

भारतीय मानक
Indian Standard

IS 1341 : 2018

इस्पात के टक्करदार कब्जे — विशिष्टि

(छठा पुनरीक्षण)

Steel Butt Hinges — Specification

(Sixth Revision)

ICS 77.140.20; 91.190

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Builder's Hardware Sectional Committee, CED 15

FOREWORD

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

This standard was first published in 1959 and subsequently revised in 1962, 1970, 1976, 1981 and 1992.

In this revision the following changes have been made:

- a) Unequal flap hinges (light weight and medium weight) have been introduced (*see 3*);
- b) Option for hinges without holes have been introduced (*see 6.4*);
- c) Inclusion of application guidelines have been introduced (*see Annex B*);
- d) Preventive measures required to be adopted by the consumers have been introduced (*see Annex C*); and
- e) Marking requirements have been modified (*see 8.1*).

The composition of the Committee responsible for the formulation of this standard is given in Annex E.

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 BUTT HINGES — SPECIFICATION

(Sixth Revision)

1 SCOPE

This standard lays down the requirements for materials, dimensions, manufacture and finish of steel butt hinges.

NOTE — The requirements of non-ferrous metal butt hinges has been covered in IS 205.

2 REFERENCES

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

3 TYPES

Steel butt hinges shall be of the following types:

- a) Light weight 'LW' steel butt hinges (see Table 2)
- b) Light weight 'LWU' unequal flap hinges (see Table 3)
- c) Medium weight 'MWU' unequal flap hinges (see Table 4)
- d) Medium weight 'MW' steel butt hinges (see Table 5)
- e) Broad type 'BR' steel butt hinges (see Table 6)
- f) Square type 'SQ' steel butt hinges (see Table 7)
- g) Heavy weight (Type 1) 'HW1' steel butt hinges (see Table 8)
- h) Heavy weight (Type 2) 'HW2' steel butt hinges (see Table 9)

4 MATERIALS

Materials used for the manufacture of steel butt hinges shall comply with the requirements given in Table 1.

**Table 1 Requirements for Materials for
Steel Butt Hinges**
(Clause 4)

Sl No.	Part	Material	Suitable Grade in Indian Standard
(1)	(2)	(3)	(4)
i)	Flap	Mild steel	Grade HR1 of IS 1079 or Grade CR1 of IS 513 (Part 1)
ii)	Pin	Mild steel wire	Minimum of 1/4 H as per IS 280

5 DIMENSIONS AND TOLERANCES

5.1 Typical shapes of steel butt hinges are shown in Fig. 1 and Fig. 2. The leading dimensions of various types of hinges and tolerances thereon shall be as given in Tables 2 to 9.

5.2 The size of the hinge shall be denoted by the length (A) of the hinge.

6 MANUFACTURE

6.1 General

Hinges shall be well made and shall be free from flaws and defects of all kinds. 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. Application guidelines of the hinges (for reference only) is given at Annex B.

6.2 Knuckles

6.2.1 The sides of knuckles shall be straight and at right angle to the flap. The movement of the hinges shall be free and easy, and working shall not have any play or shake.

6.2.2 The number of knuckles in the hinge of different sizes shall be as specified in Tables 2 to 9.

6.3 Pins

The hinge pin shall be of diameters as specified in Tables 2 to 10 for different types and sizes of hinges. It shall fit inside the knuckle firmly and riveted head shall be well formed so as not to allow any play or shake. It shall allow easy movement of the hinge, but shall not cause looseness.

6.4 Screw Holes

All screw holes shall be clean and countersunk to suit countersunk head of wood screws conforming to IS 6760. The screw holes shall be of the numbers specified in Tables 2 to 9 for different types and sizes of hinges.

Steel butt hinges without screw holes may be supplied on specific customer requirements. The requirements for screw holes in **6.4**, **6.4.1**, **6.4.2** and **6.4.2.1** and col (7) and col (8) of Tables 2 to 9 shall not be applicable in the case of steel butt hinges without screw holes.

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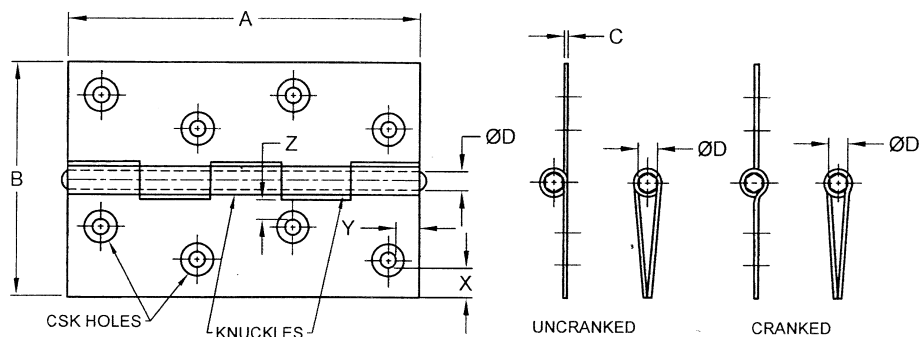


FIG. 1 TYPICAL SKETCH FOR EQUAL FLAP MILD STEEL BUTT HINGES

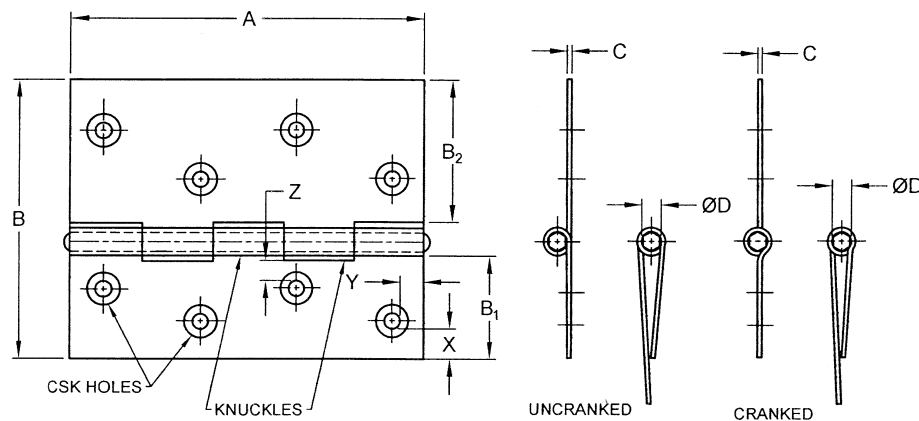


FIG. 2 TYPICAL SKETCH FOR UNEQUAL FLAP MILD STEEL BUTT HINGES

6.4.1 Number of Holes

The number of holes to be punched in different types of hinges shall be as specified in Tables 2 to 9.

6.4.2 Position of Holes

The centre line of the holes shall be parallel to the pin. In the heavy and medium weight hinges, 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 zig-zag manner as shown in Fig. 1. In the light weight hinges, up to three holes may be provided in one line, but when more than three holes are provided they shall be distributed in zig-zag manner as shown in Fig. 1. In broad and

Table 2 Dimensions of Light Weight Steel Butt Hinges

(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth	Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
(1)	mm (2)	A mm (3)	B mm (4)	C mm (5)	D mm (6)	(7)	(8)	(9)
i)	15	15 ± 0.5	18 ± 1	0.63 ± 0.04	2.00 ± 0.08	3	4	2
ii)	25	25 ± 0.5	22 ± 1	0.71 ± 0.04	2.00 ± 0.08	3	4	2
iii)	40	40 ± 0.5	25 ± 1	0.80 ± 0.04	2.50 ± 0.08	3	4	3
iv)	50	50 ± 0.5	30 ± 1	0.90 ± 0.04	2.80 ± 0.08	3	4	3
v)	65	65 ± 0.5	35 ± 1	1.00 ± 0.04	3.15 ± 0.08	5	6	4
vi)	75	75 ± 0.5	40 ± 1	1.12 ± 0.04	3.15 ± 0.08	5	6	5
vii)	100	100 ± 0.5	50 ± 1	1.25 ± 0.06	3.55 ± 0.08	5	8	6

NOTE — Dimension B is for uncranked hinge. For cranked hinge, this dimension will increase accordingly.

Table 3 Dimensions and Tolerances of Light Weight Unequal Flap Hinges
(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth			Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
			<i>A</i>	<i>B</i>	<i>B₁</i>					
	mm	mm	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)			(5)	(6)	(7)	(8)	(9)
i)	75 × 13 × 19	75 ± 0.5	39 ± 1	13 ± 0.5	19 ± 0.5	1.4 ± 0.08	2.55 ± 0.08	5	6	5
ii)	100 × 13 × 19	100 ± 0.5	40 ± 1	13 ± 0.5	19 ± 0.5	1.4 ± 0.08	2.55 ± 0.08	5	8	5

Table 4 Dimensions and Tolerances of Medium Weight Unequal Flap Hinges
(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth			Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
			<i>A</i>	<i>B</i>	<i>B₁</i>					
	mm	mm	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)			(5)	(6)	(7)	(8)	(9)
i)	75 × 13 × 19	75 ± 0.5	39 ± 1	13 ± 0.5	19 ± 0.5	1.75 ± 0.08	2.8 ± 0.08	5	6	5
ii)	100 × 13 × 19	100 ± 0.5	40 ± 1	13 ± 0.5	19 ± 0.5	1.75 ± 0.08	3.55 ± 0.08	5	8	5

Table 5 Dimensions for Medium Weight Mild Steel Butt Hinges
(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth	Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	20	20 ± 0.5	20 ± 1	1.20 ± 0.06	2.00 ± 0.08	3	4	3
ii)	25	25 ± 0.5	25 ± 1	1.25 ± 0.06	2.24 ± 0.08	3	4	4
iii)	40	40 ± 0.5	30 ± 1	1.40 ± 0.06	2.50 ± 0.08	3	4	5
iv)	50	50 ± 0.5	37 ± 1	1.50 ± 0.06	3.15 ± 0.08	3	4	6
v)	65	65 ± 0.5	42 ± 1	1.60 ± 0.06	3.55 ± 0.08	5	6	6
vi)	75	75 ± 0.5	47 ± 1	1.70 ± 0.06	4.00 ± 0.08	5	6	7
vii)	90	90 ± 0.5	52 ± 1	1.80 ± 0.06	5.00 ± 0.08	5	6	7
viii)	100	100 ± 0.5	58 ± 1	1.90 ± 0.06	5.60 ± 0.08	5	8	8
ix)	125	125 ± 0.5	65 ± 1	2.12 ± 0.08	5.60 ± 0.08	5	8	9
x)	150	150 ± 0.5	75 ± 1	2.24 ± 0.08	6.30 ± 0.08	5	8	10

NOTE — Dimension *B* is for uncranked hinge. For cranked hinge, this dimension will increase accordingly.

Table 6 Dimensions of Broad Type Steel Butt Hinges
(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth	Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	50	50 ± 0.5	45 ± 1	1.50 ± 0.06	4.00 ± 0.08	3	4	6
ii)	75	75 ± 0.5	60 ± 1	1.70 ± 0.06	5.00 ± 0.08	5	6	7
iii)	100	100 ± 0.5	70 ± 1	1.90 ± 0.06	5.60 ± 0.08	5	8	8
iv)	125	125 ± 0.5	80 ± 1	2.12 ± 0.08	6.30 ± 0.08	5	8	10
v)	150	150 ± 0.5	100 ± 1	2.24 ± 0.08	7.10 ± 0.08	5	8	10

NOTE — Dimension *B* is for uncranked hinge. For cranked hinge, this dimension will increase accordingly.

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Table 7 Dimensions of Square Type Steel Butt Hinges

(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth	Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>			
	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	50	50 ± 0.5	50 ± 1	1.70 ± 0.06	5.00 ± 0.08	3	4	6
ii)	65	65 ± 0.5	65 ± 1	1.80 ± 0.06	5.60 ± 0.08	5	6	8
iii)	75	75 ± 0.5	75 ± 1	2.00 ± 0.06	5.90 ± 0.08	5	6	8
iv)	90	90 ± 0.5	90 ± 1	2.25 ± 0.06	5.90 ± 0.08	5	6	9
v)	100	100 ± 0.5	100 ± 1	2.50 ± 0.08	6.30 ± 0.08	5	8	9

NOTE — Dimension *B* is for uncranked hinge. For cranked hinge, this dimension will increase accordingly.

Table 8 Dimensions of Heavy Weight (Type 1) Steel Butt Hinges

(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth	Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>			
	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	50	50 ± 0.5	40 ± 1	2.50 ± 0.06	4.00 ± 0.08	3	6	8
ii)	65	65 ± 0.5	50 ± 1	2.80 ± 0.06	5.00 ± 0.08	3	6	8
iii)	75	75 ± 0.5	60 ± 1	3.15 ± 0.06	5.00 ± 0.08	5	6	9
iv)	90	90 ± 0.5	65 ± 1	3.15 ± 0.06	5.00 ± 0.08	5	6	9
v)	100	100 ± 0.5	75 ± 1	3.55 ± 0.08	6.30 ± 0.08	5	8	12
vi)	125	125 ± 0.5	90 ± 1	4.00 ± 0.08	7.10 ± 0.08	5	8	12
vii)	150	150 ± 0.5	100 ± 1.5	4.50 ± 0.10	8.00 ± 0.08	5	10	12
viii)	175	175 ± 0.5	115 ± 1.5	5.00 ± 0.10	9.00 ± 0.08	5	10	14
ix)	200	200 ± 0.5	130 ± 1.5	6.00 ± 0.10	10.00 ± 0.08	5	10	14

NOTE — Dimensions *B* is for uncranked hinge. For cranked hinge, this dimension will increase accordingly.

Table 9 Dimensions of Heavy Weight (Type 2) Steel Butt Hinges

(Clauses 3, 5.1, 6.2.2, 6.3, 6.4 and 6.4.1)

Sl No.	Size of Hinge	Length	Breadth	Thickness of Flap	Diameter of Hinge Pin	Number of Knuckles	Number of Screw Holes	Holes for Screw No.
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>			
	mm	mm	mm	mm	mm			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
i)	50	50 ± 0.5	38 ± 1	2.00 ± 0.08	3.15 ± 0.08	3	6	6
ii)	65	65 ± 0.5	43 ± 1	2.10 ± 0.08	3.55 ± 0.08	5	6	6
iii)	75	75 ± 0.5	48 ± 1	2.45 ± 0.08	4.00 ± 0.08	5	6	7
iv)	90	90 ± 0.5	53 ± 1	2.50 ± 0.08	5.00 ± 0.08	5	6	7
v)	100	100 ± 0.5	59 ± 1	2.60 ± 0.08	5.60 ± 0.08	5	8	8
vi)	125	125 ± 0.5	65 ± 1	2.80 ± 0.08	5.60 ± 0.08	5	8	9
vii)	150	150 ± 0.5	75 ± 2	2.80 ± 0.10	6.30 ± 0.08	5	8	10
viii)	175	175 ± 0.5	80 ± 2	3.10 ± 0.10	6.30 ± 0.08	5	10	11
ix)	200	200 ± 0.5	90 ± 2	3.50 ± 0.10	6.30 ± 0.08	5	10	11

NOTE — Dimensions *B* is for uncranked hinge. For cranked hinge, this dimension will increase accordingly.

square types the position of holes shall be as specified in Fig. 1. The distance of the screw holes from the end of the flap either parallel to the pin or across it shall be as follows:

X or *Y* (see Fig. 1)

For hinges of 15, 20 and 25 mm size	2.0 mm, <i>Min</i>
For hinges of 40, 50 and 65 mm size	3.5 mm, <i>Min</i>
For hinges of 75, 90 and 100 mm size	5.0 mm, <i>Min</i>
For hinges of 125 mm size and above	7.0 mm, <i>Min</i>

Z (see Fig. 1)

For hinges of 15 mm size	3.5 mm, <i>Min</i>
For hinges of 20 mm size and above	4.0 mm, <i>Min</i>

where

- X* = distance of the end hole from the end of flap measured parallel to the pin;
- Y* = distance of the end hole from the end of flap measured at right angle to the pin; and
- Z* = distance of the end hole nearest to knuckle edge, where holes are provided in zig-zag manner, from the edge of the knuckle slot.

6.4.2.1 When more than two screw holes are provided in each flap, they shall be equidistant from one another.

7 FINISH

Unless otherwise specified, hinges shall be finished bright with smooth surfaces. IS 208 can be referred as guidelines in regard to finishes.

8 MARKING

8.1 Each hinge shall be clearly and permanently marked with the manufacturer's name or trade-mark.

8.2 BIS Certification Marking

The hinges may also be marked with the Standard Mark.

8.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of the 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 of 15, 20 and 25 mm : 30 pieces in each package

Size over 25 mm and up to : 20 pieces in each package and including 75 mm

Sizes above 75 mm : 10 pieces in each package

NOTE — Hinges may be packed in multiples of six, if required by the purchaser. For customers' usage, paper slip giving maintenance and care of steel butt hinges will be put in each box as given in Annex C.

9.2 Each package shall be labelled showing the following particulars:

- a) Type of hinges,
- b) Size of hinges,
- c) Quantity of hinges, and
- d) Indication of the source of manufacture.

10 SAMPLING AND CRITERION FOR CONFORMITY

The method of selecting hinges and the criterion for conformity shall be as given in Annex D.

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ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
205 : 1992	Non-ferrous metal butt hinge (<i>fourth revision</i>)	513 (Part 1) : 2016	Cold rolled low carbon steel sheets and strips (<i>sixth revision</i>)
280 : 2006	Mild steel wire for general engineering purposes (<i>fourth revision</i>)	1079 : 2017	Hot-rolled carbon steel sheet and strip (<i>seventh revision</i>)
		6760 : 1972	Slotted countersunk head wood screws

ANNEX B

(Clause 6.1)

APPLICATION GUIDELINES OF STEEL BUTT HINGES

<i>Example of Usages</i>	<i>Door Weight</i>	<i>Maximum Yearly Cycles (Open/Close) Operations</i>	<i>Hinge Type</i>
Cabinet Hinges	Up to 3 kg	2 000	Light Weight Steel Butt Hinges 15 mm, 25 mm
Cabinet Hinges	Above 3 kg - Up to 8 kg	5 000	Light Weight Steel Butt Hinges 40 mm, 50 mm
Window Hinges	Above 8 kg - Up to 16 kg	10 000	Light Weight Steel Butt Hinges 65 mm, 75 mm
Door Hinges	Above 16 kg - Up to 32 kg	10 000	Light Weight Steel Butt Hinges 100 mm
Window Hinges	Above 8 kg - Up to 16 kg	25 000	Light Weight 50 mm, 60 mm, 75 mm
Door Hinges	Above 16 kg - Up to 32 kg	25 000	Light Weight 100 mm, 125 mm, 150 mm
Window Hinges	Up to 16 kg	25 000	Light Weight Unequal Flap Hinges 75 mm × 13 mm × 19 mm
Door Hinges	Above 16 kg - Up to 32 kg	25 000	Light Weight Unequal Flap Hinges 100 mm × 13 mm × 19 mm
Window Hinges	Above 16 kg - Up to 32 kg	25 000	Medium Weight Unequal Flap Hinges 75 mm × 13 mm × 19 mm
Door Hinges	Above 32 kg - Up to 50 kg	25 000	Medium Weight Unequal Flap Hinges 100 mm × 13 mm × 19 mm
Cabinet Hinges	Up to 8 kg	25 000	Medium Weight Steel Butt Hinges 20 mm, 25 mm, 40 mm
Window Hinges	Above 8 kg - Up to 32 kg	25 000	Medium Weight Steel Butt Hinges 50 mm, 65 mm, 75 mm
Door Hinges	Above 32 kg - Up to 50 kg	25 000	Medium Weight Steel Butt Hinges 90 mm, 100 mm
Door Hinges	Above 50 kg - Up to 65 kg	25 000	Medium Weight Steel Butt Hinges 125 mm, 150 mm
Window Hinges	Above 16 kg - Up to 32 kg	25 000	Broad Type Steel Butt Hinges 50 mm, 75 mm
Door Hinges	Above 32 kg - Up to 50 kg	25 000	Broad Type Steel Butt Hinges 100 mm
Door Hinges	Above 150 kg - Up to 65 kg	25 000	Broad Type Steel Butt Hinges 125 mm, 150 mm
Window Hinges	Above 16 kg - Up to 32 kg	25 000	Square Type Steel Butt Hinges 50 mm, 65 mm

<i>Example of Usages</i>	<i>Door Weight</i>	<i>Maximum Yearly Cycles (Open/Close) Operations</i>	<i>Hinge Type</i>
Window Hinges	Above 16 kg - Up to 32 kg	50 000	Square Type Steel Butt Hinges 75 mm
Door Hinges	Above 32 kg - Up to 65 kg	25 000	Square Type Steel Butt Hinges 90 mm
Window Hinges	Above 16 kg - Up to 32 kg	50 000	Heavy Weight (Type 1) Steel Butt Hinges 50 mm, 65 mm, 75 mm
Door Hinges	Above 32 kg - Up to 50 kg	50 000	Heavy Weight (Type 1) Steel Butt Hinges 90 mm, 100 mm
Door Hinges	Above 50 kg - Up to 65 kg	50 000	Heavy Weight (Type 1) Steel Butt Hinges 125 mm, 150 mm
Door Hinges	Above 65 kg - Up to 80 kg	50 000	Heavy Weight (Type 1) Steel Butt Hinges 175 mm, 200 mm
Window Hinges	Above 16 kg - Up to 32 kg	25 000	Heavy Weight (Type 2) Steel Butt Hinges 50 mm, 65 mm, 75 mm
Door Hinges	Above 32 kg - Up to 50 kg	25 000	Heavy Weight (Type 2) Steel Butt Hinges 90 mm, 100 mm
Door Hinges	Above 50 kg - Up to 65 kg	25 000	Heavy Weight (Type 2) Steel Butt Hinges 125 mm, 150 mm
Door Hinges	Above 65 kg - Up to 80 kg	25 000	Heavy Weight (Type 2) Steel Butt Hinges 175 mm, 200 mm

ANNEX C

(Clause 9)

MANUFACTURER'S INSTRUCTION LEAFLET

C-1 The hinges have been produced by the manufacturer to provide smooth operation when fitted. It is possible that after frequent usage the dust may combine with other particles and debris to create hindrance in its smooth operation. Unless cleaning is effected regularly the deposit may act as a grinding

agent and decrease the life of the hinge. It is recommended that wiping away any such deposit with suitable cleaning agent is undertaken on regular basis. These hinges shall be lubricated regularly with WD40 oil or its equivalent grade and this would accomplish its function effectively.

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ANNEX D

(Clause 10)

SAMPLING AND CRITERION FOR CONFORMITY

D-1 LOT

In any consignment, all the butt hinges of the same type and size and manufactured from similar materials under identical conditions of manufacture shall be grouped together to constitute a lot.

D-2 SAMPLE SIZE

D-2.1 The number of butt hinges to be selected from a lot shall depend on the size of lot and shall be in accordance with col 1 and col 2 of Table 10.

D-2.2 Butt hinges for testing shall be selected at random from at least 10 percent of the randomly selected packages subject to a minimum of three, equal number of hinges being selected from each such package.

D-3 TESTS

All butt hinges selected as in **D-2** shall be checked for dimensions and tolerances (*see 5*), manufacture (*see 6*) and finish (*see 7*). Any hinge which fails to satisfy the

requirements of any one or more of the characteristics shall be considered as defective hinge.

D-4 CRITERION FOR CONFORMITY

A lot shall be considered as conforming to the requirements of this standard if the number of defective hinges among those tested does not exceed the corresponding number given in col 3 of Table 10.

Table 10 Scale of Sampling and Criterion for Conformity

(Clauses D-2.1 and D-4)

Lot Size	Sample Size	Permissible Number of Defective Hinges
(1)	(2)	(3)
Up to 150	5	0
151 to 300	20	1
301 to 500	32	2
501 to 1 000	50	3
1 001 and above	80	5

ANNEX E

(Foreword)

COMMITTEE COMPOSITION

Builder's Hardware Sectional Committee, CED 15

<i>Organization</i>	<i>Representative(s)</i>
In Personal Capacity (1421 Sector A, Pocket B&C, Vasant Kunj, New Delhi)	SHRI B. MAJUMDAR (Chairman)
Allied Anodisers, Kolkata	SHRI SUSHIL TAWAR
Appex Association of DDA Colonies (Regd), Delhi	SHRI R. P. AGRAWAL SHRI R. R. SHARMA (<i>Alternate</i>)
Argent Industries, New Delhi	SHRI ANIL CHADHA SHRIMATI VANITA CHADHA (<i>Alternate</i>)
Builders Association of India, New Delhi	SHRI RAJ PAL ARORA SHRI H. S. PSRICHA (<i>Alternate</i>)
Building Materials & Technology Promotion Council, New Delhi	DR AMIT RAI SHRI C. N. JHA (<i>Alternate</i>)
Central Building Research Institute, Roorkee	SHRI ASHOK KUMAR SHRI S. K. NEGI (<i>Alternate</i>)
Central Public Works Department, New Delhi	SHRI B. B. DHAR SHRI MATHURA PRASAD (<i>Alternate</i>)
Construction Industries Development Council, New Delhi	SHRI P. R. SWARUP SHRI RAJEEV JAIN (<i>Alternate</i>)
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