64)
दस्तावेज़ संख्या – पी एम/आई एस 1364 (Part 1)/ 2/ दिसंबर 2023

भारतीय मानक ब्यूरो की स्कीम-1 (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/ प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR
Hexagon Head Bolts, Screws and Nuts of Product Grades A and B
Part 1 Hexagon Head Bolts (Size Range M1.6 to M64)
ACCORDING to
1364 (Part 1):2023
Document No.- PM/ IS 1364 (Part 1)/ 2/ December 2023

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.



PRODUCT MANUAL FOR HEXAGON HEAD BOLTS (SIZE RANGE M 1.6 TO M 64) ACCORDING TO IS 1364 (PART 1): 2023

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1.	Product	:	IS 1364 (Part 1): 2023
	Title	:	Hexagon Head Bolts, Screws and Nuts of Product Grades A and B Part 1 Hexagon Head Bolts (Size Range M1.6 to M64)
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl 5, Table 5 of IS 1364 (Part 1): 2023
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Five pieces of coated and two pieces without coating
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX –C
5.	Possible tests in a day:	:	Please refer ANNEX –D
6.	Scope of the Licence:	:	
	Licence is granted to use Standard Mark as per IS 1364 (Part 1):2023 with the followingscope:		
	Name of the product	:	Hexagon Head Bolts, Screws and Nuts of Product Grades A and B Part 1 Hexagon Head Bolts (Size Range M1.6 to M64)
	Product grade	:	Grade A / Grade B
	Designation	:	(For guidance refer example given in Cl 7 of IS 1364-1)
	Finish	:	(As per Cl 5, Table 5 of IS 1364-1)

ANNEX A

Grouping Guidelines

1. Hexagon Head Bolts of Product Grades A and B are classified based on the following:
 - i. Pitch Thread
 - ii. Length of the Bolts
 - iii. Product grade
 - iv. Material Grade (For Stainless Steel)
 - v. Property Class
 - vi. Surface Condition - As processed (no coating) / Electroplated coatings / Non-electrolytically applied zinc flake coatings / Hot dip galvanized coatings / Other finishes, coatings and/or additional requirements (as agreed between the purchaser and the supplier)
2. Considering the above, the following grouping guidelines shall be followed for GoL/CSoL:
 - i. Sample(s) of lowest thread and highest thread of any length from each Product Grade is to be tested to cover all the sizes for which firm is having complete manufacturing and testing facilities.

Note: In case of Product Grade B having pitch thread M16 to M24, any one size to be tested for dimensional requirement only.
 - ii. Sample of each Material grade (for Stainless Steel) and each Property class is to be tested.
 - iii. Sample of each surface condition is to be tested.

Note: If coated sample is tested for all requirements, corresponding bolts of same designation with no coating (as processed) surface condition may also be covered.
 - iv. In addition to the samples of varieties drawn for independent testing as per the above guidelines, factory test reports of all other varieties intended to be covered in scope of license, shall also be submitted by the manufacturer.
3. The Firm shall declare the varieties of bolts they intend to cover in the Licence. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the manufacturer.
4. During operation of licence, BOs shall ensure that all types of bolts covered in the licence are tested in rotation, to the extent possible.

ANNEX--B**List of Test Equipment***Major test equipment required to test as per the Indian Standard*

Sl. No	Tests used in with clause reference	Test equipment
1	Dimension, Cl. 4	Micrometer Scale Dial gauge Radius gauge
2	Threads and tolerances, Cl. 5, Table 3	Go-No Go gauges Radius gauge, angle gauge Thread gauge
3	Finish, Cl. 5, Table 3	Coat meter Salt spray tester with heater and temperature controller Stop watch / Timer Sulfurdioxide
4	Mechanical Properties, Cl. 5, Table 3	UTM Hardness Tester Impact Tester Optical Microscope Spectrometer Profile Projector Heat treatment furnace Quenching furnace Torque wrenches
13	Surface integrity, Cl. 5, Table 3	MPI Liquid penetrate or other NDT Methods

The above list is indicative only and may not be treated as exhaustive.

ANNEX C

Scheme of Inspection and Testing

1. **LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipment.

2. **TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. **LABELLING AND MARKING** – Hexagon Head Bolts shall be marked as per CL. 6.1 and the labelling on package shall be as per 6.2 of IS 1364 (Part 1): 2023. The Standard Mark as given in the Schedule of the licence shall also be marked on packages the Hexagon Head bolts.

3.1 In addition to the above, the licence no. CM/L-and details of BIS website shall be marked on each package as follows: “For details of BIS certification please visit www.bis.gov.in”

4. **CONTROL UNIT** - Hexagon Head Bolts of same designation and surface condition manufactured in a day under similar process condition from the same consignment of raw materials shall constitute a control unit.

5. **LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

6.1 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.

6. **REJECTIONS** – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement	Levels of Control		
Cl.	Requirement	Test Methods		R: required (or) S: Sub-contracting permitted	No. of Samples	Frequency	Remarks
		Clause	Reference				
5	Material (Mechanical Properties)	7 5	IS 1367-3/ IS 1367-14-1	S	One	Each Consignment	No further testing is required, if accompanied with test certificate or ISI marked.
4	Dimensions	4 (Table 1 to 4)	IS 1364 (Part 1)	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		
5	General Requirements	3&4	IS 1367 (Part 1)/ISO 8992	R			
	Thread requirements	5 to 11	IS 14692-1 / ISO 965-1	R			
	Tolerances	5	ISO 1367 (Part 2)/ ISO 4759-1	R			
5	SURFACE CONDITION (FINISH/ COATING)						
	Electroplating	5 to 7	ISO 4042	R	03	Each batch of surface condition treatment	
	Non - Electrolytically applied zinc flake coating	5 to 7	ISO 10683	R			
	Hot dip galvanized	5 to 7	ISO 10684	R			
5	Surface Integrity	3 & 4	ISO 6157-1 / ISO 6157-3	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity		

NOTE-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

NOTE-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

ANNEX D

Possible tests in a day

1. Dimensions (Cl.4)
2. Threads (Cl.5)
3. Mechanical properties (Cl. 5) viz. Tensile test, Elongation, Yield stress, Proof load, Wedge load, Shear strength, Hardness, Head soundness, Decarburization & surface integrity