IS 1019 (1974): Specification For Rim Latches [CED 15: Builder Hardware]

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INDIAN STANDARD

SPECIFICATION FOR RIM LATCHES

(Second Revision)

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

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Indian Standard

SPECIFICATION FOR RIM LATCHES

(Second Revision)

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AMENDMENT NO. 1 JUNE 1979
TO
IS : 1019 - 1974 SPECIFICATION FOR RIM LATCHES

(Second Revision)

Alteration

(*Page* 4, *clause* 4.1, *Note*) — Substitute the following for the existing note:

'NOTE — The size of the rim latch shall be denoted by the overall length of the body measured from the outside face of the fore end to the rear end.'

(BDC 15)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR RIM LATCHES

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 13 December 1974, after the draft finalized by the Builder's Hardware Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 The specification for rim latches was first published in 1957 and subsequently revised in 1963. In the second revision zinc base alloy pressure die casting has also been allowed for the manufacture of rim latches.

0.3 This standard contains clause **4.2** which permits the purchaser to use his option for selection to suit his requirements.

0.4 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 practice in the field in this country.

0.5 This standard is one of a series of Indian Standards on builder's hardware.

0.6 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 this standard.

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1. SCOPE

1.1 This standard lays down the requirements regarding material, dimensions, manufacture and finish of rim latches for general use.

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

2. HANDING OF RIM LATCHES

2.1 Handing of rim latches shall be determined by the handing of the door on which it is fitted, the latch is termed 'left hand' if it is fitted on 'left hand door' and 'right hand' if it is fitted on 'right hand door'. For handing of doors reference is invited to IS : 1003 (Part I)-1966*.

3. TYPES

3.1 Rim latches shall be of the following two types:

Type 1 — Rim latches which open when the handle is turned in one direction only.

Type 2 — Rim latches which open when the handle is turned in any direction.

3.1.1 Type 1 rim latches shall be either '*left hand*' or '*right hand*'.

4. SIZES

4.1 The standard sizes of rim latches shall be 75, 100, 125 and 150 mm.

NOTE — The size of a rim latch shall be denoted by the length of the face across the body in millimetres.

4.2 Rim latches of sizes other than those specified under **4.1** may be supplied by mutual agreement between the purchaser and the supplier but the provisions laid down in this standard shall be generally followed.

5. MATERIAL

5.1 Materials used for different component parts of the latch shall comply with the requirements given in Table 1.

6. SHAPE

6.1 The shape, design and mechanism of rim latches and their parts indicated in Fig. 1 and Fig. 2 are intended to be illustrative and for guidance only. The manufacturer may make rim latches of any shape to suit his design.

7. DIMENSIONS AND TOLERANCES

7.1 The leading dimensions of Type 1 rim latches and tolerances thereon shall be as given in Table 2 read with Fig. 1.

7.2 The leading dimensions of Type 2 rim latches and tolerances thereon shall be as given in Table 3 read with Fig. 2.

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*Specification for timber panelled and glazed shutters: Part I Door shutters (*first revision*).

8. MANUFACTURE

8.1 Rim latches shall be of mild steel, brass, aluminium alloy or zinc base alloy.

8.2 Type 1 Rim Latches — *See* Fig. 1 for illustration.

8.2.1 *Body* — The body shall be of mild steel sheet or cast brass unless otherwise required to be of rolled brass sheet, or aluminium alloy casting or aluminium alloy sheet or zinc base alloy. When sheet is used, it shall be pressed out of a single sheet. Alternatively, if it is cut and shaped, the joints shall be welded or brazed. The front portion of the body shall have a circular hole in which the spindle shall work and a rectangular slot in which the locking pin shall work. The circular hole shall be fitted with a brass bushing only in the case of steel rim latches. On the side plate there shall be rectangular slots to suit the latch head and the locking pin.

8.2.2 *Back Plate* — The back plate shall be of mild steel or cast brass, unless otherwise required to be of rolled brass sheet, or aluminium alloy casting or aluminium alloy sheet and shall have a hole for permitting the spindle to operate. Provision shall be made for its proper fixing to the body.

8.2.3 *Latch Bolt* — The latch bolt shall be of cast brass or a combination of brass bolt with a steel lath. When steel lath is provided it shall be adequately protected against corrosion by galvanizing or cadmium plating.

8.2.4 *Follower* — The follower shall be of brass, leaded tin bronze or aluminium alloy. It shall be suitably moulded and machined. It shall have a 8-mm square hole at its centre to suit the spindle which operates the bolt.

8.2.5 *Spring* — The bolt shall be fitted with at least one flat or flattend wire spring which shall be of either phosphor bronze or steel. The spring shall withstand the test given below without showing any sign of permanent set:

> 'The spring shall be pressed down completely and then released. This shall be repeated six times.'

8.2.6 *Locking Pin* — The locking pin shall be of cast brass and shall be of suitable shape.

8.2.7 *Spindle* — The spindle shall be 8 mm square in section and shall be of mild steel. Towards one end it shall have a hole at a suitable position for riveting the knob and on the other end there shall be at least three holes at suitable distances, that is, 6 mm apart for adjusting the position of the knob according to the thickness of the door shutter.

TABLE 1 REQUIREMENTS FOR MATERIALS OF RIM LATCHES

(*Clause* 5.1)

Sl No.	Materials	Typical Example of Suitable Grade in Indian Standard	Requirements of Materials
(1)	(2)	(3)	(4)
i)	Mild steel	Grade 'O' of IS : 1079-1968*	Finished components shall satisfy the following bend test: ' The component part when cold shall withstand, without developing cracks being doubled over either by pressure or by blows from hammer until the internal radius is equal to the thickness or diameter of the component part and the sides are parallel '
ii)	Galvanized mild steel wire (for rivets)	IS : 280-1972†	The wire shall withstand, without breaking or splitting being wrapped eight times round its own diameter and subsequently straightened
iii)	Cast brass	Grade 3 of IS : 292-1961‡	Copper content shall not be less than 60 percent. Casting shall be free from blow holes, surface and other casting defects
iv)	Brass sheet	Grade CuZn 40 of IS : 410-1967§	The brass sheet shall meet the same bend test as specified for mild steel
v)	Phosphor bronze wire	Grade PCuSn 4 of IS : 1385-1968‖	—
vi)	Steel wire for spring	Grade 2 of IS : 4454-1967¶	—
vii)	Leaded tin bronze	Grade 2 of IS : 318-1962**	—

viii) Aluminium alloy pressure die castings	IS Designation A-5-M or A-6-M of IS : 617-1959††	—
ix) Aluminium alloy sheets	IS Designation NS4 or NS5 of IS : 737-1974‡‡	—
x) Zinc base alloy pressure die casting	IS : 742-1966§§	—

*Specification for hot rolled carbon steel sheet and strip (*second revision*).

†Specification for mild steel wire for general engineering purposes (*second revision*).

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

§Specification for rolled brass plate, sheet, strip and foil (*second revision*).

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

¶Specification for steel wires for cold formed springs.

**Specification for leaded tin bronze ingots and castings (*revised*).

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

‡‡Specification for wrought aluminium and aluminium alloys, sheet and strip (for general engineering purposes (*second revision*).

§§Specification for zinc base alloy die castings (*first revision*).

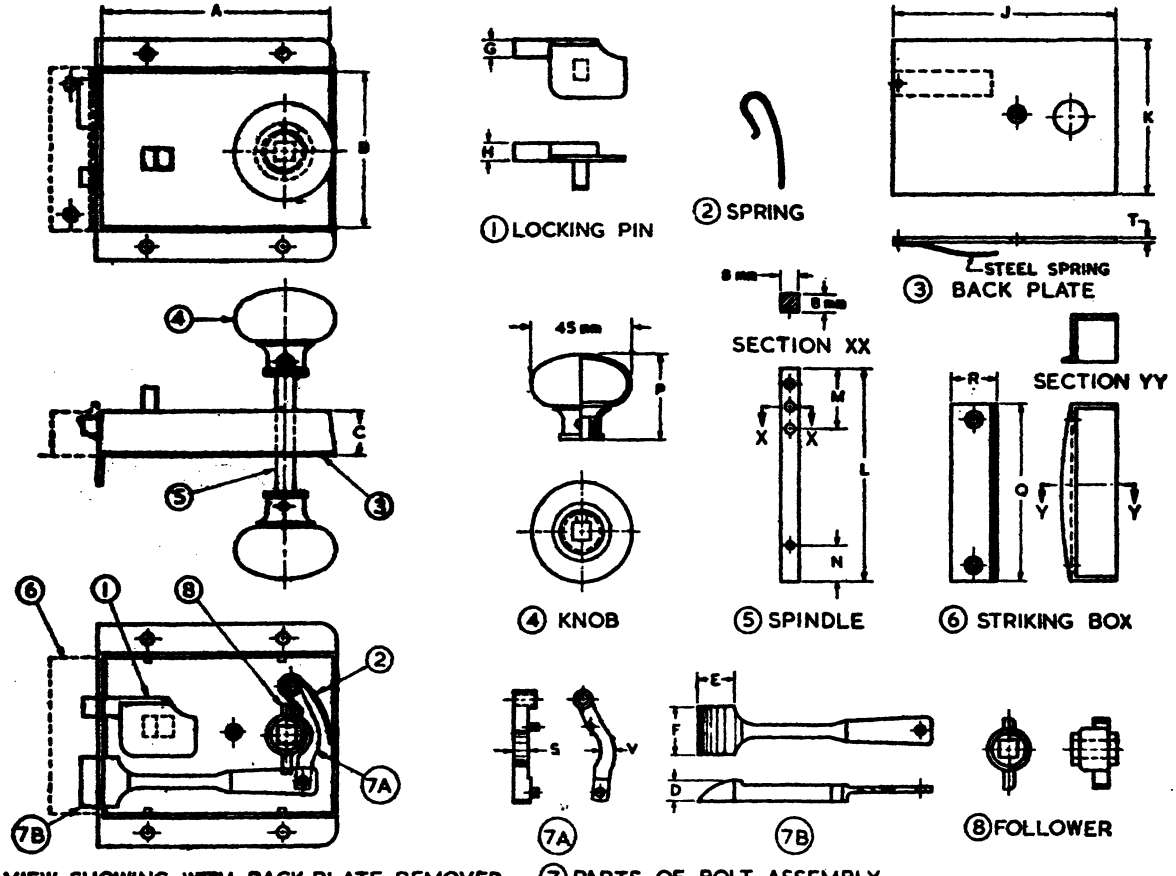

FIG. 1 TYPICAL DESIGN OF RIM LATCH — TYPE 1

TABLE 2 DIMENSIONS OF RIM LATCHES, TYPE 1

(*Clause* 7.1 and *Fig.* 1)

All dimensions in millimetres.

a) *Mild Steel Latch*

Size of Rim Latch	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J* (Approx)	*K* (Approx)	*L*	*M*	*N*	*P*	*Q*	*R*	*S* *Min*	*T* *Min*	*V* *Min*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
75	75	60	14	10·0	16	20	8·0	8·0	73	60	95	27	16	40	75	20	6	1·60	6
100	100	70	20	10·0	16	22	8·0	8·0	98	70	95	27	16	40	80	20	6	1·60	6
125	125	70	20	11·2	20	22	8·0	8·0	123	70	95	27	16	40	80	20	6	1·60	6
150	150	70	20	12·5	22	22	8·0	8·0	148	70	95	27	16	40	80	20	10	1·60	5
Tolerances	±1	±1	±1	±0·5	±1	±1	±0·5	±0·5	±0·5	—	±2	±1	±1	±1	±2	±1	—	—	—

b) *Brass, Aluminium Alloy and Zinc Base Alloy Latches*

Same as for mild steel latch, except that the thickness of body plate and back plate shall be not less than 2·5 mm finished for 100 mm and 125 mm rim latches and not less than 3 mm for 150 mm rim latch.

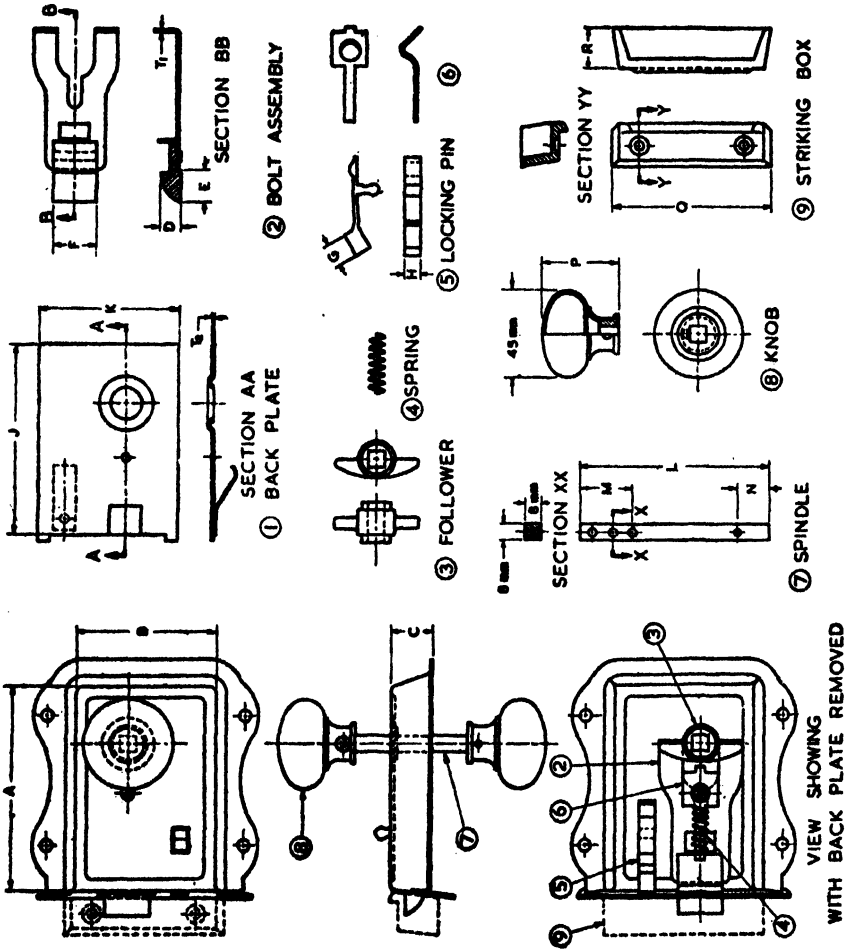

FIG. 2 TYPICAL DESIGN OF RIM LATCH — TYPE 2

TABLE 3 DIMENSIONS OF RIM LATCHES, TYPE 2

(*Clause* 7.2 and *Fig.* 2)

All dimensions in millimetres.

a) *Mild Steel Latch*

Size of Rim Latch	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*J*	*K* (Approx)	*L*	*M*	*N*	*P*	*Q*	*R*	T_1 *Min*	T_2 *Min*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
75	75	60	14	10·0	16	20	8·0	8·0	73	60	95	27	16	40	75	20	1·60	1·60
100	100	70	20	10·0	16	22	8·0	8·0	98	70	95	27	16	40	80	20	1·60	1·60
125	125	70	20	11·2	20	22	8·0	8·0	123	70	95	27	16	40	80	20	1·60	1·60
150	150	70	20	12·5	22	22	8·0	8·0	148	70	95	27	16	40	80	20	1·60	2·00
Tolerances	±1	±1	±1	±0·5	±1	±1	±0·5	±0·5	±0·5	—	±2	±1	±1	±1	±2	±1	—	—

b) *Brass, Aluminium Alloy and Zinc Base Alloy Latches*

Same as for mild steel latch, except that the thickness of body plate and back plate shall be not less than 2·5 mm finished for 100 mm and 125 mm rim latches and not less than 3 mm for 150 mm rim latch.

8.2.8 *Knobs* — Knobs shall be of brass or aluminium alloy and shall be cast hollow in one piece, unless otherwise required to be made from brass sheet or aluminium alloy sheet by the purchaser in which case the grip shall be secured to it by brazing. The knob shall fit on both the ends of the spindle tightly and shall be fixed by means of a screw on the spindle in one of the adjusting holes at one end and riveted at the other. Alternatively, spring type lever handle conforming to IS : 4992-1968* may be used.

8.2.9 *Disc* — A disc of cast brass, sheet brass, aluminium alloy casting or aluminium alloy sheet shall be provided for fitting on the outside of the wooden door shutter. It shall have a central hole to suit the spindle and two small holes for fixing it to the door shutter.

8.2.10 *Striking Box* — Each rim latch shall be provided with a socket or striking box which shall be pressed from mild sheet, unless required to be of cast iron in the case of steel rim latch, cast brass unless required to be of sheet brass in the case of brass rim latch, aluminium alloy casting or aluminium alloy sheet in the case of aluminium rim latch and zinc base alloy casting in the case of zinc base alloy latch. It shall have two countersunk holes for fixing it to the door shutter.

8.3 Type 2 Rim Latches — *See* Fig. 2 for illustration.

8.3.1 *Body* — The body of Type 2 rim latches shall comply with the requirements laid down under **8.2.1.**

8.3.2 *Latch Bolt* — The latch bolt shall be of cast brass or a combination of brass bolt with a steel lath. When steel lath is provided it shall be adequately protected against corrosion by galvanizing or cadmium plating.

8.3.3 *Spring* — Spring shall be of either phosphor bronze wire or hard-drawn steel wire. Other wire or flat having similar properties may also be used with the approval of the purchaser. It shall be wound round a suitable arrangement connecting the plate to the bolt such that the bolt is normally in the locking position. When the bolt assembly is operated, the spring shall be compressed and as soon as the handle is released the spring shall throw the bolt back to the locking position.

8.3.4 The back plate, follower, locking pin, spindle, knobs, disc, and striking box shall comply with the requirements laid down under **8.2** for corresponding components.

9. WORKMANSHIP AND FINISH

9.1 The rim latches shall be so assembled as to function smoothly.

*Specification for door handles for mortice locks (vertical type).

9.2 Brass latches shall have bright or satin finish, and aluminium latches anodized finish. The anodic coating shall not be less than Grade AC 15 of IS: 1868-1968*. The anodic film may be either transparent or dyed as specified by the purchaser. The steel latches shall be black japanned, stove enamelled black, or copper oxidized as specified by the purchaser.

10. PERFORMANCE REQUIREMENTS

10.1 The finally assembled rim latches shall be capable of satisfying the performance requirements.

10.1.1 When the knob of the latch is turned, the latch bolt shall draw smoothly into the body and shall be flush with the face of the body.

11. MARKING

11.1 Each rim latch shall be marked with the manufacturer's name or trade-mark.

11.1.1 The rim latch 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. The ISI 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 which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. 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.

12. PACKING

12.1 Each rim latch shall be wrapped in a paper and packed in a cardboard box. Each cardboard box shall be marked with the following information:

a) Manufacturer's name or trade-mark,

b) The ' hand ' of latch in the case of Type 1 latch,

c) Type of latch, and

d) Quantity in the package.

13. SAMPLING

13.1 Sampling and inspection of a consignment of latches shall be carried out in accordance with the provisions laid down in Appendix A.

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

APPENDIX A

(*Clause* 13.1)

SAMPLING AND CRITERIA FOR CONFORMITY

A-1. LOT

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

A-1.2 Lot Size and Sample Size — The number of rim latches 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.

TABLE 4 SCALE OF SAMPLING AND CRITERIA FOR CONFORMITY

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

Lot Size	Sample Size	Permissible Number of Defectives
(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

A-1.3 The rim latches for testing shall be selected at random from at least 10 percent of packages subject to a minimum of three, equal number of rim latches being selected from each such package

A-2. TESTS

A-2.1 All the rim latches selected as in **A-1.3** shall be checked for dimensional requirements (*see* **7**), defects in manufacture (*see* **8**), workmanship and finish (*see* **9**), and performance (*see* **10**). Any rim latch, which fails to satisfy one or more of the characteristics shall be considered as defective rim latch.

A-3. CRITERIA FOR CONFORMITY

A-3.1 A lot shall be considered as conforming to the requirements of this standard if the number of defective rim latches 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.

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