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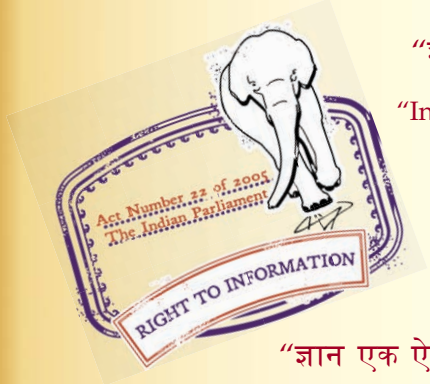
IS 3843 (1995): Steel back flap hinges -Specification [CED 15: Builder Hardware]



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"Knowledge is such a treasure which cannot be stolen"

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IS 3843 : 1995
(Reaffirmed 2002)

भारतीय मानक

इस्पात के पिछले पल्ले के कब्जे — विशिष्टि

(दूसरा पुनरीक्षण)

Indian Standard

STEEL BACK FLAP HINGES — SPECIFICATION

(Second Revision)

UDC 685·36

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

July 1995

Price Group 3

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Builders Hardware Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published in 1966 and revised in 1985. The present revision has been undertaken to incorporate the necessary modifications as a result of experience gained during the use of this standard. This revision of standard makes reference to the latest Indian Standards for various types of materials specified therein consequently. The major changes in the revision include:

a) Tolerance for width of knuckles for all types and sizes;

b) Addition of two new sizes and requirements thereof; and

c) Revised criteria for scale of sampling and criteria for conformity, it also includes the modifications in the dimensions given in Table 1 and Table 2.

Technical committee responsible for the formulation of this standard is given at Annex B.

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 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
STEEL BACK FLAP HINGES — SPECIFICATION
(Second Revision)

1 SCOPE

This standard covers types and the requirements regarding materials, dimensions, manufacture and finish of steel back flap hinges.

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TYPES

Steel back flap hinges shall be of the following two types (*see also* Fig. 1):

a) Light weight hinges (*see* Table 1), and
b) Heavy weight hinges (*see* Table 2).

4 MATERIALS

Materials used for the manufacture of steel back flap hinges shall comply with the requirements given in Table 3.

5 DIMENSIONS AND TOLERANCES

5.1 The dimensions of the various types of hinges and tolerances thereon shall be as given in Table 1 and Table 2.

5.2 The size of the back flap hinge shall be denoted by length A of the hinge.

6 MANUFACTURE

6.1 General

Back flap hinges shall be well made and shall be free from flaws and defects of any kind. All hinges shall be cut clean and square and shall be provided with mild steel hinge pins. The hole for the hinge pin shall be central and square to the knuckles. All sharp edges and corners shall be removed.

6.2 Knuckles

The sides of knuckles shall be straight, at right angle and shall flush with the flap. The movement of the hinges shall be free and easy, and working shall not have any play or shake. The width of knuckles in the hinges of different sizes shall be as specified in Table 1 and Table 2.

6.3 Pins

The hinge pins shall be of diameters as specified in Table 1 and Table 2 for different types and sizes of hinges, and shall fit inside the knuckles firmly and rivetted head shall be well formed so as not to allow any play or shake and shall allow easy movement of the hinges, but shall not cause looseness.

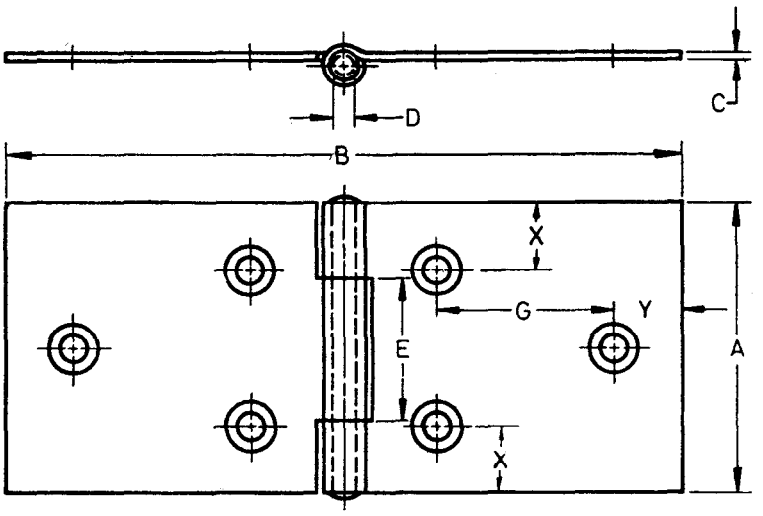

FIG. 1 TYPICAL ILLUSTRATION OF BACK FLAP HINGE

Table 1 Dimensions of Light Weight Steel Back Flap Hinges

(*Clauses* 3, 5.1, 6.2, 6.4.2 *and* 6.4.3)

All dimensions in millimetres.

Size of Hinge	Length *A*	Breadth *B*	Thickness of Flap *C*	Dia of Hinge Pin *D*	Width of Knuckles *E*	No. of Screw Holes	Screw No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
20	20 ± 0.5	70 ± 1	1.6 ± 0.05	3.15 ± 0.05	15 ± 0.5	4	6
25	25 ± 0.5	73 ± 1	1.6 ± 0.05	3.15 ± 0.05	15 ± 0.5	6	8
30	30 ± 0.5	81 ± 1	1.6 ± 0.05	3.55 ± 0.05	20 ± 0.5	6	8
35	35 ± 0.5	85 ± 1	1.6 ± 0.05	3.55 ± 0.05	15 ± 0.5	6	8
40	40 ± 0.5	86 ± 1	1.6 ± 0.05	3.55 ± 0.05	20 ± 0.5	6	8
45	45 ± 0.5	98 ± 1	1.7 ± 0.05	4.00 ± 0.05	25 ± 0.5	6	9
50	50 ± 0.5	106 ± 1	1.7 ± 0.05	4.00 ± 0.05	25 ± 0.5	6	8
60	60 ± 0.5	130 ± 1	1.8 ± 0.05	4.50 ± 0.05	30 ± 0.5	6	9
65	65 ± 0.5	151 ± 1	1.8 ± 0.05	4.50 ± 0.06	30 ± 0.5	6	10
75	75 ± 0.5	166 ± 1	1.9 ± 0.05	5.00 ± 0.06	30 ± 0.5	6	10

Table 2 Dimensions of Heavy Weight Steel Back Flap Hinges

(*Clauses* 3, 5.1, 6.2, 6.4.2 *and* 6.4.3)

All dimensions in millimetres.

Size of Hinge	Length *A*	Breadth *B*	Thickness of Flap *C*	Dia of Hinge Pin *D*	Width of Knuckles *E*	No. of Screw Holes	Screw No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
25	25 ± 0.5	76 ± 1	1.6 ± 0.06	4.00 ± 0.05	12 ± 0.5	6	8
40	40 ± 0.5	91 ± 1	1.8 ± 0.06	4.00 ± 0.05	20 ± 0.5	6	8
50	50 ± 0.5	106 ± 1	1.9 ± 0.06	4.50 ± 0.05	25 ± 0.5	6	10
65	65 ± 0.5	151 ± 1	2.4 ± 0.06	5.00 ± 0.05	30 ± 0.5	6	10
75	75 ± 0.5	166 ± 1	2.4 ± 0.06	5.00 ± 0.05	30 ± 0.5	6	10

Table 3 Requirements for Materials for Steel Back Flap Hinges

(*Clause* 4)

Sl No.	Part	Material	Suitable Grade in Indian Standard
(1)	(2)	(3)	(4)
i)	Flap	Steel	Grade A of IS 2062 : 1992 or Grade O of IS 1079 : 1988 or Grade O of Temper of H/2 or H/4 of IS 513 : 1994
ii)	Pin	Mild steel wire	Grade H/2 or H/4 of IS 280 : 1978

6.4 Screw Holes

6.4.1 All screw holes shall be clean and suitable for countersunk head wood screws conforming to IS 6760 : 1972.

6.4.2 *Size*

The screw holes shall be suitable for countersunk head wood screws of the numbers specified in Table 1 and Table 2 for different types and sizes of hinges.

6.4.3 *Number of Holes*

In different sizes of hinges, the holes shall be punched in numbers specified in Table 1 and Table 2.

6.4.4 *Position of Holes*

The centre line of the holes shall be parallel to the pin. When only two screw holes in each flap are provided, they shall be in one line, but when more than two holes are provided in each flap they shall be distributed in triangular manner as shown in Fig. 1. The distance from the end of the flap and centre-to-centre distance of holes for all types of hinges shall be as follows:

X (minimum)	
For hinges up to 30 mm size	5 mm
For hinges of 35 to 50 mm size	10 mm
For hinges of 60 mm size and above	15 mm
Y (minimum)	
For hinges up to 30 mm size	5 mm
For hinges of 35 to 50 mm size	10 mm
For hinges of 60 mm size and above	15 mm
G (minimum)	
For hinges up to 25 mm size	15 mm
For hinges of 30, 35 and 40 mm size	20 mm
For hinges of 45 and 50 mm size	25 mm
For hinges of 60 mm size and above	30 mm

where

X or *Y* = distance of end hole from the end of the flap measured parallel or perpendicular to the pin, and

G = centre-to-centre distance of two screw holes measured perpendicular to the pin.

7 FINISH

Unless specified otherwise, the hinges shall be oxidized or finished bright with smooth and rust free surface.

8 MARKING

8.1 Each hinge shall be legibly and indelibly marked with the name of the manufacturer or his trade mark and type of hinge.

8.2 BIS Certification Marking

The product may also be marked with Standard Mark.

8.2.1 The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9 PACKING

9.1 Hinges shall be packed in cardboard boxes or in any other approved packing in the following quantities:

Size up to 25 mm	30 pieces in each package
Size over 25 up to and including 75 mm	10 pieces in each package

NOTE — Hinges shall be packed in multiples of 5, if required by the purchaser.

9.2 Each package shall be labelled showing the following particulars:

a) Type of hinge,
b) Size of hinge,
c) Quantity of hinges, and
d) Name of the manufacturer or his trade-mark.

10 SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

10.1 Scale of Sampling

10.1.1 *Lot*

In any consigment, all the hinges of the same type, same size and belonging to the same batch of manufacture shall be grouped together to constitute a lot.

10.1.2 For ascertaining the conformity of the material to the requirements of this specification, samples shall be tested from each lot separately.

10.1.3 The number of hinges to be selected from a lot shall depend on the size of the lot and shall be in accordance with col 1 and 2 of Table 4.

10.1.3.1 These hinges shall be selected at random from at least 10 percent of the packages subject to a minimum of 3, equal number of hinges being selected from each such package. In order to ensure the randomness of selection, procedures given in IS 4905 : 1968 may be followed.

10.2 Number of Tests and Criteria for Conformity

10.2.1 All the hinges shall be selected according to **10.1.3** shall be examined for dimensions (*see* **5**), defects in manufacture (*see* **6**) and finish (*see* **7**). Any hinge failing to satisfy one or more of these requirements shall be considered as defective.

10.2.2 The lot shall be declared as conforming to the requirements of this specification if number of defectives found in the sample is less than or equal to the corresponding acceptance number given in col 3 of Table 4. If the number of defectives is greater than or equal to rejection number given in col 4 of Table 4 the lot shall be deemed as not meeting the requirements of this specification.

Table 4 Scale of Sampling and Permissible Number of Defectives

(*Clauses* 10.1.3 *and* 10.2.2)

No. of Hinges in the Lot	Sample Size	Acceptance Number	Rejection Number
(1)	(2)	(3)	(4)
Up to 50	13	1	2
51 to 90	20	1	2
91 to 150	32	2	3
151 to 280	50	3	4
281 to 500	80	5	6
501 to 1 200	125	7	8
1 201 and above	200	10	11

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*	*IS No.*	*Title*
280 : 1978	Mild steel wire for general engineering purposes (*third revision*) (Amendment 1) Reaffirmed in 1992	2062 : 1992	Steel for general structural purposes (*fourth revision*) (Supersedes IS 226 : 1975)
513 : 1994	Cold-rolled low carbon steel sheets and strips (*fourth revision*)	4905 : 1968	Methods for random sampling (Amendment 1) Reaffirmed in 1991
1079 : 1988	Hot-rolled carbon steel sheet and strip (*fourth revision*) (Amendment 1) Reaffirmed in 1992	6760 : 1972	Slotted countersunk head wood screws (Amendment 2) (Reaffirmed in 1988)

ANNEX B
(*Foreword*)

COMMITTEE COMPOSITION

Builders Hardware Sectional Committee, CED 15

Chairman

SHRI P. KRISHNAN
103, Charak Sadan, Vikaspuri,
New Delhi - 110018

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SHRI J. JAYAPRAKASH SHRI J. RAGHURAM (*Alternate*)	J. H. Aluminium Co Ltd, Calcutta
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SHRI T. R. SEHGAL SHRI M. K. BHATT (*Alternate*)	Development Commissioner, SSI, Ministry of Industries, New Delhi
SHRI H. S. SETHI	Garnish Traders Pvt Ltd, New Delhi
SUPERINTENDING ENGINEER EXECUTIVE ENGINEER (*Alternate*)	Tamil Nadu Housing Board, Madras
SHRI SURESH CHAND	Central Building Research Institute (CSIR), Roorkee
SHRI SAHIB SINGH VIRDI SHRI S. MOWJEE (*Alternate*)	M.C. Mowjee and Co Pvt Ltd, Calcutta
SHRI SUSHIL TAWAR	Allied Anodisers, Calcutta
SHRI J. R. MEHTA, Director (Civ Engg)	Director General, BIS (*Ex-officio Member*)

Member-Secretary

HEMANT KUMAR
Joint Director (Civ Engg), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition.

This Indian Standard has been developed from Doc No: CED 15 (5484).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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