



# SLOVENSKI STANDARD

## SIST EN 1527:2000

01-maj-2000

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### Stavbno okovje - Okovje za drsna in zgibna vrata - Zahteve in preskusne metode

Building hardware - Hardware for sliding doors and folding doors - Requirements and test methods

Schlösser und Baubeschläge - Beschläge für Schiebetüren und Falttüren - Anforderungen und Prüfverfahren

Quincaillerie pour le bâtiment - Quincaillerie pour portes coulissantes et portes pliantes - Prescriptions et méthodes d'essai

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#### **ICS:**

91.190

Stavbna oprema

Building accessories

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EUROPEAN STANDARD

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August 1998

ICS 91.190

Descriptors: doors, sliding, hardware, definitions, classifications, performance, evaluation, tests, performance tests, fatigue tests, salt spray tests, marking

English version

## Building hardware - Hardware for sliding doors and folding doors - Requirements and test methods

Quincaillerie pour le bâtiment - Quincaillerie pour portes coulissantes et portes pliantes - Prescriptions et méthodes d'essai

Schlösser und Baubeschläge - Beschläge für Schiebetüren und Falttüren - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 2 August 1998.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 33 "Doors, windows, shutters and building hardware", the secretariat of which is held by AFNOR.

A full contribution to the preparation of this European Standard has been made by the European manufacturer's organisation "ARGE".

This European Standard is part of a group of European Standards dedicated to building hardware products.

Informative annex A to this European Standard is indicated in the contents.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 1999, and conflicting national standards shall be withdrawn at the latest by February 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies requirements for all principal components for sliding doors and folding doors of the bi-fold type and multi-panel folding doors but excluding doors and panels. Cycle tests, static load, initial friction and corrosion resistance test are included for fittings and track only. This European Standard covers door gear for all industrial and residential sliding doors and folding doors.

This European Standard does not cover sliding doors round the corner and light bottom sliding doors.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1670 Building hardware - Corrosion resistance - Requirements and test methods.

## 3 Definitions

For the purposes of this Standard, the following definitions apply :

### 3.1 aligner

Fittings which retain a folding door in a flat and aligned closed position (see figure 1).

### 3.2 bottom guide

Fitting which, with a bottom guide channel, controls the lateral movement of a sliding or folding top hanging door.

### 3.3 bottom guide channel

Channel section fitted either to the base of a structure or the bottom edge of a door to accommodate the bottom guide.

### 3.4 bottom pivot

Axis fitted to the bottom of a folding door which turns in a bottom pivot socket (see figure 1).

### 3.5 bottom pivot socket

Fixed component in which the bottom pivot of a folding door is located (see figure 1).

### 3.6 bottom rail

Rail fixed to the base of a structure or floor, on which bottom rollers run.

### 3.7 bottom roller

Fitting attached to the bottom of a door which allows it run on a bottom rail.

### 3.8 folding door, bi-fold type

Door formed by two panels connected by hinges and operating on pivots running in a top track with guide.

### 3.9 heavy sliding door, bottom rolling

Door of mass 100 kg or more with bottom rollers running on a bottom track fixed to the base of the structure or floor, and with a top guide.

### 3.10 heavy sliding door, top hanging

Door of mass 100 kg or more which is suspended by top hangers running in a top track fixed to an overhead structural component, and with a bottom guide.

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### 3.11 hinges

Fittings connecting two panels of a folding door (see figure 1).

### 3.12 light sliding door, top hanging

Door of mass less than 100 kg which is suspended by top hangers running in a top track fixed to an overhead structural component, and with a bottom guide.

### 3.13 multi-panel folding door

Door formed by two or more panels connected by hinges and suspended by top hangers running in a top track fixed to an overhead structural component, or running on bottom rollers with a top guide in a top track.

### 3.14 stop

Fitting used to stop a sliding door at the end of its run.

### 3.15 test cycle

All operations from the closed position, to open the test door to the required position and close it again to the closed position. For straight sliding doors, the travel of door is equal to the panel width.

### 3.16 top bracket

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Support used to carry a top track and secure it to the structure of a building. Brackets can be side-wall fixing, ceiling fixing or adjustable.

### 3.17 top guide

Fitting which, with a top guide track, controls the lateral movement of a bottom rolling sliding door.

### 3.18 top guide track

Track fixed to the top of the structure in which a top guide runs.

### 3.19 top hanger

Roller fixed to a top hanging sliding door which allows it to move laterally.

### 3.20 top pivot

Axis fitted to the top of a folding door which turns in a top pivot socket (see figure 1).

### 3.21 top pivot socket

Fixed component in which the top pivot is located (see figure 1).

### 3.22 top track

Tubular section which carries the hangers of sliding and folding top hanging doors (see figure 1).

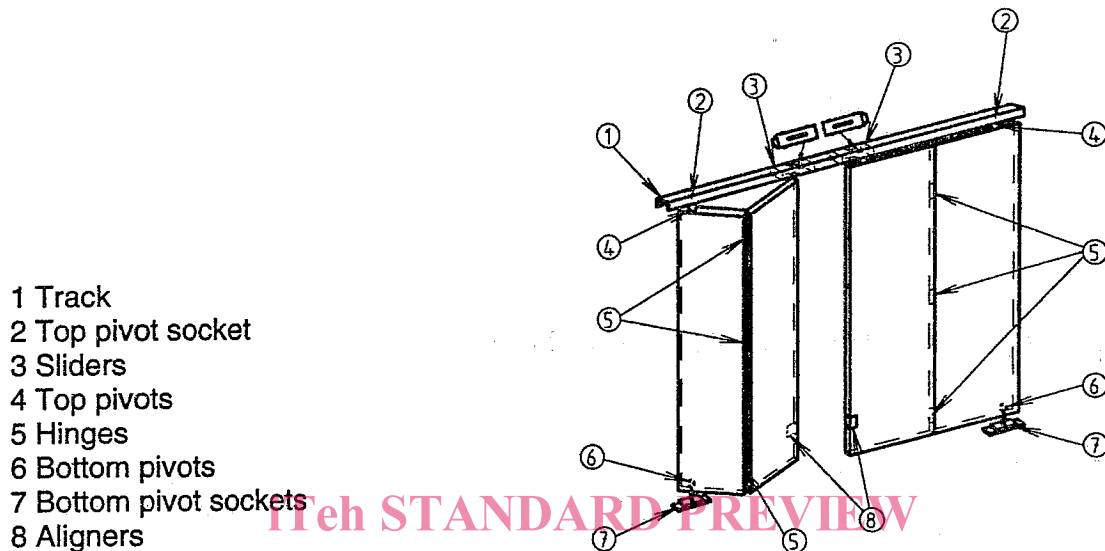


Figure 1: Definitions

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## 4 Classification

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### 4.1 General

For the purposes of this European Standard, sliding doors and folding doors and their fittings shall be classified according to the nine digits coding system described in 4.2 to 4.10.



### 4.2 Category of use (1<sup>st</sup> digit)

No grade identified for these products.

### 4.3 Durability (2<sup>nd</sup> digit)

Six grades of durability are identified for door fittings :

- grade 1 = 2 500 test cycles ;
- grade 2 = 5 000 test cycles ;
- grade 3 = 10 000 test cycles ;



- grade 4 = 25 000 test cycles ;
- grade 5 = 50 000 test cycles ;
- grade 6 = 100 000 test cycles.

#### 4.4 Door mass (3<sup>rd</sup> digit)

Four grades are identified :

- grade 1 = door up to 50 kg ;
- grade 2 = door from 51 kg to 100 kg ;
- grade 3 = door from 101 kg to 330 kg ;
- grade 4 = door over 330 kg.

#### 4.5 Fire resistance (4<sup>th</sup> digit)

Two grades of fire resistance are identified :

- grade 0 = not approved for use on fire door assemblies ;
- grade 1 = suitable for use on fire door assemblies.

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#### 4.6 Safety (5<sup>th</sup> digit)

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No grade identified for these products.

#### 4.7 Corrosion resistance (6<sup>th</sup> digit)

Products are classified from 1 to 4 according to the five grades defined in EN 1670.

Grade 0 is for products not tested.

#### 4.8 Security (7<sup>th</sup> digit)

No grade identified for these products.

#### 4.9 Category of door (8<sup>th</sup> digit)

Three grades are identified :

- grade 1 = sliding door ;

- grade 2 = folding door (bi-fold type) ;
- grade 3 = multi-panel folding door.

#### 4.10 Initial friction (9<sup>th</sup> digit)

Three grades are identified :

**Table 1 : Initial friction**

Door mass	From 0 kg to 50 kg	From 51 kg to 100 kg	From 101 kg to 330 kg	Over 330 kg
Grade 1	50 N	80 N	100 N	5 % of the mass
Grade 2	40 N	60 N	5 % of the mass	4 % of the mass
Grade 3	30 N	40 N	4 % of the mass	3 % of the mass

#### 4.11 Example of classification

---	3	2	0	---	0	---	1	2
-----	---	---	---	-----	---	-----	---	---

This denotes a sliding door with a mass between 51 kg and 100 kg, of which initial friction is equal or less than 60 N, tested to 10 000 cycles, not approved for use on fire door assemblies and not tested for corrosion resistance.

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## 5 Requirements

### 5.1 Criteria for assessing performances

Performance and finishing requirements for sliding doors and folding door fittings shall be assessed according to :

- static load capacity ;
- effort required to overcome initial friction ;
- durability of fittings ;
- smoothness of operation ( bi-fold doors ) ;
- ability to maintain adjustments (bi-fold doors) ;
- corrosion resistance.

A sample tested according to this European Standard is considered acceptable if it meets the performance requirements stated in this European Standard.

## 5.2 General

Each test panel shall be made in order to meet the following requirements :

- for static load test : two times rating of the hangers or bottom rollers ;
- for initial friction test : mass of the door shall be in accordance with the manufacturer's specifications for hangers or bottom rollers ;
- for durability test : mass of the door shall be in accordance with the manufacturer's specifications for hangers or bottom rollers.

Throughout the durability test, all parts shall remain in serviceable condition and shall not require any adjustment. Fittings shall satisfy the requirements of the initial friction test before and after the durability test.

Each hanger shall be supplied with assembly accessories and shall be supplied "ready to be mounted" with the mechanism oiled inside.

## 5.3 Performance requirements for sliding doors and folding door fittings

Sliding doors and folding door fittings shall meet performance requirements in accordance with table 2.

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