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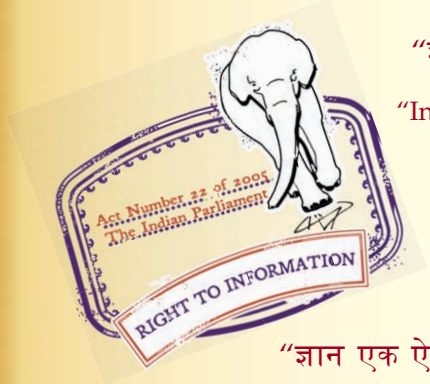
IS 5187 (1972): Specification for flush bolts [CED 15: Builder Hardware]



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SPECIFICATION FOR FLUSH BOLTS

(First Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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November 1972

Indian Standard

SPECIFICATION FOR FLUSH BOLTS

(First Revision)

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AMENDMENT NO. 1 JUNE 1979
TO
IS : 5187 - 1972 SPECIFICATION FOR FLUSH BOLTS
(First Revision)

Alteration

(*Page* 6, *clause* 6.1) — Substitute the following for the existing clause:

'6.1 Flush bolts when assembled shall have smooth and easy working. Brass flush bolts shall be satin or bright-polished. Alternatively they may be nickel or chromium plated as specified in IS : 4827-1968* or copper oxidized in accordance with IS : 1378-1967*, as required by the purchaser. Aluminium flush bolts shall be anodized and the quality of anodized finish shall be not less than Grade AC 10 of IS : 1868 - 1968†'.

(BDC 15)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR FLUSH BOLTS

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 4 August 1972, after the draft finalized by the Builders' Hardware Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 This standard was first published in 1969. After reviewing the standard in the light of comments received from users and manufacturers and the progress made by the industry, the Sectional Committee has prepared this revision which incorporates the provision for use of extruded aluminium alloy and flexibility in the design of flush bolts.

0.3 A number of Indian Standards have already been formulated dealing with different items of builders' hardware, such as tower bolts, sliding door bolts, hinges and mortice locks. This standard lays down the requirements for flush bolts which are fixed on the shutter of cupboards and doors for bolting the shutter flush with the exterior surface. This standard provides guidance to manufacturers for their proper manufacture and to users for getting a product of adequate quality.

0.4 While issuing this standard, the Sectional Committee took note of the acute scarcity of non-ferrous materials like copper, zinc and other alloys in the country and the need for conserving the use of the same in the national interest. However, in view of the demand for hardware items made of these materials in overseas markets, the Sectional Committee has retained them specifically to meet the requirements of export trade. For all indigenous use, it is recommended that hardware items made out of these materials should not be used.

0.5 In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

0.6 This standard is one of the series of Indian Standards on Builders' hardware. Other standards published so far in the series are given on fourth cover page.

0.7 This standard contains clauses **3.2** and **6.1** which call for agreement between the manufacturer and the purchaser.

0.8 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in the standard.

1. SCOPE

1.1 This standard (First Revision) lays down the requirements for flush bolts for use in cupboards and doors.

2. MATERIALS

2.1 The materials used for the manufacture of flush bolts shall be as given in Table 1. Except spring only one material shall be used in the manufacture of all the components of flush bolts.

TABLE 1 REQUIREMENTS FOR MATERIALS FOR FLUSH BOLTS

Sl No.	Item	Material	Example of Suitable Grade in Indian Standard
(1)	(2)	(3)	(4)
i)	Body and plate	a) Cast brass	Grade 3 of IS : 292-1961*
		b) Cast aluminium alloy	IS Designation A-5-M or A-6-M of IS : 617-1959†
		c) Extruded aluminium alloy	IS Designation HE19-WP or HE30-WP of IS : 733-1967‡
ii)	Bolt	a) Cast brass	Grade 3 of IS : 292-1961*
		b) Extruded brass	IS : 319-1968§
		c) Extruded aluminium alloy	IS Designation HE19-WP or HE30-WP of IS : 733-1967‡
iii)	Spring	a) Phosphor bronze	PCuSn 4 of IS : 1385-1968||
		b) Steel strip	Any grade in IS : 2507-1965¶

*Specification for brass ingots and castings (*revised*).

†Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (*revised*).

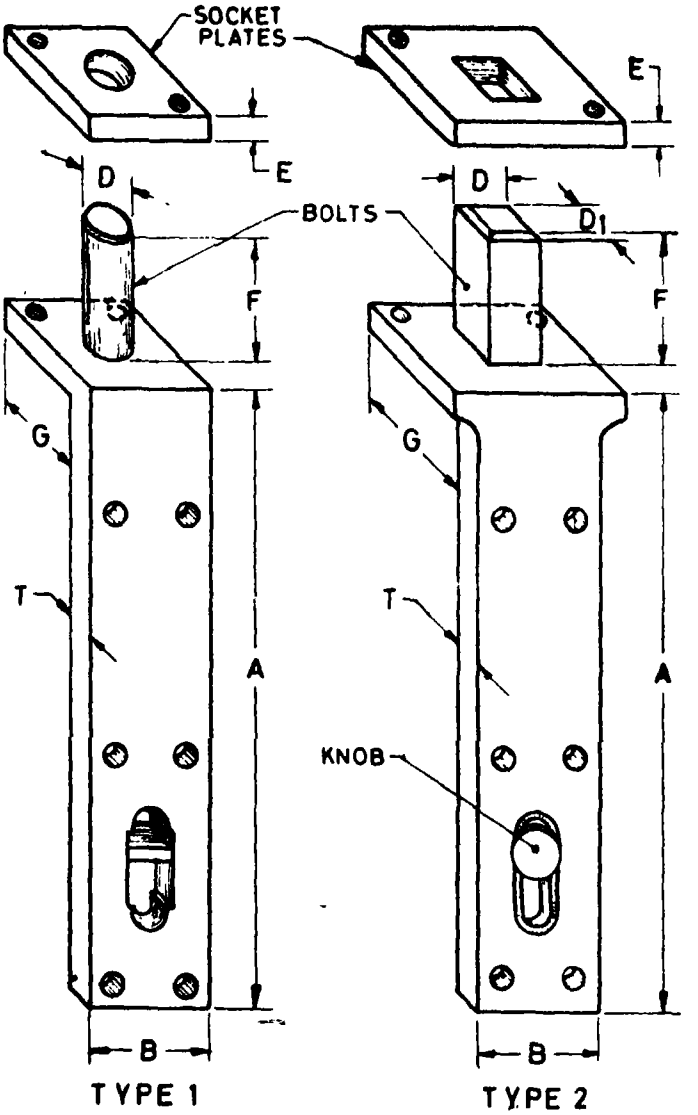
‡Specification for wrought aluminium and aluminium alloys, bars, rods, and sections (for general engineering purposes) (*first revision*).

§Specification for free-cutting brass rods and sections (*second revision*).

||Specification for phosphor bronze rods and bars, sheet and strip, and wire (*first revision*).

¶Specification for cold rolled steel strip for springs.

*Rules for rounding off numerical values (*revised*).



NOTE 1 — Number and position of screw holes are illustrative and shall conform to requirements given in Table 2 and Table 3.

NOTE 2 — The shapes of the component parts are only illustrative and are not intended to limit the design. Movement of the bolt may be either by means of a knob or a lever.

FIG. 1 FLUSH BOLTS

3. TYPES, SIZES AND SHAPES

3.1 Typical details of two types of flush bolts are shown in Fig. 1.

3.2 Flush bolts may be manufactured in sizes and shapes other than those given in Fig. 1 by mutual agreement between the manufacturer and the purchaser.

4. MANUFACTURE AND CONSTRUCTION

4.1 When the rod is completely in its maximum bolting position it shall be retained in that position by the spring and the working shall be ensured in continuous usage.

4.2 The length of the bolt shall be such that, when the bolt is pulled down, the top of the bolt shall be either flush or not more than half the thickness of lip down than top of the lip face. The top of the bolt shall be given a taper of 45° to enable easy pull or push.

5. DIMENSIONS AND TOLERANCES

5.1 Dimensions — The dimensions of flush bolts shall be as given in Table 2 and Table 3 read with Fig. 1.

5.2 Tolerance — The tolerance on dimensions shall be as specified in Table 2 and Table 3

6. WORKMANSHIP AND FINISH

6.1 Flush bolts when assembled shall have smooth and easy working. Brass flush bolts shall be satin or bright polished, alternatively they may be nickel or chromium plated as specified in IS : 4827-1968* or copper oxidized in accordance with IS : 1378-1967† as required by the purchaser. Aluminium flush bolts shall be anodized and the quality of anodized finish shall be not less than Grade AC 15 of IS : 1868-1968‡.

7. MARKING

7.1 Each flush bolt shall bear the manufacturer's name or trade-mark.

---

*Specification for electroplated coatings of nickel and chromium on copper and copper alloys

†Specification for oxidized-copper finishes (*first revision*).

‡Specification for anodic coatings on aluminium (*first revision*).

TABLE 2 DIMENSIONS OF FLUSH BOLTS (TYPE 1)

(*Clauses* 5.1 *and* 5.2, and *Fig.* 1)

All dimensions in millimetres.

SIZE	FACE PLATE			THROW OF BOLT	BOLT DIA	LIP EXTENSION	NO. OF SCREW HOLES		SIZE OF SCREW HOLE FOR WOOD SCREW NO.	SOCKET PLATE	
	Length	Breadth	Thickness				Bolt Plate	Socket Plate		Thickness	Length and Breadth
	A *Min*	*B* *Min*	*T* *Min*	*F* *Min*	*D*	*G* *Min*				*E* *Min*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
100	100	20	4	20	8 ± 1	20	4	2	6	4	The minimum dimensions shall not be less than the lip extension of the face plate.
150	150	20	4	25	8 ± 1	30	4	2	6	4	
200	200	20	4	30	8 ± 1	50	4	2	6	4	

TABLE 3 DIMENSIONS OF FLUSH BOLTS (TYPE 2)

(*Clauses* 5.1 *and* 5.2, and *Fig.* 1)

All dimensions in millimetres.

SIZE	FACE PLATE			THROW OF BOLT	LIP EXTENSION	DIMENSION OF BOLT		NO. OF SCREW HOLES		SIZE OF SCREW HOLE FOR WOOD SCREW No.	SOCKET PLATE	
	Length	Breadth	Thickness								Thickness	Length and Breadth
						D	D_1	Bolt Plate	Socket Plate			
	A *Min*	*B* *Min*	*T* *Min*	*F* *Min*	*G* *Min*						*E* *Min*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
100	100	20	4	15	20	8 ± 1	8 ± 1	4	2	6	4	The minimum dimensions shall not be less than the lip extension of the face plate.
150	150	20	4	15	30	8 ± 1	8 ± 1	4	2	6	4	
200	200	20	4	15	30	8 ± 1	8 ± 1	4	2	6	4	
250	250	20	4	15	30	8 ± 1	10 ± 1	5 (*Min*)	2	6	4	
300	300	20	4	15	30	8 ± 1	10 ± 1	5 (*Min*)	2	6	4	

7.1.1 Each flush bolt may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

8. PACKING

8.1 Each flush bolt shall be wrapped in suitable paper or polyethylene and packed in cardboard box containing 10 pieces each. The box shall be labelled with manufacturer's name and other particulars of quantity.

9. SAMPLING AND CRITERION FOR CONFORMITY

9.1 The method of selecting flush bolts and the criterion for conformity shall be as given in Appendix A.

APPENDIX A

(*Clause* 9.1)

SAMPLING OF FLUSH BOLTS

A-1. SCALE OF SAMPLING

A-1.1 Lot — In any consignment, all the flush bolts of the same type and size and manufactured at the same time, shall be grouped together to constitute a lot.

A-1.2 The number of flush bolts, to be selected from a lot, shall depend upon the size of the lot and shall be in accordance with col 1 and 2 of Table 4.

A-1.3 These flush bolts shall be selected at random from at least 10 percent of the packets subject to a minimum of three, equal number of flush bolts being selected from each such packet.

A-2. NUMBER OF TESTS

A-2.1 All the flush bolts selected as in **A-1.2** shall be checked for dimensional requirements (*see* **5**) and for finish (*see* **6**). Any flush bolt which fails to satisfy the requirements of dimensions or finish or both shall be considered as a defective flush bolt.

A-3. CRITERION FOR CONFORMITY

A-3.1 A lot shall be considered as conforming to the requirements of this standard if the number of defective bolts among those tested does not exceed the corresponding number given in col 3 of Table 4; otherwise it shall be considered as not conforming to the requirements of this standard.

TABLE 4 SCALE OF SAMPLING AND CRITERION FOR CONFORMITY

(*Clauses* A-1.2 *and* A-3.1)

Lot Size	Sample Size	Permissible Number of Defective Flush Bolts
(1)	(2)	(3)
Up to 200	15	0
201 to 300	20	1
301 ,, 500	30	2
501 ,, 800	40	2
801 and above	55	3

NOTE — The sampling plan given here is such that lots with 1·5 percent or less defectives will be accepted most of the times.

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