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Hang- en sluitwerk - Mechatronisch  
deurbeslag - Eisen en  
beproevingmethoden

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methods

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Voorbeeld  
Preview

EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 16867**

November 2018

ICS 91.190

English Version

**Building hardware - Mechatronic door furniture -  
Requirements and test methods**

Quincaillerie pour le bâtiment - Ensemble plaques  
béquilles mécatroniques - Exigences et méthodes  
d'essai

Schlösser und Baubeschläge - Mechatronische  
Türbeschläge - Anforderungen und Prüfverfahren

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## European foreword

This document (prEN 16867:2018) 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 document is currently submitted to CEN Enquiry.

No existing European Standard is superseded.

This European standard is one of a series of European standards dedicated to building hardware products.

European standards for mechanically operated lever handles and knob furniture (EN 1906) are also available.

The performance tests incorporated in this standard are considered to be reproducible and as such will provide a consistent and objective assessment of the performance of these products throughout CEN Member.

Preview

## Introduction

The development of building hardware to include electrically and electronic operations and control has introduced a large number of products on the market.

For locks and door furniture the range of electrical or electronic components to be fitted to existing mechanical locks or door furniture to a complete Mechatronic Door Furniture (MDF) has increased.

Also complete units with lock and door furniture in unique combination to MDF occur frequently.

Typically MDF is installed directly on the door leaf and includes all functions like operating the follower of the lock, reading and decoding the credential and power.

Following components and units are covered by the standard.

Type A: Handle or knob operated door furniture with electrically operated activator, reading unit for credential and power supply to be combined with a mechanical operated lock where the lock meets EN 12209 or prEN 15685.

Type B: Handle or knob operated door furniture with reading unit for credential and power supply to be combined with electrically operated locks where the lock meets EN 14846.

This standard does not cover electrically operated locks or striking plates in combination with an access control system not fitted on the door.

This standard provides the MDF with requirements for:

- category of use to ensure the performance during its normal use;
- durability to ensure good performance during lifetime;
- specification for system management;
- suitability for use on fire resistant/smoke controlled doors;
- environmental resistance for good performance during lifetime in different environmental conditions;
- security for different types of credentials;
- attack resistance to ensure use on Burglary resistant doors;
- product information to give summary of the performance.

The performance tests incorporated in this European standard are considered to be reproducible and as such will provide a consistent and objective assessment of the performance of these devices throughout CEN Member States.

It is assumed that MDF will conform to the legal regulations i.e. RED - Radio Equipment Directive 2014/53/EU.

On occasions there may be a need for additional functions within the design of the MDF. Purchasers should convince themselves that the products are suitable for their intended use. This is particularly important when the operation of such additional functions is safety-related. Accordingly, this European standard includes assessment of such features when they are included in the MDF design.



# 1 Scope

## 1.1 General

This document applies to Mechatronic door furniture (MDF) fitted on the door set which gives the possibility to control the locking and/or release part through an electronic authorization means. This can be operable by credentials (i.e. card, code, biometric).

The MDF according to this document is combined with locks according to EN 12209, EN 14846, prEN 15685 or may be a part of an emergency exit device according to EN 179, EN 1125 or EN 13637.

The MDF may be stand alone or linkable to an external control system.

The document would allow classifying the MDF upon several characteristics such as category of use, durability, environmental, security, and type of operating device.

The suitability of the MDF for use on fire or smoke-door assemblies is determined by fire resistance tests conducted in addition to the performance testing specified by this document.

## 1.2 Exclusions

This document does not cover:

- mechatronic cylinders according to EN 15684;
- electromechanical operated locks and striking plates according to EN 14846.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 179, *Building hardware — Emergency exit devices operated by a lever handle or push pad, for use on escape routes — Requirements and test methods*

EN 636:2012+A1:2015, *Plywood — Specifications*

EN 1125, *Building hardware — Panic exit devices operated by a horizontal bar, for use on escape routes — Requirements and test methods*

EN 1303, *Building hardware — Cylinders for locks - Requirements and test methods*

EN 1634-1, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 1: Fire resistance test for door and shutter assemblies and openable windows*

EN 1634-2, *Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware — Part 2: Fire resistance characterisation test for elements of building hardware*

EN 1634-3, *Fire resistance and smoke control tests for door and shutter assemblies, openable windows and elements of building hardware — Part 3: Smoke control test for door and shutter assemblies*

EN 1670:2007, *Building hardware — Corrosion resistance — Requirements and test methods*

EN 1906:2012, *Building hardware — Lever handles and knob furniture — Requirements and test methods*

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EN 12209, *Building hardware — Mechanically operated locks and locking plates — Requirements and test methods*

EN 13637, *Building hardware — Electrically controlled exit systems for use on escape routes — Requirements and test methods*

EN 14846, *Building hardware — Locks and latches — Electromechanically operated locks and striking plates - Requirements and test methods*

EN 15684, *Building hardware — Mechatronic cylinders — Requirements and test methods*

prEN 15685, *Building hardware — Requirements and test methods — Multipoint locks, latches and locking plates*

EN 60068-2-1, *Environmental testing — Part 2-1: Tests — Test A: Cold (IEC 60068-2-1)*

EN 60068-2-2, *Environmental testing — Part 2-2: Tests — Test B: Dry heat (IEC 60068-2-2)*

EN 60068-2-6, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal) (IEC 60068-2-6)*

EN 60068-2-27, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock (IEC 60068-2-27)*

EN 60068-2-30, *Environmental testing — Part 2: Tests — Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle) (IEC 60068-2-30)*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61000-4-2, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test (IEC 61000-4-2)*

EN 61000-4-3, *Electromagnetic compatibility (EMC) — Part 4-3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3)*

EN 61000-4-4, *Electromagnetic compatibility (EMC) — Part 4-4: Testing and measurement techniques — Electrical fast transient/burst immunity test (IEC 61000-4-4)*

EN 61000-4-5:2014, *Electromagnetic compatibility (EMC) — Part 4-5: Testing and measurement techniques — Surge immunity test (IEC 61000-4-5)*

EN ISO 10666, *Drilling screws with tapping screw thread — Mechanical and functional properties (ISO 10666)*

EN ISO 15480, *Hexagon washer head drilling screws with tapping screw thread (ISO 15480)*

EN ISO 15481, *Cross recessed pan head drilling screws with tapping screw thread (ISO 15481)*

EN ISO 15482, *Cross recessed countersunk head drilling screws with tapping screw thread (ISO 15482)*

EN ISO 15483, *Cross recessed raised countersunk head drilling screws with tapping screw thread (ISO 15483)*

ISO/IEC 18033-3:2010, *Information technology — Security techniques — Encryption algorithms — Part 3: Block ciphers*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 3.1

##### **access card**

card or tag, read only or read write, without integrated circuit, does not provide encryption. Can be used with contact or contactless

EXAMPLES magnetic stripe, Wigand, barcode

#### 3.2

##### **actuator**

electrically operated means to effect or enable operation of the MDF "at rest" position  
unforced condition of the lever handle or knob

#### 3.3

##### **attack**

unauthorized attempt to open a MDF by various techniques (destructive and or non-destructive techniques)

#### 3.4

##### **audit trail**

functionality intended to provide a record of MDF and/or its credential events that will identify the individual credential used to operate the MDF

#### 3.5

##### **backplate**

element whose purpose is, firstly, functional, providing a bearing for the rotation of a lever handle or knob and the means of attachment to the door; and, secondly, decorative, working as a trim plate to cover holes provided in the door for the passage of spindles, keys or lock cylinders

#### 3.6

##### **coupled**

status of the activator when the bolt and/or latch bolt can be operated by the handle, knob/ thumb turn or electrically

#### 3.7

##### **credential**

identification means containing information necessary to authorize operation of the MDF

#### 3.8

##### **cylinder**

device, usually distinct from its associated lock or latch, operated by a key, knob or thumb turn

#### 3.9

##### **door furniture**

combination of lever handles or knobs on backplates or roses for the purpose of operating latches or locks

**prEN 16867:2018 (E)****3.10  
escutcheon**

surround with a shaped hole to accommodate a key or a lock cylinder, with or without a pivoted cover plate, intended primarily to protect the door leaf from abrasion caused by keys

**3.11  
external plate**

backplate or rose that is fitted on the external face of a door

**3.12  
False Acceptance Rate  
FAR**

probability that the system incorrectly authorizes a non-authorized person, due to incorrectly matching the biometric input with a template

Note 1 to entry: The FAR is normally expressed as a percentage, following the FAR definition this is the percentage of invalid inputs which are incorrectly accepted.

**3.13  
FAR-1**

FAR-1 ( $1/\text{FAR}$ ) is the inverse of FAR

**3.14  
half set**

single lever or knob attached to a plate or rose which enables operation of the lock or latch from one side of the door only

**3.15  
Integrated Circuit Card  
ICC**

card, tag or device with an integrated circuit

Note 1 to entry: Can be used with contact or contactless (RFID), active or passive.

EXAMPLES: RFID, Smartcard.

**3.16  
inside**

The side of the door that is facing the controlled area

**3.17  
internal plate**

backplate or rose that is fitted on the internal face of a door

**3.18  
knob**

element for mechanical hand operation of the MDF

**3.19  
latchplate**

backplate adapted for use with a latch and having no keyhole or cylinder aperture

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