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Hang- en sluitwerk - Mechatronische cilinders - Eisen en beproevingsmethoden

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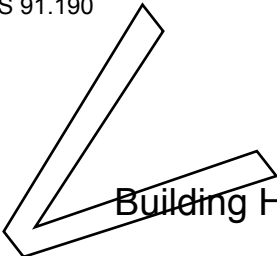
Voorbeeld
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English Version

Building Hardware - Mechatronic cylinders - Requirements and test methods

Quincaillerie pour le bâtiment - Cylindres mécatroniques - Exigences et méthodes d'essai

Schlösser und Baubeschläge - Mechatronische Schließzylinder - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 33.

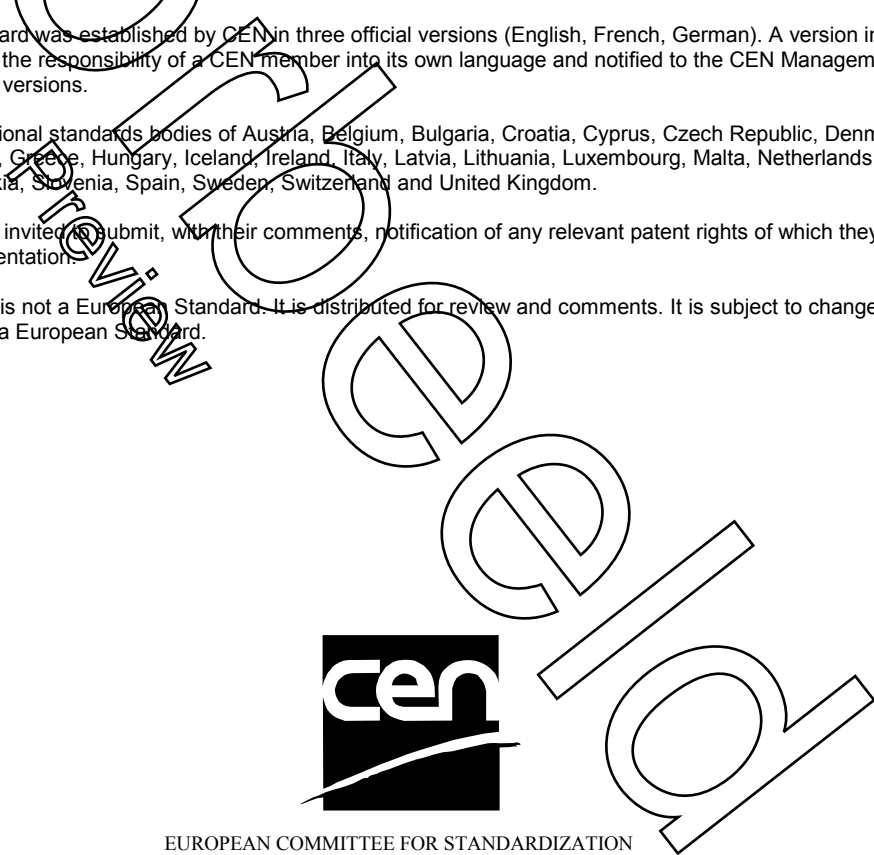
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Management Centre: Avenue Marnix 17, B-1000 Brussels

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Preview
prEN 15684

Foreword

This document (prEN 15684:2010) 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 the CEN Enquiry.

Forbiede
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Introduction

Mechanical cylinders have been used to provide security and control of locks. Increasing demand for higher security, flexibility of master key systems, flow control, copy control of keys, etc. have made it desirable to incorporate additional functions to such mechanical cylinders, and new technologies have made it possible to develop electronically controlled cylinders.

Increasingly such Mechatronic Cylinders (MCs) form a part of the security system of a building and may involve the use of electrical locking and controlling elements.

The performance tests incorporated in this CEN document 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 MCs will conform to the legal regulations i.e. of the Electromagnetic Compatibility (EMC) - Directive 89/336/EEC, The Low Voltage (LV) - Directive 73/23/EEC, Radio & Telecommunications Terminal Equipment (R&TTE) - Directive 1999/5/EC and other relevant directives concerning electronic apparatus.

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1 Scope

This document specifies requirements for performance and testing of Mechatronic Cylinders and their keys and/or electronic keys.

It applies to cylinders for such locks designed to be normally used in buildings. It also applies to cylinders for use with other hardware products such as exit devices, door operators, etc. or access control systems and alarm systems.

It establishes categories of use based on performance tests and grades of security based on design requirements and on performance tests that simulate attack.

Corrosion resistance shall conform to EN 1670:2007.

On occasions there may be a need for additional functions within the design of the cylinder. Purchasers should satisfy 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 document includes assessment of such features when they are included in the cylinder design.

This CEN document does not cover any other element of a security system, other than those directly involved in the control of a cylinder.

It does not provide for any particular design of products.

The suitability of cylinders for use on fire or smoke-door assemblies is determined by fire performance tests conducted in addition to the performance testing specified by this CEN document, see Annex A.

2 Normative references

The following referenced documents are indispensable for the application 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 1303:2005, *Building hardware — Cylinders for locks — Requirements and test methods*

EN 1634-1:2008, *Fire resistance tests for door and shutter assemblies — Part 1: Fire doors and shutters*

prEN 1634-2:2008, *Fire resistance tests for door and shutter assemblies — Part 2: Fire door hardware — Building hardware for fire resisting doorsets and openable windows*

EN 60068-2-1:1993, *Environmental testing — Part 2: Tests; Tests A: Cold*

EN 60068-2-2:1993, *Environmental testing — Part 2: Tests — Tests B: Dry heat*

EN 60068-2-6:2008, *Environmental testing — Part 2-6: Test methods — Tests Fc: Vibration (sinusoidal)*

EN 60068-2-29:1998, *Environmental testing — Part 2-29: Test methods — Test Eb and guidance: Bump*

EN 60068-2-30:2006, *Environmental testing — Part 2-30: Tests — Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

EN 60529:1992, *Specification for degrees of protection provided by enclosures (IP code)*

EN 61000-4-2:2009, *Electromagnetic compatibility (EMC) — Part 4-2: Testing and measurement techniques — Electrostatic discharge immunity test*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1303:2005 and the following apply.

3.1
audit trail capability
 degree of functionality intended to provide a record of MC and/or its key events that will identify the individual credential used to operate the MC

3.2
attack
 unauthorized attempt to open a MC by various techniques (destructive and or non-destructive techniques)

3.3
mechatronic cylinder
MC
 device with an integrated or a remote electronic system, which is to be used with a lock for the purpose of operating the lock after verifying the authorization of an electronic key, and which can be replaced by a mechanical cylinder conforming to EN 1303:2005 without replacing any door furniture

3.4
key
 separate device corresponding to the cylinder, which can mechanically operate the cylinder

NOTE For the explicit understanding of certain requirements and tests, a key can also be called an "electronic key" when it contains, in addition to its mechanical feature, information necessary to authorize operation of the MC.

3.5
electronic key
accrediting device
 device containing information necessary to authorize operation of the (mechatronic) cylinder

NOTE 1 for simplification, an electronic key is sometimes called a key.

NOTE 2 an electronic key is a kind of electronic code device with which a mechatronic cylinder can be used.

3.6
knob
 element of the cylinder for mechanical operation of the cylinder

NOTE A knob could also be a thumb turn.

3.7
time zone
 degree of functionality intended to provide security by limiting the time that a valid credential will operate the MC

3.8
dummy key
 key which fits in the key way of a cylinder/mechatronic cylinder

NOTE This key does not have any coding, mechanical, magnetic or electronic, to operate the cylinder (see Annex B type A).

3.9
electronic dummy key
 key which fits in the key way of a cylinder/mechatronic cylinder

NOTE This key has the right mechanical and/or magnetic code but no electronic code, to operate the cylinder (see Annex B type B).

4 Requirements

4.1 General

The structure of the specified requirements and test procedures reflects the classification in accordance with Clause 7.

4.2 Category of use

4.2.1 Key strength

The key of the MC shall conform to the requirements of EN 1303:2005, 4.2, with a torque of 2,5 Nm..

Compliance is checked by the test methods given in EN 1303:2005, 5.2.

4.2.2 Stability of electronic key

The electronic keys shall be able to withstand a freefall from 1,5 m height, without loss of function and without the need to reassemble.

Compliance is checked by the test method given in 6.3.2.2.

4.2.3 Wrong electronic code

When using the right mechanical code the MC shall be capable of resisting a torque on the key of 3,5 Nm (or the maximum torque that can be transmitted with the normal manufacturers key if less than 3,5 Nm) without loss of function.

Compliance is checked by the test method given in 6.2.2.

If a MC is equipped with a knob (or thumb-turn) on the outside (replacing the key function) and this MC is not protected by a clutch to prevent damage in case of excessive torque being applied to the knob, the MC shall be capable of resisting a torque of 5 Nm (+5 %), without loss of function.

4.2.4 Bump requirements

The MC and its keys shall be able to withstand bumps.

The MC shall conform to the requirements given in Table 1.

The MC and the key may have temporary degradation or loss of function and/or data, but the MC shall remain in secured position. The loss of function and/or data shall be self-recoverable within 5s.

Compliance is checked by the test methods given in 6.3.2.3.

4.2.5 Vibration requirements

The MC and its keys shall be able to withstand vibrations during lifetime.

The MC shall conform to the requirements given in Table 1.

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