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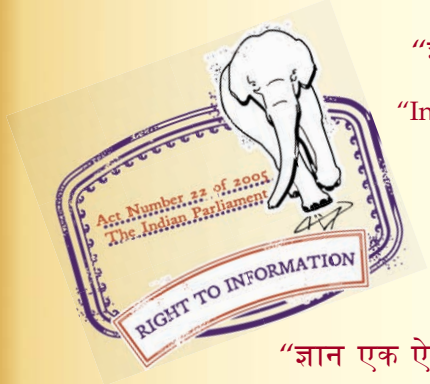
IS 3847 (1992): Mortice night latches-Specification [MED 33: Utensils, Cutlery and Domestic Hardware]

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"Knowledge is such a treasure which cannot be stolen"

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IS 3847 : 1992
( Reaffirmed 2001 )

भारतीय मानक

# मार्टिस गुप्त ताले — विशिष्टि

( पहला पुनरीक्षण )

*Indian Standard*

# MORTICE NIGHT LATCHES — SPECIFICATION

*( First Revision )*

UDC 683·312



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

*March* 1992

Price Group 3

## FOREWORD

This Indian Standard ( First 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.

Night latches are particularly fitted to doors of rooms where it is intended to have dual control over access to room from both inside and outside to authorized persons. They are being manufactured and used in the country. This standard has been prepared to give guidance to manufacturers and users in getting a product of good performance.

While preparing this standard, the Sectional Committee took note of the acute scarcity of non-ferrous materials like copper, zinc and their 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 has been strongly recommended that hardware items made of these materials should not be used.

This standard contains clauses **7.1**, **7.2**, **8.2.1** and **9.1** which permit the purchaser to use his option for selection to suit his requirements and clause **10.1.1** which calls for agreement between the purchaser and the supplier at the time of placing orders.

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

This revision makes reference to the latest versions of the Indian Standards referred to in this standard and consequently indicates the current designations of various material grades to be used.

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*

# MORTICE NIGHT LATCHES — SPECIFICATION

## *( First Revision )*

## 1 SCOPE

**1.1** This standard lays down the requirements for mortice night latches for general use.

## 2 REFERENCES

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

## 3 TERMINOLOGY

**3.0** For the purpose of this standard, the following definition shall apply,

### 3.1 Mortice Night Latches

Any mortice lock having a single spring bolt withdrawn from the outside by key and from inside by a handle and with an arrangement whereby the lock can be prevented from being opened by its key from outside while the night latch is used inside the room.

## 4 HANDLING OF LATCHES

**4.1** Handling of latches shall be determined by the handling of the door on which it is fitted. It is termed 'left hand' if it is fitted on the 'left hand door' and 'right hand' if it is fitted on the 'right hand door' [ *see* IS 1003 ( Part 1 ) : 1977 ].

## 5 NOMINAL SIZE

**5.1** Nominal size of night latch shall be denoted by the overall length of the body measured from the outside face of the fore end to the rear end ( *see* '*L*' in Fig. 1 ).

## 6 MATERIAL

**6.1** Material used for different component parts of the mortice night latches shall comply with the requirements given in Table 1 ( *see also* Foreword, Para 3 ).

## 7 NON-INTERCHANGEABILITY

### 7.1 Two Lever Latches

The mortice night latches shall be manufactured to have non-interchangeability keys in a batch consisting of a minimum of 12 latches. In case a non-interchangeability in a higher number is required, it shall be so specified by the purchaser at the time of placing the order. A master-key may be supplied if required by the purchaser.

**7.1.1** For the purpose of testing interchangeability, three latches from each batch of 12 latches shall be so selected that the wards of the keys differ from each other slightly. These latches shall then be tested for non-interchangeability. If key of any one of the latches opens any other latch, amongst the three latches the whole lot shall be rejected.

### 7.2 Latches with More Than Two Levers

The mortice latches shall be manufactured so as to have non-interchangeable keys in a batch consisting of a minimum of 60 latches. In case non-interchangeability in a larger number is required, it shall be so specified by the purchaser at the time of placing the order. A master key may be supplied if required by the purchaser.

**7.2.1** For the purpose of testing non-interchangeability, 5 latches from each batch of 60 latches shall be so selected that the wards of the keys differ from each other slightly. The latches shall then be tested for non-interchangeability. If key of any one of the latches opens any other latch amongst the 5 latches, the whole lot shall be rejected.

## 8 MANUFACTURE

**8.1** A typical illustration of a mortice night latch is shown in Fig. 1.

NOTE — It is intended to show typical features only and not to limit the design.

### 8.2 Body

The depth of the body shall not be more than 15 mm.

#### 8.2.1 *Fore End*

The case plate itself may form the fore end. However, where so desired by the purchaser, in order to obtain a clean plate free from rivet and to assist in decorating the fore end, a face plate may be provided. The fore end shall be firmly fitted to the body by suitable countersunk head machine screws ( *see* IS 1365 : 1978 ) or by any other suitable device.

### 8.3 Locking Bolt

The locking bolt shall be of a single metal or a combination of metals recommended for this part in Table 1. The bolt shall be of section not less than 8 mm × 25 mm. When steel latch is provided it shall be adequately protected against corrosion.

**Table 1 Requirements for Materials for Component Parts of Mortice Night Latches**

( *Clauses* 6.1, 8.3 *and* 8.6 )

| Sl No. | Material | Component | Requirements for Materials | Typical Examples |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| i) | Mild steel | Body, body cover, case plate, key, face plate, striking plate, lever, locking and latch bolt | 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 blow from hammer until the internal radius is equal to the thickness or diameter of the component part and the sides are parallel | IS 226 : 1975 |
| ii) | Steel wire | Lever spring | The wire used for springs shall comply with the test given below: The lever spring shall be fitted into the lever as specified under 8.6 and shall be pressed down so as to touch the top edge of the lever and released. This shall be repeated six times. At the end of the test, the spring shall regain its original position | Grade 3 or Grade 4 of IS 4454 ( Part 1 ) : 1981 |
| iii) | Malleable iron | Key and follower | — | Grade BM 340 or BM 310 of IS 2108 : 1977 |
| iv) | Aluminium alloy castings | Body, body cover, follower and key | — | IS designation 5230 M or 4600 M of IS 617 : 1975 |
| v) | Aluminium alloy sheet | Body, body covers, case plate, striking plate, lever and face plate | — | IS designation 52000 Hl, or 65032 W of IS 737 : 1986 |
| vi) | Cast brass | Body, body cover, follower and key, case plate, face plate and striking plate | Copper content shall be not less than 60%. Casting shall not be free from blow holes, surface and other casting defects | LCB 2 of IS 292 ; 1983 |
| vii) | Brass sheet | Body, body cover, case plate, face plate, lever and striking plate | The brass sheet shall meet the same bend test as specified for mild steel | Cast brass cast from melting sheet cuttings and brass utensils may be used CuZn40 of IS 410 : 1977 |
| viii) | Extruded brass | Locking bolt and latch bolt | Copper content shall be not less than 55% and tensile strength 35 kg/mm$^2$, *Min* | IS 319 : 1974 |
| ix) | Extruded aluminium alloys | Locking bolt and latch bolt | — | IS Designation 64430 WP of IS 733 : 1983 |
| x) | Leaded tin bronze | Follower and key | — | LTB 2 of IS 318 : 1981 |
| xi) | Zinc base alloy die castings | Body, body cover and follower | — | IS 742 : 1981 |
| xii) | Phosphor bronze | Lever spring and latch spring | The wire used for spring shall comply with the test given below: The lever spring shall be fitted into the lever as specified under 8·6 and shall be pressed down so as to touch the top edge of the lever and released. This shall be repeated six times. At the end of the test, the spring shall regain its original position | IS 7608 : 1987 |
| xiii) | Stainless steel | Key | — | IS 6911 : 1972 |

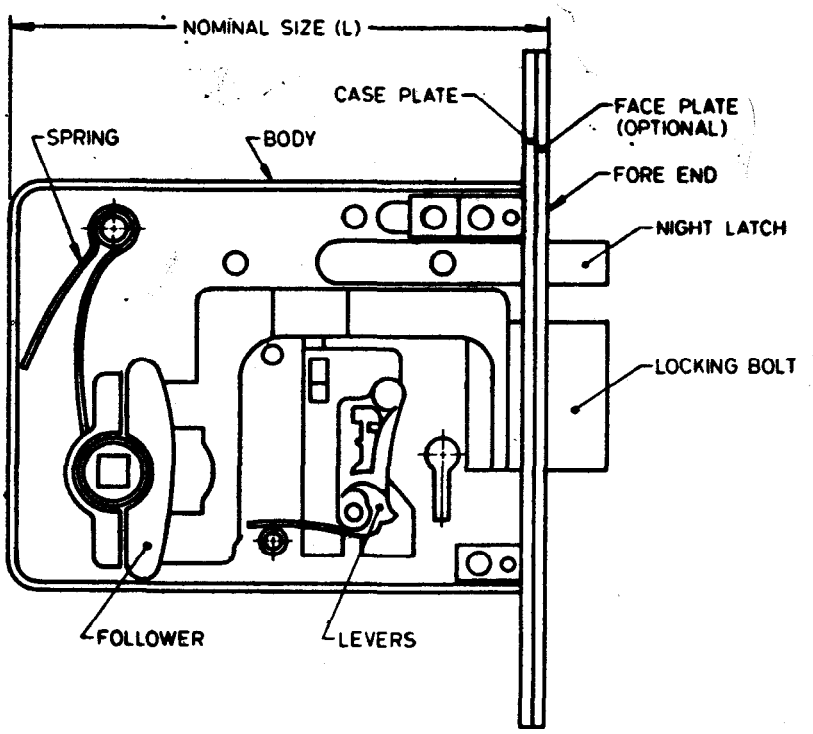


FIG. 1 TYPICAL SKETCH OF MORTICE NIGHT LATCH

**8.4 Mechanism**

The locking mechanism shall be of ordinary lever type or any other type approved by the purchaser and shall fulfil the requirements given in **3.1.**

**8.5 Levers**

Ordinary lever mechanism ( *see* Fig. 1 ) shall be provided with not less than two levers.

**8.5.1** False ( dummy ) levers shall not be used.

**8.6 Lever Spring**

Each lever shall be fitted with one spring which shall comply with the materials specified in Table 1. The lever spring fitted into the lever shall withstand the following test without showing any sign of permanent set:

The lever spring shall be pressed down so as to touch the top edge of the lever and released. This shall be repeated six times.

**8.7 Follower**

It shall have a square hole at its centre to suit the spindle which operates the bolt. It shall be protected against corrosion when made from malleable iron.

**8.8 Locking Pin**

The locking pin shall be preferably integrally cast with the body in the case of locks with brass body.

**8.9 Spindle**

The spindle shall suit the hole in follower.

**8.10 Key**

The key shall function smoothly and without any appreciable friction in the lock. The keys shall be suitably tied to the lock so that they are not lost or interchanged in transit. Malleable iron key shall be protected against corrosion, where necessary.

**8.10.1** Each mortice night latch shall be provided with two keys.

**8.11 Striking Plate**

The striking plate shall have two rectangular slots to suit the locking bolt and night latch. It shall have two countersunk holes for fixing it to the door shutter.

**8.12 Screws**

The body cover shall be fitted to the body by countersunk head machine screws ( *see* IS 1365 : 1978 ). Screws shall be of mild steel and protected against corrosion, where necessary; however, the screws may be of aluminium alloy in the case of aluminium bodies.

**9 WORKMANSHIP AND FINISH**

**9.1** Steel body shall be given suitable protective coating, such as painting. Face plate and striking plate shall be finished smooth and

polished bright or satin. Where so desired by the purchaser, face plate and striking plate may also be chromium plated; where aluminium alloy is specified, it shall be suitably anodized.

## 10 TESTS

**10.1** The finally assembled latch shall withstand the tests given in **10.1.1** to **10.1.4**.

**10.1.1** The locking bolt shall be first locked in the forward position. A load as agreed to between the manufacturer and the purchaser shall be applied without shock in the direction perpendicular to securing face as well as on both the locking faces of protruding bolt in turn. Then the load shall be applied by means of a fixed steel board 3 mm thick by a rounded edge held in such a position that the centre line is approximately 3 mm from the fore end. A typical arrangement for the purpose of this test is shown in Fig. 2.

**10.1.2** Where the spindle with handle is inserted into hole in the follower and turned, the latch bolt shall draw smoothly into the latch body and shall be within one millimetre from the face of the fore end.

**10.1.3** When a key is inserted in key hole from one side of the latch and turned to withdraw the locking bolt the action shall be smooth and without impediment. When the direction of turn is reversed to lock the locking bolt, then also the action shall be smooth and without limpediment. In the locked position the locking bolt shall project 12 mm from the face of the fore end, although one millimetre free movement is permissible. In the withdrawn position the locking bolt shall not project more than one millimetre from the face of the fore end. The ocking bolt shall be worked by turning key in both the directions several times quickly, limiting the total number of turns to about 12 000. The purpose of this test is to check up that the components do not move from their normal position to cause impediment to others. This test shall be repeated with the key inserted from the other side of the latch.

**10.1.4** When the key is turned to lock the locking bolt at the same time applying a reasonable pressure by finger on it, after completion of the key rotation the locking bolt shall be positively locked in the forward position. This test shall be repeated with the key inserted from the other side of the lock.

## 11 INSPECTION AND CERTIFICATE OF COMPLIANCE

**11.1** The purchaser or his representative shall be permitted to inspect night latches in open condition before purchasing, if so desired.

**11.2** Each manufacturer shall furnish, on request, a certificate stating that the mortice night latches comply with the requirements of this standard.

**11.2.1** The manufacturer's certificate shall be implied, if the night latches bear the BIS Certification Mark ( *see* **14.1.1** ).

## 12 PACKING

**12.1** Each mortice night latch together with its keys shall be wrapped in a paper and packed in a card-board box. Each card-board box shall be marked with the following information:

a) Manufacturer's name, or trade-mark;

b) Type of lock;

c) Size of lock;

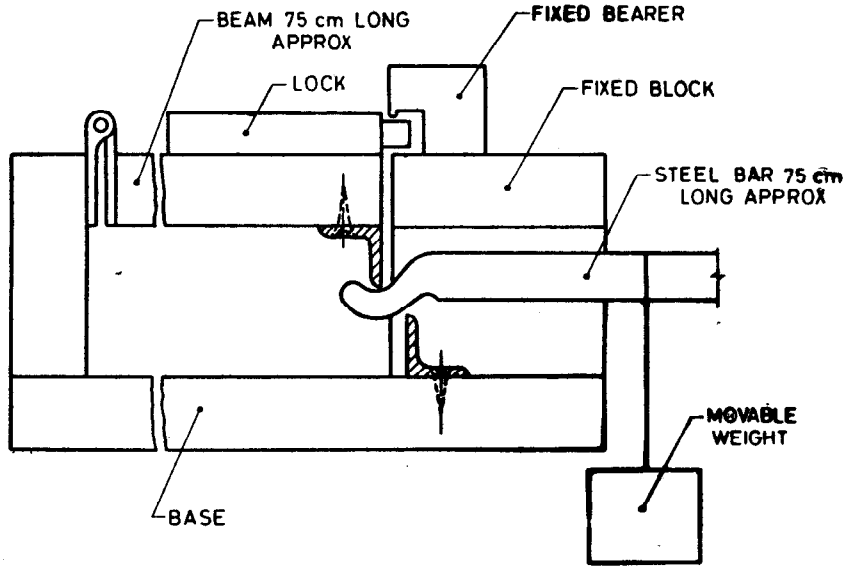


FIG. 2 STRENGTH TEST FOR LOCKING BOLT

d) Quantity in the package; and

e) Country of origin.

## 13 SAMPLING

### 13.1 Lot

In any consignment, all the mortice night latches of the same type, designation and manufactured from the same material shall be grouped together to constitute a lot.

### 13.2 Sample Size

The number of night latches 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 2.

**Table 2 Scale of Sampling and Permissible Number of Defective Night Latches**

| Lot Size | Sample Size | Permissible Number of Defective Night Latches |
|---|---|---|
| (1) | (2) | (3) |
| Up to 200 | 15 | 0 |
| 201 to 300 | 20 | 1 |
| 301 to 500 | 30 | 2 |
| 501 to 800 | 40 | 2 |
| 801 and above | 50 | 3 |

**13.2.1** Night latches for the sample shall be selected at random from at least 10 percent of the packages subjected to a minimum of three packages, equal number of night latches being selected from each such package.

### 13.3 Tests

All the night latches selected as in **13.2** shall be inspected for dimensional requirements ( *see* **5** ) and finish and workmanship ( *see* **9** ) and for compliance with tests specified in **10**. Any night latch which fails to satisfy any one or more of the requirements for the characteristics shall be considered as defective night latch.

### 13.4 Criterion for Conformity

The lot shall be declared as conforming to the requirements of this standard if the number of the defective latches among those inspected does not exceed the corresponding number given in col 3 of Table 2, otherwise it shall be considered as not conforming to the requirements of this standard.

**13.4.1** For testing conformity to the requirements of the material, the manufacturer shall provide a certificate of compliance to the requirements of the corresponding Indian Standards ( *see* **6** ).

## 14 MARKING

**14.1** Each mortice night latch shall be stamped with the following information:

a) Manufacturer's name, or trade-mark;

b) Size of night latch;

c) Number of leavers;

d) Country of origin; and

e) Year of supply, if specified by the purchaser.

**14.1.1** The mortice night latch may also be marked with the Standard Mark.

**14.2** The keys shall be stamped on the head with the serial number of the night latch.

# ANNEX A
( *Clause* 2.1 )

## LIST OF REFERRED INDIAN STANDARDS

| *IS No.* | *Title* | *IS No.* | *Title* |
|---|---|---|---|
| 226 : 1975 | Structural steel ( standard quality ) ( *fifth revision* ) | 742 : 1981 | Zinc base alloy die castings ( *second revision* ) |
| 292 : 1983 | Leaded brass ingots and castings ( *second revision* ) | 1003 ( Part 1 ) : 1977 | Specification for timber panelled and glazed shutters: Part 1 Door shutters ( *second revision* ) |
| 318 : 1981 | Leaded tin bronze ingots and castings ( *second revision* ) | 1365 : 1978 | Slotted countersunk head screws ( dia range 1·6 to 20 mm ) ( *third revision* ) |
| 319 : 1974 | Free-cutting brass bars, rods and sections ( *third revision* ) | 2108 : 1977 | Blackheart malleable iron castings ( *first revision* ) |
| 410 : 1977 | Cold rolled brass sheet, strip and foil ( *third revision* ) | 4454 ( Part 1 ) : 1981 | Steel wires for cold formed springs: Part 1 Patented and cold drawn steel wires — unalloyed (*second revision* ) |
| 617 : 1975 | Aluminium and aluminium alloy ingots and castings for general engineering purposes ( *second revision* ) | 6911 : 1972 | Stainless steel plate sheet and strip |
| 733 : 1983 | Wrought aluminium and aluminium alloy bars, rods and sections ( for general engineering purposes ( *third revision* ) | 7608 : 1987 | Phosphor bronze wires for general engineering purposes ( *first revision* ) |
| 737 : 1986 | Wrought aluminium and aluminium alloy sheet and strip for general engineering purposes ( *third revision* ) | | |

**Standard Mark**

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 Standard 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 BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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