

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10521 (1983): collapsible gates [CED 11: Doors, Windows and Shutter]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



IS : 10521 - 1983

Indian Standard
SPECIFICATION FOR
COLLAPSIBLE GATES

UDC 69'028'14



© Copyright 1983

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

Indian Standard

SPECIFICATION FOR COLLAPSIBLE GATES

Doors, Windows and Shutters Sectional Committee, BDC 11

Chairman

SHRI T. S. NARAYANA RAO
93 'Aruna' East Road
Basavan Gudi
Bangalore

Members

SHRI H. S. ANAND
SHRI P. N. ANAND (*Alternate*)
SHRI S. N. BASU

Representing

<p>SHRI SHARAN SINGH (<i>Alternate</i>) SHRI J. S. BEDI SHRI G. L. DE (<i>Alternate</i>) DIRECTOR DR H. N. JAGADEESH (<i>Alternate</i>) SHRI P. G. GANDHI SHRI B. P. GANDHI (<i>Alternate</i>) SHRI A. S. GULATI SHRI B. K. JHAJHARIA SHRI A. K. JHAVERI SHRI H. S. SAMBA MURTHY (<i>Alternate</i>) SHRI S. N. JHUNJHUNWALA SHRI S. K. JHUNJHUNWALA (<i>Alternate</i>) SHRI H. N. KHAMBATTA SHRI M. K. LAKHANI SHRI K. S. LAULY LT-COL G. B. SINGH (<i>Alternate</i>) SHRI J. S. MATHARU SHRI K. SREENIVASAN (<i>Alternate</i>) SHRI J. V. MEHTA MAJ B. K. TANEJA (<i>Alternate</i>)</p>	<p>Anand Industries Limited, New Delhi Directorate General of Supplies & Disposals, New Delhi Hopes Manufacturing Co Pvt Ltd, Calcutta Indian Plywood Industries Research Institute, Bangalore Swastik Rolling Shutters and Engineering Works, Bombay Forest Research Institute & Colleges (Timber Mechanics Branch), Dehra Dun Multiwyn Industrial Corporation, Calcutta Ahmedabad Steel Craft and Rolling Mills (Pvt) Ltd, Ahmedabad Premier Wood Craft (P) Ltd, Calcutta Godrej & Boyce Manufacturing Co Ltd, Bombay Maharashtra Housing Board, Bombay Indian Plywood Manufacturing Co Ltd, Bombay Directorate General of Technical Development, New Delhi Engineer-in-Chief's Branch, Army Headquarters, New Delhi</p>
--	--

(Continued on page 2)

© Copyright 1983

INDIAN STANDARDS INSTITUTION

This publication is protected under the *Indian Copyright Act* (XIV of 1957) and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

(Continued from page 1)

<i>Members</i>	<i>Representing</i>
SHRI G. B. MENON	Ministry of Home Affairs (Fire Services)
SHRI G. M. MENON	Indian Aluminium Co Ltd, Calcutta
SHRI K. SURYANARANANAN (<i>Alternate</i>)	
SHRI R. D. MENON	Diana Shutters Pvt Ltd, Madras
SHRI S. ANANTHASUBRAMONEY (<i>Alternate</i>)	
SHRI M. M. MISTRY	National Buildings Organization, New Delhi
SHRI B. D. DHAWAN (<i>Alternate</i>)	
SHRI MOHAN SINGH	Eastern Commercial and Industrial Enterprises (P) Ltd, Bangalore
SHRI S. S. GANDHI (<i>Alternate</i>)	
SHRI J. S. PARMAR	Mysore Plywoods Ltd, Bangalore
SHRI K. SANKARAKRISHNAN	Kutty Flush Doors and Furniture Co Ltd, Madras
SHRI R. S. RAGHAVAN (<i>Alternate</i>)	
SHRI P. K. SINGHLA	Builders' Association of India, Bombay
SHRI T. C. SOLANKI	Indian Metal Windows Association, Bombay
SHRI M. P. SHAH (<i>Alternate</i>)	
SUPERINTENDING SURVEYOR OF WORKS (FOOD)	Central Public Works Department, New Delhi
SURVEYOR OF WORKS (FOOD) (<i>Alternate</i>)	
SHRI G. R. SUNDERAM	Man Industrial Corporation Ltd, Jaipur
SHRI H. G. TODI (<i>Alternate</i>)	
SHRI H. THOMSON	Sitapur Plywood Manufacturers' Ltd, Sitapur
SHRI G. RAMAN, Director (Civ Engg)	Director General, ISI (<i>Ex-officio Member</i>)

Secretary

SHRI C. K. BEBARTA
Senior Deputy Director (Civ Engg), ISI

Indian Standard

SPECIFICATION FOR COLLAPSIBLE GATES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 19 January 1983, after the draft finalized by the Doors, Windows, and Shutters Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Collapsible gates are provided at openings where visibility and manouverability in width are required along with security. These are installed in show rooms, cinema halls, railway platforms, schools, banks, and lifts, etc, where prevention of entry is more important than concealing what is within.

0.3 This standard contains clause **8.1** which requires the purchaser to provide the information at the time of placing of orders.

0.4 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, 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 lays down the requirements regarding materials, fabrication and finish of different types of collapsible gates.

2. TERMINOLOGY

2.0 The various components of a collapsible gates are as defined in 2.1 to 2.6 (*see also* Fig. 1).

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

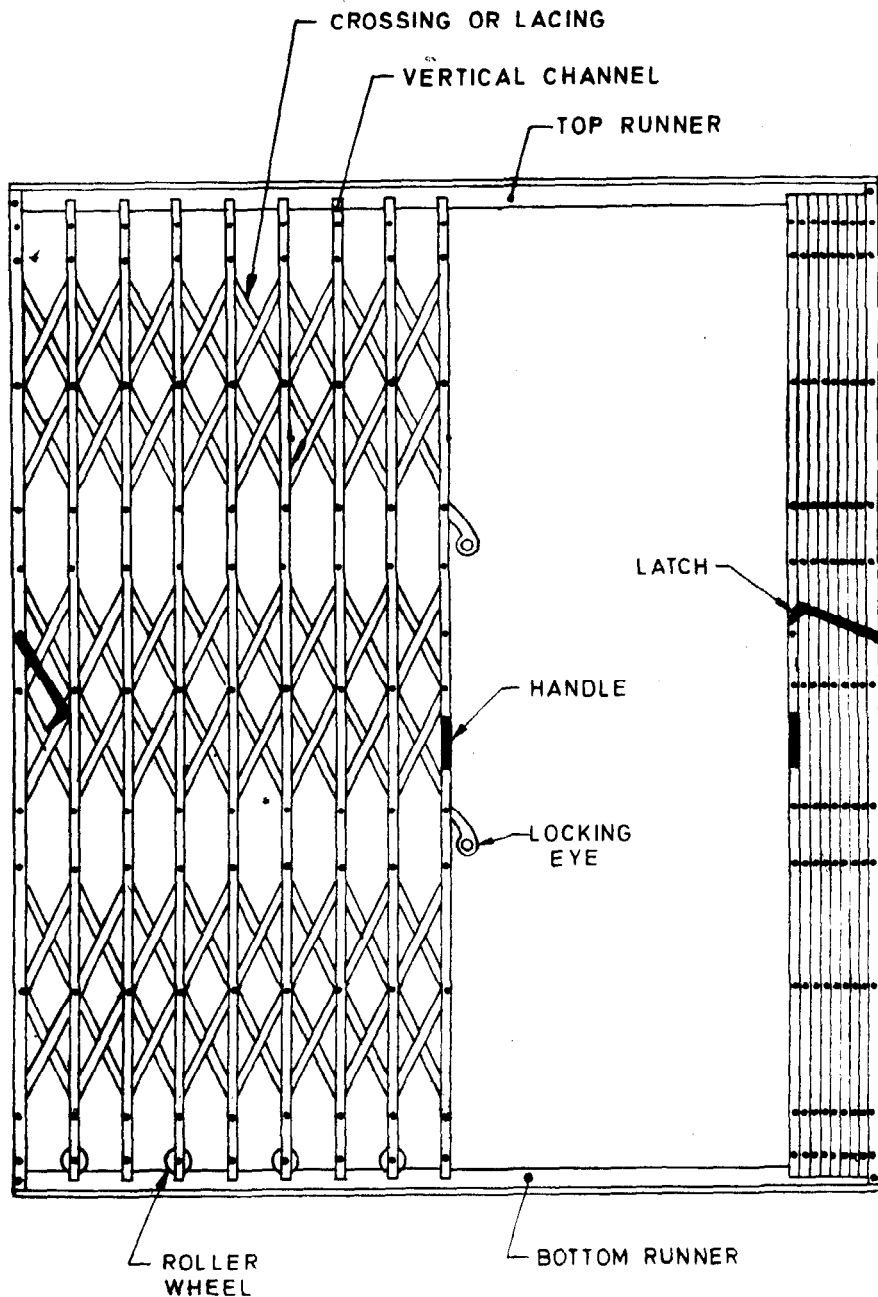


FIG. 1 A TYPICAL ILLUSTRATION OF COLLAPSIBLE GATE

2.1 Top Runner — The flat section provided at the top of the gate which acts as the guide for running of the gate at the top or runner for the wheels to roll when they are fixed at the top. 'T' section also can be used as top runner when the wheels are fixed at bottom.

2.2 Bottom Runner — The 'T' or 'E' section suitably fixed on the ground over which the wheels, attached to the gate, roll and act as the guide for running of the gate at the bottom.

2.3 Vertical Channels — Channels held in pair by means of spacers and rivets and running for the full height of the opening.

2.4 Crossings or Lacings — Flats connecting three adjacent vertical channels as shown in the Fig. 1.

2.5 Spacers or Sockets — Tubes used to keep the distance between a pair of vertical channel uniform. This is an important component, since, if the spacing between the channels is not kept uniform, the collapsing and stretching of the gate would become difficult.

2.6 Roller Wheels — Wheels which carry the entire weight of the gate and roll on the bottom or top runner.

3. TYPES

3.1 Collapsible gates may be classified into the following types :

- a) Gates fixed under the lintel,
- b) Gates fixed outside the opening,
- c) Gates fixed inside the opening, and
- d) Gates fixed on movable top and bottom channels with swinging arrangement on either side.

3.2 The above types may be with single panel collapsible at the right end or left end, or with double panels collapsible at respective ends with wheels attached to the gates rolling on bottom or top runners.

4. SIZES

4.1 Collapsible gates are recommended for a maximum height of 3 m. There is no restriction in width. The purchaser shall, therefore, specify the width and height of the collapsible gates while placing order (see 8.1).

4.2 When the gate is fitted under the lintel, the width and height of the gate shall be the same as that of the opening. But when the gate is fixed

inside or outside the opening, the width of the gate shall be the clear width of opening plus the width of the gate in the collapsed position and the height shall be 150 mm more than the clear height to enable usage of the full opening.

5. MATERIALS

5.1 Vertical Channels — These shall be hot rolled medium channels of at least $18 \times 9 \times 3$ mm and shall be of weldable quality mild steel conforming to IS : 1977-1975*.

5.2 Crossings or Lacings — These shall be flats of mild steel of at least 18×5 mm size conforming to IS : 1977-1975*.

5.3 Top and Bottom Runner — Tees or 'E's used for bottom runner shall have minimum web of 40×12 mm and flange of 40×6 mm, and the flats used for top runner shall be of minimum size 40×12 mm. All these shall conform to IS : 1977-1975*.

5.4 Roller Wheels — These shall be of grey iron castings conforming to grade FG 150 of IS : 210-1978†.

5.5 Spacer or Sockets — These shall be of cast aluminium conforming to IS : 733-1975‡.

5.6 Rivets — These shall not be less than 6 mm diameter, snap headed, and shall conform to IS : 2155-1962§.

6. FABRICATION, WORKMANSHIP AND FINISH

6.1 Collapsible gates shall be fabricated from rolled steel channels, T or E sections and flats as shown in Fig. 1. These shall be provided with roller wheels (see 6.3) at bottom to roll on 'T' or 'E' bottom runners or with wheels at top to roll on flat top runner.

6.2 The channels shall have a maximum spacing of 100 mm when the gate is in closed position. The vertical channels shall be first rivetted in pairs with toes face to face and with the spacers in position. The crossings shall be introduced at appropriate positions and rivetted. One set of crossings shall extend from 450 to 600 mm in height and the clear space between two sets of crossings shall be within 150 mm. The edges shall then be trimmed, locking eyes and handles welded or rivetted and the roller wheels fitted in the respective channels.

*Specification for structural steel (ordinary quality) (second revision).

†Specification for grey iron castings (third revision).

‡Specification for wrought aluminium and aluminium bars, rods, and sections (for general engineering purposes) (second revision).

§Specification for rivets for general purposes (below 12 mm diameter).

6.3 The number and size of roller wheels shall be dependent on the width of the gate and shall be as given in Table 1. The roller wheels shall be capable of taking the weight of the gate. For gates of width more than 1.5 m and up to 2.0 m, the wheels may be fitted with ball bearings; and for gates of width above 2.0 m, the wheels shall be fitted with ball bearings. Single row ball bearings, self lubricating type shall be used.

6.4 The bottom and top runners shall be fabricated separately with necessary holding fixtures for burying in the ground or fixing in the lintel or to the walls, as the case may be.

6.5 Suitable holding fixtures shall be provided for fixing the end channels at the face of the openings.

6.6 Welding is not required in fabricating the gate except as specified under **6.2**. All the components shall, therefore, be capable of being dismantled by cutting away the rivets. Maintenance or replacement of worn out parts shall not, therefore, pose any problem.

6.7 The fabricated parts shall be finished with a coat of red oxide primer, conforming to IS : 102-1962*.

7. ADDITIONAL FIXTURES

7.1 The gate may be provided with safety lever mortice locks.

7.2 Latches may be provided to hold the channels in position when the gate is in open position.

8. INFORMATION TO BE SUPPLIED BY THE PURCHASER

8.1 The purchaser shall supply the following information while placing order :

- a) Height and width of the collapsible gate,
- b) Type of collapsible gate,
- c) Details of construction around the opening,
- d) Whether roller wheels on bottom runner or top runner (with ball bearing requirements), and
- e) Additional fixtures (see **7.1**).

*Specification for ready mixed paint, brushing, red lead, non-setting, priming (revised)

TABLE 1 REQUIREMENTS OF ROLLER WHEELS

(Clause 6.3)

WIDTH AND PANEL	SIZE OF THE ROLLER WHEEL	QUANTITY REQUIRED	WHETHER BALL BEARING TO BE FITTED
(1) m	(2) mm	(3)	(4)
Up to 1.0 single panel	40	2	No
Above 1.0 and up to 1.5 single panel	40	3	No
Above 1.5 and up to 2.0 single panel	50	3	Optional
Up to 2.0 double panel	50	4	Optional
Above 2.0 and up to 2.5 double panel	65	6	Yes
Above 2.5 and up to 3.0 double panel	65	6	Yes
Above 3.0 and up to 3.5 double panel	65	8	Yes
Above 3.5 and up to 4.0 double panel	65	8	Yes

NOTE — For every additional width of 1.0 m or part thereof, two additional wheels shall be provided.

9. MARKING

9.1 Each gate shall be clearly and legibly marked with the following information :

- Name of the manufacturer or trade-mark, if any;
- Height, width and type; and
- Year of manufacture.

9.2 Each gate 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.