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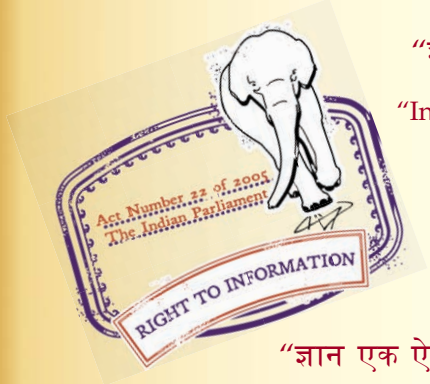
IS 4992 (1975): Specification for door handles for mortice lock (vertical type) [CED 15: Builder Hardware]



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Indian Standard

SPECIFICATION FOR DOOR HANDLES FOR MORTICE LOCKS (VERTICAL TYPE)

(First Revision)

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NEW DELHI 110002

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December 1975

Indian Standard

SPECIFICATION FOR DOOR HANDLES FOR MORTICE LOCKS (VERTICAL TYPE)

(First Revision)

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Indian Standard

SPECIFICATION FOR DOOR HANDLES FOR MORTICE LOCKS (VERTICAL TYPE)

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 22 September 1975, after the draft finalized by the Builder's Hardware Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 This standard was first published in 1968. After reviewing the standard in the light of comments received from the users and manufacturers and progress made by the industry, the Sectional Committee has prepared this revision which incorporates the provision for use of extruded aluminium alloy section for the component door handle housing.

0.3 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.

0.4 This standard is one of a series of Indian Standards on builder's hardware. A list of standards published so far in the series is given on page 10.

0.5 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.

1. SCOPE

1.1 This standard covers the requirements for door handles for operation of mortice locks (vertical type) covered in IS : 2209-1966†.

*Rules for rounding off numerical values (*revised*).
†Specification for mortice locks (vertical type) (*first revision*).

2. TYPE AND SIZE

2.1 Typical details of two types of door handles, namely, handle type and knob type are illustrated in Fig. 1.

2.2 The door handles may be manufactured in other shapes and sizes as agreed to between the manufacturer and the purchaser.

3. MATERIAL

3.1 Suitable alternative materials for manufacture of door handles are given in Table 1; the purchaser should specify the particular material he requires while placing the order.

4. MANUFACTURE AND CONSTRUCTION

4.1 The door handles shall be suitable for fitting to the doors.

4.2 The connecting rod shall fit snugly both in the follower in the mortice lock and the socket handle and when fitted shall work positively in combination with the follower.

5. DIMENSIONS AND TOLERANCES

5.1 The door handles shall be normally made to the dimension and tolerances thereon, as given in Fig. 1.

5.1.1 They may be manufactured in other shapes and dimensions where so agreed to between the manufacturer and the purchaser.

6. PERFORMANCE REQUIREMENTS

6.1 One sample of door handle picked out at random from a lot of 100 handles when fitted to a lock and operated 1 000 times shall not show any damage or ineffectiveness in working.

6.2 When the door handle is in its extreme position in the lock and pulled horizontally with a load of 100 kg, it shall not develop cracks, lose shape or get damaged.

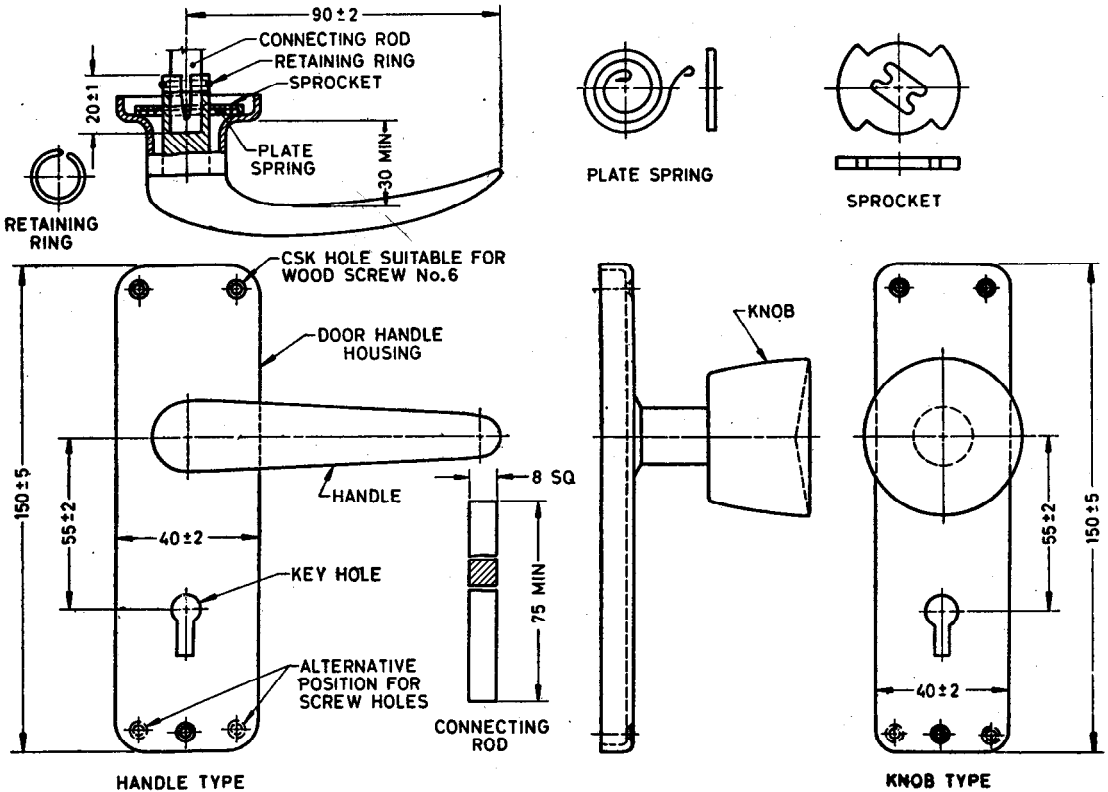
7. WORKMANSHIP

7.1 Door handles shall be free from all defects. All sharp edges shall be removed.

8. FINISH

8.1 Brass door handles shall have natural finish or shall be bright electrochromium plated. Aluminium alloy door handles shall be anodized and the quality of anodized finish shall not be less than that of Grade AC 10 of IS : 1868-1968*. Zinc base alloy die cast handles and mild steel handles shall be bright chromium plated.

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



NOTE — Shapes of the component parts are illustrative and not binding.

All dimensions in millimetres.

FIG. 1 DOOR HANDLE FOR MORTICE LOCK (VERTICAL TYPE)

TABLE 1 REQUIREMENTS FOR MATERIAL FOR DOOR HANDLES FOR MORTICE LOCKS (VERTICAL TYPE)

(*Clause* 3.1)

Sl No.	Part	Material	Requirements	Suitable Grade in Indian Standard
(1)	(2)	(3)	(4)	(5)
i)	Door handle housing	a) Cast brass, 2 mm *Min* in thickness	Copper content shall be not less than 60 percent. Castings shall be free from blow holes, surface and other casting defects	Grade 3 of IS : 292-1961*
		b) Brass sheet, 1·25 mm *Min* in thickness	Cast brass cast from melting sheet cuttings and brass utensils may be used	Alloy Designation CuZn 40 of IS : 410-1967†
		c) Mild steel sheet, 1·25 mm *Min* in thickness	Tensile strength : 32 kgf/mm^2, *Min* and elongation 26 percent, *Min*	Grade St-32-0 of IS : 1977-1969‡
		d) Aluminium alloy pressure die-castings, 2 mm *Min* in thickness	—	IS Designation A-5-M or A-6-M of IS : 617-1959§
		e) Aluminium alloy sheet, 1·25 mm *Min* in thickness	—	IS Designation NS4 – H_1 or HS 20 of IS : 737-1974‖
		f) Aluminium alloy extruded section	—	IS Designation HE 20 or HE 30 of IS : 733-1967¶
		g) Zinc base alloy pressure die-castings, 2 mm *Min* in thickness	—	Alloy 1 or 2 of IS : 742-1966**
ii)	Handle/ knob	a) Cast brass, 2 mm *Min* in thickness	Copper contents shall be not less than 60 percent. Castings shall be free from blow holes, surface and other casting defects	Grade 3 of IS : 292-1961*
		b) Aluminium alloy pressure die-castings, 2 mm *Min* in thickness	—	IS Designation A-5-M or A-6-M of IS : 617-1959§
		c) Aluminium alloy extruded section	—	IS Designation HE 20 or HE 30 of IS : 733-1967¶
		d) Zinc base alloy pressure die-castings, 2 mm *Min* in thickness	—	Alloy 1 or 2 of IS : 742-1966**

(*Continued*)

TABLE 1 REQUIREMENTS FOR MATERIAL FOR DOOR HANDLES FOR MORTICE LOCKS (VERTICAL TYPE) — *Contd*

Sl No.	Part	Material	Requirements	Suitable Grade in Indian Standard
(1)	(2)	(3)	(4)	(5)
iii)	Sprocket	a) Brass sheet, 1·6 mm *Min* in thickness	Cast brass cast from melting sheet cuttings and brass utensils may be used	Alloy Designation CuZn 40 of IS : 410-1967†
		b) Mild steel sheet, 1·6 mm *Min* in thickness	Shall be of good commercial quality steel satisfying the following bend test: 'Suitable test pieces shall at room temperature be bent through 180°, such that the axis of the bend is parallel to the direction of rolling, around twice the thickness of test piece, without showing any signs of fracture or cracking on the outside of the bent portion'	Grade 0-1079 of IS : 1079-1973††
iv)	Connecting rod	a) Mild steel bar	Tensile strength : 32 kgf/mm², *Min* and elongation 26 percent, *Min*	Grade St 32-0 of IS : 1977-1969‡
		b) Aluminium extruded rod	—	IS Designation HE 30-WP of IS : 733-1967¶
v)	Plate spring	Spring steel	—	Grade 1 or Grade 2 of IS : 4454-1967‡‡
vi)	Retaining ring	Spring steel	—	Grade 1 or Grade 2 of IS : 4454-1967‡‡

*Specification for brass ingots and castings (*revised*).
†Specification for rolled brass plate, sheet, strip and foil (*second revision*).
‡Specification for structural steel (ordinary quality) (*first revision*).
§Specification for aluminium and aluminium alloy ingots and castings for general engineering purposes (*revised*).
‖Specification for wrought aluminium alloys, sheet and strip (for general engineering purposes (*second revision*).
¶Specification for wrought aluminium and aluminium alloys, bars, rods and sections (for general engineering purposes) (*first revision*).
**Specification for zinc base alloy die castings (*first revision*).
††Specification for hot rolled carbon steel sheet and strip (*third revision*).
‡‡Specification for steel wires for cold formed springs.

9. SAMPLING AND CRITERIA FOR CONFORMITY

9.1 The method of drawing representative samples of the material and the criteria for conformity shall be as prescribed in Appendix A.

10. MARKING

10.1 Each door handle shall be stamped with the following information:

a) Name of the manufacturer or his trade-mark,
b) Year of manufacture, and
c) Country of origin.

10.1.1 The door handle 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.

11. PACKING

11.1 Each mortice lock door handle shall be wrapped in a suitable paper or polyethylene and packed in a cardboard box. Each cardboard box shall be marked with the following information:

a) Manufacturer's name or trade-mark,
b) Quantity in the package,
c) Country of origin, and
d) Year of manufacture.

11.2 Each packing box shall contain an instruction leaflet regarding use of the door handle, and its suitability for the type of door.

APPENDIX A

(*Clause* 9.1)

SAMPLING AND CRITERIA FOR CONFORMITY

A-1. SCALE OF SAMPLING

A-1.1 Lot — In any consignment, all the door handles for mortice locks of the same type and size and manufactured from the same materials under essentially similar conditions of production shall be grouped together to constitute a lot.

A-1.2 Sample Size — The number of handles 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 HANDLES

Lot Size	Sample Size	Permissible No. of Defective Handles
(1)	(2)	(3)
Up to 100	5	0
101 ,, 150	8	0
151 ,, 300	13	0
301 ,, 500	20	1
501 ,, 1 000	32	2
1 001 and above	50	3

A-1.2.1 Handles for the sample shall be selected at random from at least 10 percent of the packages subject to a minimum of three packages, equal number of handles being selected from each such package.

A-1.3 All the handles selected as in **A-1.2** shall be inspected for manufacture and construction (*see* **4**), dimensional requirements (*see* **5**) and tested for the performance requirement (*see* **6**). A handle failing in any one or more of the requirements for the characteristics shall be considered as defective handle.

A-2. CRITERIA FOR CONFORMITY

A-2.1 The lot shall be considered as conforming to the requirements of the specification if the number of the defective handles found in the sample does not exceed the corresponding number given in col 3 of Table 2, otherwise the lot shall be considered as not conforming to the requirements of this standard.

A-2.2 For conformity of the requirements of the material, the manufacturer shall provide a certificate of compliance to the requirements of the corresponding Indian Standard (*see* **3.1** and Table 1).

INDIAN STANDARDS

ON

BUILDER'S HARDWARE

IS:

204-1974 Tower bolts (*third revision*)
205-1966 Non-ferrous metal butt hinges (*second revision*)
206-1973 Tee and strap hinges (*second revision*)
208-1974 Door handles (*third revision*
281-1973 Mild steel sliding door bolts for use with padlocks (*second revision*)
362-1975 Parliament hinges (*third revision*)
363-1970 Hasps and staples (*second revision*)
364-1970 Fanlight catch (*second revision*)
452-1973 Door spring rat-tail type (*second revision*)
453-1973 Double-acting spring hinges (*second revision*)
729-1969 Drawer locks, cupboard locks and box locks (*second revision*)
1019-1974 Rim latches (*first revision*)
1341-1970 Steel butt hinges (*second revision*)
1495-1970 Mild steel dust-bins (*first revision*)
1823-1974 Floor door stoppers (*second revision*)
1837-1966 Fanlight pivots (*first revision*)
2209-1970 Mortice locks (vertical type) (*second revision*)
2681-1966 Non-ferrous metal sliding door bolts for use with padlocks (*first revision*)
3564-1975 Door closers (hydraulically regulated) (*second revision*)
3818-1971 Continuous (piano) hinges (*first revision*)
3828-1966 Ventilator chains
3843-1966 Steel backflap hinges
3847-1966 Mortice night latches
4621-1975 Indicating bolts for use in public baths and lavatories (*first revision*)
4948-1974 Welded steel wire fabric for general use (*revised*)
4992-1975 Door handles for mortice locks (vertical type) (*first revision*)
5187-1972 Flush bolts (*first revision*)
5899-1970 Bath-room latches
5930-1970 Mortice latch (vertical type)
6315-1971 Floor springs (hydraulically regulated) for heavy doors
6318-1971 Plastic window stays and fasteners
6343-1971 Door closers (pneumatically regulated) for light doors weighing up to 40 kg
6602-1972 Ventilator pole
6607-1972 Rebated mortice locks (vertical type)
7196-1974 Hold fast
7197-1974 Double action floor springs (without oil check) for heavy doors

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	DEFINITION
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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