ICS 91.190 SLOVENSKÁ TECHNICKÁ NORMA Máj 2021

STN	**Stavebné kovanie Mechatronické zámkové vložky Požiadavky a skúšobné metódy**	**STN EN 15684 16 6252**

Building hardware - Mechatronic cylinders - Requirements and test methods

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/21

Obsahuje: EN 15684:2020

Oznámením tejto normy sa ruší
STN EN 15684 (16 6252) z apríla 2013

132400

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15684

November 2020

ICS 91.190 Supersedes EN 15684:2012

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 European Standard was approved by CEN on 25 October 2020.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 15684:2020) 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of an identical text or by endorsement, at the latest by May 2021, and conflicting national standards shall be withdrawn at the latest by May 2021.

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.

This document supersedes EN 15684:2012.

In comparison with EN 15684:2012, the following significant changes have been made:

— Classification - minimum number of codes changed to credential security;

— Classification - attack resistance refers to EN 1303;

— Credential security introduced, with the same principle as in EN 16867.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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.

Mechanical performance of the mechatronic cylinder is based on EN 1303.

Mechatronic Cylinder can technically be described in three main designs:

— a cylinder with electrical actuator and mechanical operated detaining elements;

— a cylinder with electrically operated locking part and a key for mechanically rotating the plug;

— a cylinder with electrically operated locking part and with manual operated opening/closing function.

NOTE Motor driven cylinders where the cam is rotated by a motor are not covered by this document.

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 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 MC will conform to the legal regulations, e.g. RED – Radio Equipment Directive 2014/53/EU.

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.

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 monitoring facilities 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.

This document includes assessment of additional features when they are included in the cylinder design.

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

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 document; see Annex A.

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

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, *Building hardware — Lever handles and knob furniture — Requirements and test methods*

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

EN 60529:1991[1)], *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

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

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

EN ISO 15480, *Fasteners — 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*

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