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IS 6318 (1971): Specification -plastic window stays and fasteners [CED 15: Builder Hardware]



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IS : 6318 • 1971

Indian Standard

SPECIFICATION FOR
PLASTIC WINDOW STAYS AND FASTENERS

UDC 691.88 : 69.028.2 : [678.742.3]



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INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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SPECIFICATION FOR PLASTIC WINDOW STAYS AND FASTENERS

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AMENDMENT NO. 1 AUGUST 2010
TO
IS 6318 : 1971 SPECIFICATION FOR PLASTIC
WINDOW STAYS AND FASTENERS

[Page 4, Table 1, Sl No. (iii) and (iv)] — Substitute the following for the existing:

Sl No.	CHARACTERISTIC	REQUIREMENT
(1)	(2)	(3)
iii)	Impact strength, <i>Min</i> , kgf/cm (of notch)	4.2
vii)	Deformation, under load, <i>Max</i> , percent, 50°C and 70 kg/cm ²	4.5

(CED 15)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR PLASTIC WINDOW STAYS AND FASTENERS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 November 1971, after the draft finalized by the Builders' Hardware Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Window stays and fasteners (handles) at present are being extensively manufactured out of metals like steel, brass and aluminium. Due to high initial and maintenance cost of above materials it would be advantageous to consider making these accessories out of plastic materials with a view to economize on initial and maintenance costs. It is with this end in view that this standard has been prepared to specify functional as well as performance requirements of window stays and fasteners.

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 contains clause **3.1.1** which permits the manufacturer to manufacture the window stays and fasteners for sizes other than specified if agreed to by the purchaser.

0.5 This standard is one of a series of Indian Standards on builders' hardware. Other standards published so far in the series are given on page 10.

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.

1. SCOPE

1.1 This standard lays down performance and functional requirements of window stays made out of polypropylene and fasteners (handles) made out of nylon.

*Rules for rounding off numerical values (revised).

2. MATERIALS

2.1 Polypropylene used for manufacture of window stays shall have the characteristics as given in Table 1.

TABLE 1 REQUIREMENTS FOR POLYPROPYLENE FOR WINDOW STAYS

SL No.	CHARACTERISTIC	REQUIREMENT
(1)	(2)	(3)
i)	Density, g/ml	0.900 to 0.910
ii)	Tensile strength at yield, <i>Min</i> , kgf/cm ²	315
iii)	Impact strength, <i>Min</i> , kgf/cm (of notch)	3.7
iv)	Water absorption, <i>Max</i> , percent	0.04
v)	Deflection temperature, <i>Min</i> , °C	54
vi)	Weather resistance	Shall retain at least 50 percent of original elongation
vii)	Deformation, underload, <i>Max</i> , percent, 50°C and 70 kg/cm ²	6.0

3. SIZE AND SHAPE

3.1 Window stays and fasteners shall conform to the size and shape given in Fig. 1A and 1B and shall be free from all surface defects, indentations and deformations during moulding process. The section of the window stays and fasteners may be reinforced with suitable rust-proof steel wires, if desired by the purchaser. The ends of the window stays and fasteners shall be smooth to the touch while operating.

3.1.1 The shape and design of window stays and fasteners are illustrative only. These may be manufactured in shapes and sizes other than specified if agreed to between the purchaser and the manufacturer.

4. TESTS

4.1 Test for Window Stays — The whole pattern in the window stay should be capable of restraining the window shutter in three positions so as to make angles of 30°, 60° and 90° with the window frame. Tolerances on positions of restraint shall not exceed $\pm 5^\circ$.

4.1.1 To test the strength of the window stay a force of 40 kgf shall be applied as shown in Fig. 2A at the rate of 6 to 8 times per minute. This test shall be repeated 3 000 times, each operation being application of force in to and fro direction.

4.1.2 At the end of the test there shall be no buckling or deformation induced in the shape, size or section of the window stay.

4.2 Test for Fasteners — For testing the strength of fasteners the force should be applied either at the handle pin or at the sash or meeting rail, at a distance not more than 5 cm from securing end of the fastener in increments of 5 kgf at one minute interval. The fasteners should be able to hold a force of 40 kgf for one minute (*see* Fig. 2B).

4.2.1 For testing the strength of the fastener on a sliding window, the force has to be applied at the handle or grip, if provided, or at the centre of the meeting rail or stile in increments of 5 kgf at one minute interval. A maximum value of 40 kgf shall be held for one minute.

NOTE — Whatever force is needed to cause the unfastened window slide (*see* 4.2.2), the test load shall be increased by a load equal to the sliding load.

4.2.2 The need for the test of sliding arises particularly with horizontal sliding windows. In the larger sizes of sashes, rollers will probably have to be fitted for the requirements to be satisfied. The force is to be increased in increments of 5 kgf at one minute interval and held at the maximum value of 40 kgf for one minute if the sash has not already moved.

5. SAMPLING AND CRITERIA FOR CONFORMITY

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

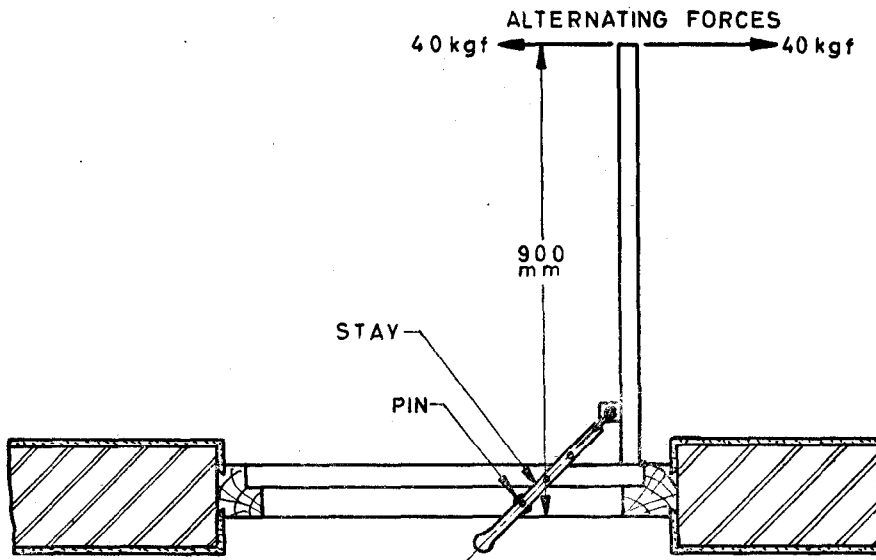
6. MARKING

6.1 Each window stay and fastener shall be stamped with the following information:

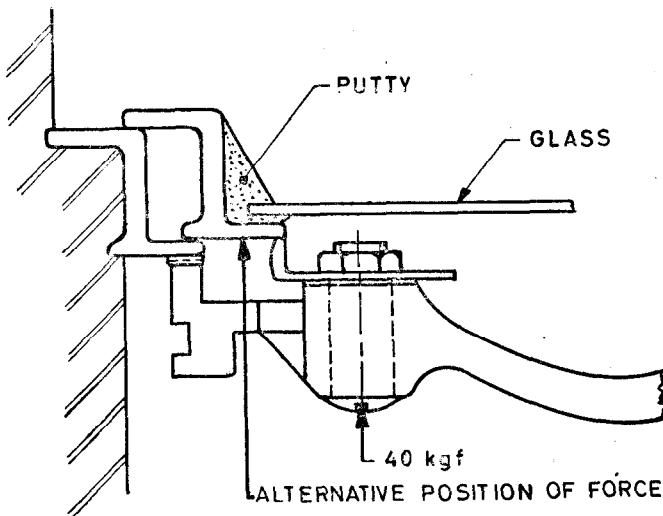
- a) Manufacturer's name and trade-mark.
- b) Year of manufacture.
- c) Country of origin.

6.1.1 The window stay and fastener 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. Presence of this 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 during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. 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.



2A TEST FOR WINDOW STAY



2B TEST FOR WINDOW FASTENER

FIG. 2 TESTS FOR WINDOW STAY AND FASTENER

7. PACKING

7.1 Each window stay and fastener 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 and trade-mark.
- b) Quantity in the package.
- c) Country of origin.
- d) Year of manufacture.

APPENDIX A

(Clause 5.1)

SAMPLING AND CRITERIA FOR CONFORMITY

A-1. SCALE OF SAMPLING

A-1.1 Lot — In any consignment, all the window stays and fasteners 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 window stays and fasteners 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 WINDOW STAYS AND FASTENERS

Lot Size	SAMPLE SIZE	PERMISSIBLE NO. OF DEFECTIVE WINDOW STAYS AND FASTENERS
(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 Window stays and fasteners 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 window stays and fasteners being selected from each such package.

A-1.3 All the window stays and fasteners selected as in **A-1.2** shall be inspected for dimensional requirements (*see 3*) and tested (*see 4*). A window stay and fastener failing in any one or more of the requirements for the characteristics shall be considered as defective.

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 window stay and fastener found in the sample does not exceed the corresponding permissible number given in col 3 of Table 2, otherwise the lot shall be considered as not conforming to the requirements of this standard.

INDIAN STANDARDS

ON

Builders' Hardware

IS:

- 204-1966 Tower bolts (*second revision*)
- 205-1966 Non-ferrous metal butt hinges (*second revision*)
- 206-1962 Tee and strap hinges (*revised*)
- 208-1965 Door handles (*revised*)
- 281-1964 Mild steel sliding door bolts for use with padlocks (*revised*)
- 362-1968 Parliament hinges (*revised*)
- 363-1970 Hasps and staples (*second revision*)
- 364-1970 Fanlight catch (*second revision*)
- 452-1963 Door springs, rat-tail type (*revised*)
- 453-1963 Double-acting spring hinges (*revised*)
- 729-1969 Drawer locks, cupboard locks and box locks (*revised*)
- 1019-1963 Rim latches (*revised*)
- 1341-1970 Steel butt hinges (*second revision*)
- 1495-1970 Mild steel dust-bins (*first revision*)
- 1728-1960 Sheet metal rain-water pipes up to 100 mm nominal size, gutters, fittings and accessories
- 1823-1968 Floor door stoppers (*first 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*)
- 3564-1970 Door closers (hydraulically regulated) (*first revision*)
- 3818-1966 Continuous (piano) hinges
- 3828-1966 Ventilator chains
- 3843-1966 Steel backflap hinges
- 3847-1966 Mortice night latches
- 4621-1968 Indicating bolts for use in public baths and lavatories
- 4948-1968 Welded steel wire fabric for general use
- 4992-1968 Door handles for mortice locks (vertical type)
- 5187-1969 Flush bolts
- 5899-1970 Bathroom latches
- 5930-1970 Mortice latch (vertical type)

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Cement	Plywood and allied products
Concrete design and construction	Poles
Concrete testing	Pozzolanas
Construction equipment	Reinforcement, concrete
Construction practices	Roof and roof coverings
Doors and windows	Safety in construction
Drawing office practice and equipment	Sieves and wire gauzes
Fire fighting equipment	Soil engineering
Fire safety	Stones, building
Flexible floor coverings	Structural design
Floor finishes	Tar and bitumen
Fluid flow measurement	Tiles
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