SLOVENSKI STANDARD
SIST EN 1158:2000

01-maj-2000

Stavbno okovje - Naprave za usklajeno zapiranje vrat - Zahteve in preskusne metode

Building hardware - Door coordinator devices - Requirements and test methods

Schlösser und Baubeschläge - Schließfolgeregler - Anforderungen und Prüfverfahren

Quincaillerie pour le bâtiment - Dispositifs de sélection de vantaux - Prescriptions et méthodes d'essai

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English version

Building hardware - Door coordinator devices - Requirements and test methods

Quincaillerie pour le bâtiment - Dispositifs de sélection de vantaux - Prescriptions et méthodes d'essai

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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.

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CEN

European Committee for Standardization
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Europäisches Komitee für Normung

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Contents

Foreword

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

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of an identical text or by endorsement, at the latest by August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

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

Work is in progress in order to support the implementation of the European Standards by evidence which demonstrates the conformity of products to the technical requirements set out in those standards.

In order not to delay the publication of the present European Standard, those conformity assessment criteria related to Door coordinator devices will be published separately. They will be incorporated in this European Standard when next revised.

Normative and informative annexes are indicated in the contents list.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 door coordinator devices for double leaf swing doors fitted with door closers, and includes both separately mounted devices and mechanisms incorporated in door closers. Door coordinator devices are used where it is necessary to ensure the correct sequence of closing of double leaf swing doors, for example doors with rebated meeting stiles.

Door coordinator devices manufactured in accordance with this European Standard are recommended for use wherever there is a requirement for reliable sequential closing of double leaf swing fire/smoke doors incorporating rebated meeting stiles.

Door coordinator devices for use on fire/smoke doors need additional attributes in order to contribute actively to meeting the essential requirements of safety in case of fire, either independently or as part of a complete door assembly.

These additional requirements for door coordinator devices for use on a fire/smoke door assembly are specified in normative annex A.

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 1154	Building hardware - Controlled door closing devices - Requirements and test methods.
prEN 1155	Building hardware - Electrically powered hold-open devices for swing doors - Requirements and test methods.
prEN 1670	Building hardware - Corrosion resistance for hardware for doors, windows, shutters and curtain walling - Requirements and test methods.
prEN 1634	Fire testing of door and shutter assemblies

3 Definitions

For the purpose of this European Standard, the following definitions apply :

3.1 door coordinator devices

3.1.1 gravity arm coordinator

See annex B, figure B 1.1.

3.1.2 swing arm coordinator

See annex B, figure B.1.2.

3.1.3 double arm swing coordinator

See annex B, figure B.1.3.

3.1.4 coordinator incorporated in a door closing device

See annex B, figures B.1.4a and B.1.4b.

3.2 controlled door closing device (door closer)

See EN 1154.

3.3 closing moment

See EN 1154.

3.4 power size

See EN 1154.

3.5 hold-open

See EN 1154.

3.6 rebated meeting stiles

See annex B, figure B.2.1.

3.7 active leaf

The first opening and last closing leaf of a rebated single swing double door set.

3.8 inactive leaf

The last opening and first closing leaf of a rebated double leaf swing door.

3.9 waiting position

The angular position at which the active leaf is held to allow the inactive leaf to close first.

3.10 carry bar

A component that ensures, in the case of the inactive leaf being operated first, that the active leaf is moved beyond the waiting position.

3.11 automatic swing door operator

A closing device for swing doors that incorporates a powered opening mechanism.

3.12 automatic mode

The operation of two automatic swing door operators in which the correct coordination of the opening and closing sequence of a rebated double leaf swing door, is achieved by means of the operator mechanisms.

3.13 test cycle

See EN 1154.

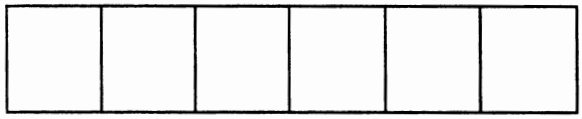
3.14 door coordinator size

A measure for the door coordinator device related to the power size of the door closing devices fitted.

4 Classification

4.1 General

For the purposes of this European Standard, door coordinator devices shall be classified according to the following 6 digit coding system :



4.2 Category of use (first digit)

Only one category of use is identified for door coordinator devices :

- grade 3 : for all internal and external doors for use by the public, and others, with little incentive to take care, i.e : where there is some chance of misuse of the door.

4.3 Number of test cycles (second digit)

Two test durations are identified for door coordinator devices manufactured to this European Standard :

- grade 8 - 500 000 test cycles : for door coordinator devices incorporated in, or for use in conjunction with, automatic swing door operators, and for devices incorporated in a door closer (see 5.2.5b) ;

- grade 5 - 50 000 test cycles : for all other door coordinator devices (see 5.2.5a).

4.4 Test door mass (third digit)

Five door mass grades and related coordinator sizes are identified according to table 1 of this European Standard.

Where a door coordinator device is suitable for a range of door closer power sizes, both the minimum and maximum sizes shall be identified.

EXAMPLE : the following marking denotes a door coordinator device suitable for a range of door closer power sizes from size 4 to 6.

3	5	6 4	0	1	0

4.5 Fire resistance (fourth digit)

Two grades of fire resistance are identified for door coordinator devices manufactured to this European Standard :

- grade 0 : not suitable for use on fire/smoke door assemblies ;

- grade 1 : suitable for use on fire/smoke door assemblies, subject to satisfactory assessment of the contribution of the door coordinator device to the fire resistance of specified fire/smoke door assemblies. Such assessment is outside the scope of this European Standard (see prEN 1634-1).

  Annex A indicates additional requirements for door coordinator devices manufactured to this grade.

4.6 Safety (fifth digit)

All door coordinator devices are required to satisfy the essential requirement of safety in use. Therefore only grade 1 is identified.

4.7 Corrosion resistance (sixth digit)

Five grades of corrosion resistance are identified in accordance with prEN 1670 :

- grade 0 : no defined corrosion resistance ;

- grade 1 : mild resistance ;

- grade 2 : moderate resistance ;

- grade 3 : high resistance ;

- grade 4 : very high resistance.

Table 1

Door coordinator size	Test door leaf mass kg	Recommended door leaf width mm max	Distance between hinge centrelines mm max	Test door friction Nm max
3	60	950	1900	0,3
4	80	1100	2200	0,4
5	100	1250	2500	0,5
6	120	1400	2800	0,6
7	160	1600	3200	0,8
NOTE : This table relates to doors with equal leafs only.				

5 Requirements

5.1 Requirements concerning product information and design

5.1.1 A door coordinator device manufactured to this European Standard shall be supplied with clear, detailed instructions for its installation, regulation and maintenance, including recommendations for the type of carry bar to be used for specific applications, for example where both leaves have an emergency exit function.

For a door coordinator device which is not incorporated in a door closer these instructions shall include the precise range of door closer power sizes for which it is intended.

Where the door coordinator device is recommended for use on a range of door constructions (for example : leaf width and thickness, unequal leaves, hinge projection, rebate dimensions) the instructions shall state the limits applicable, and shall give details of any special fixing required.

5.1.2 Door coordinator devices manufactured to this European Standard shall be supplied with all protective plates and parts necessary for the correct operation of the device.

5.1.3 Door coordinator devices manufactured to this European Standard shall enable correct coordination of the door leaves from any angle to which they can be opened, if necessary by the use of a carry bar.

5.2 Performance requirements

5.2.1 General

When tested in accordance with clauses 6 and 7, the door coordinator device shall satisfy the performance requirements of 5.2.2 to 5.2.6 and 5.2.7 and 5.2.8 as appropriate.

5.2.2 Closing overload performance

When tested in accordance with 7.2.4, the door coordinator device shall withstand an applied moment of 300 Nm without damage.

5.2.3 Manipulation performance

With the active test door leaf deliberately closed ahead of the inactive leaf according to 7.2.5 the next opening operation of the active leaf to a maximum of 40° shall restore the correct coordination operation.

5.2.4 Resistance of waiting position

After the active leaf has been subjected to a closing moment of 50 Nm at the minimum waiting position, according to 7.2.6, the door coordinator device shall achieve correct sequential closing of the rebated test doors.

5.2.5 Durability

a) Grade 5 door coordinator devices : When tested in accordance with 7.2.7, these devices shall achieve 25 000 test cycles with both leaves opened solely by operating the inactive leaf, and 25 000 test cycles with both leaves operated independently to 90°.

b) Grade 8 door coordinator devices : When tested in accordance with 7.2.7, these devices shall achieve 25 000 test cycles with both leaves opened solely by operating the inactive leaf, 25 000 test cycles with both leaves operated independently to 90°, and 450 000 test cycles with the device operating in automatic mode.

5.2.6 Damage

Throughout the test programme there shall be no damage to the door coordinator device that would adversely affect its performance to this European Standard.

5.2.7 Corrosion resistance

5.2.7.1 The requirements of salt spray test described in prEN 1670 shall be met, according to its classification (see 4.7).

5.2.7.2 After being subjected to the relevant salt spray test the door coordinator device shall meet the requirement of 5.2.3.