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Building hardware - Mechatronic padlocks - Requirements and test methods

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This standard includes the English version of the European Standard.

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

Schlösser und Baubeschläge - Mechatronische Hangschlösser - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 11 May 2017.

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European foreword

This document (EN 16864:2017) 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of an identical text or by endorsement, at the latest by March 2018, and conflicting national standards shall be withdrawn at the latest by March 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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Introduction

Mechanical padlocks have been used to provide security and control of external doors, cabinets and movable items. Increasing demand for the flexibility of master key systems, audit trail, copy control of keys, etc. has made it desirable to incorporate additional functions into such mechanical padlocks, and new technologies have made it possible to develop mechatronic padlocks. A mechatronic padlock uses either pure electrically operated means or combination of electrically operated and mechanical means to achieve security.

The test methods are specified in detail to ensure reproducibility at any testing establishment within Europe, and the acceptance criteria are defined objectively to ensure consistency of assessment.

Mechanical performance of the mechatronic padlock is based on EN 12320:2012.

It is assumed that mechatronic padlocks (MPs) will conform to the legal regulations i.e. of the Electromagnetic Compatibility (EMC) Directive 2014/30/EU, The Low Voltage (LV) Directive 2014/35/EU, Radio and Telecommunications Terminal Equipment (RTTED) - Directive 1999/5/EC and other relevant directives concerning electronic apparatus.

On occasions there may be a need for additional functions within the design of the padlock. 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 European Standard includes assessment of such features when they are included in the padlock design.

1 Scope

This European Standard specifies requirements for performance and testing of mechatronic padlocks (MPs) and their keys and/or electronic keys.

It establishes categories of use based on performance tests and grades of security based on design requirements and on performance tests that simulate attack. If the design incorporates mechanical security means in addition to the mechatronic means, these are also tested.

This European Standard does not cover any other element of a security system, other than those directly involved in the control of a padlock.

This European Standard does not cover the physical testing of multi-function devices such as Smartphones that may be used as part of the control system.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12320:2012, *Building hardware - Padlocks and padlock fittings - Requirements and test methods*

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

EN 60068-2-1, *Environmental testing - Part 2-1: Tests - Test A: Cold*

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

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

EN 60068-2-27:2009, *Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock*

EN 60068-2-30:2005, *Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP Code)*

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

EN ISO 10666:1999, *Drilling screws with tapping screw thread - Mechanical and functional properties (ISO 10666:1999)*

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 10899, *High-speed steel two-flute twist drills — Technical specifications*