Secure storage units - Classification and methods of test for resistance to fire - Part 2: Data rooms and data container

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 1047-2:2019 sisaldab Euroopa standardi EN 1047-2:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 1047-2:2019 consists of the English text of the European standard EN 1047-2:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.04.2019.	Date of Availability of the European standard is 03.04.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.220.40, 13.310, 35.020

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English Version

Secure storage units - Classification and methods of test for resistance to fire - Part 2: Data rooms and data container

Unités de stockage en lieu sûr - Classification et méthodes d'essai de résistance au feu - Partie 2: Conteneurs et chambres réfractaires

Wertbehältnisse - Klassifizierung und Methoden zur Prüfung des Widerstandes gegen Brand - Teil 2: Datensicherungsräume und Datensicherungscontainer

This European Standard was approved by CEN on 11 February 2019.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 1047-2:2019) has been prepared by Technical Committee CEN/TC 263 "Secure storage of cash, valuables and data media", the secretariat of which is held by BSI.

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 October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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 1047-2:2009+A1:2013.

This document EN 1047 *Secure storage units — Classification and methods of test for resistance to fire is composed of two parts:*

— *Part 1: Data cabinets and diskette inserts*

— *Part 2: Data rooms and data container*

In comparison with EN 1047-2:2009+A1:2013, the following changes have been made:

— references have been updated;

— the definitions have been updated to the state of the art;

— the requirements in Table 1 have changed;

— the requirements for doors have been updated (see 4.2);

— for easier and shorter reading the general requirements (for instance equipment of the test specimen and position of fire-retarding penetration seals) for data rooms type A and data room type B as well as data containers have moved into one new clause (see 5.1);

— the configuration (including a number and type of cables and pipes reaching into the room) is defined more precisely and is updated to the state of the art for the type test and the series products (see3.8, 5.1.2, and 7.2);

— to make sure that customers wishing to have higher data rooms, the test specimen in the furnace is allowed to be higher than the limit of 2 700 mm which was in the standard before (see 5.2.2 and 5.3.1);

— an additional type test for the floor has been added (see 5.2.4, 5.3.3, 5.4.3, 5.5, 6.2.1d, 6.3.7, 6.6.3 and Annex A);

— the requirements for the comparison test have changed (see Table 1, 5.6, 6.2.1e, 6.3.8, 6.4.5, and 6.6.4);

— the thermocouples have been repositioned for the data room test (see 6.3.4);

— the requirements for series products have been updated and have been moved from the scope to the new Clause 7 "series products". Above all the height of a data room may only be increased by 35 % and decreased by 35 % (before both were at 50 %);

— the figures in the standard have been updated;

— editorial changes have been made throughout the standard.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The testing conditions given in this European Standard provide a basis for simulating fires to determine, in a reproducible way, the fire resistance of data rooms and data containers.

The values for the maximum temperature increase in protection classes R60D and C60D specified in accordance with Table 1 in this European Standard relate to the relatively short time of high temperature exposure occurring during a fire test; in general, they are not experienced by data media and systems hardware stored in data rooms and data containers in the normal and correct way.

EN 1363-1 establishes the general principles for determining the fire resistance of various elements of construction when subjected to standard fire exposure conditions. Alternative and additional procedures to meet special requirements are given in EN 1363-2. The development of the temperatures and the relative humidity in the interior of a data room and data container cannot be measured under the standard series EN 1363.

The sensitivity of media (see 3.5) and hardware systems (see 3.6) to temperature and humidity requires additional protection with regard to excessively high temperatures and relative humidity, proof of which cannot be furnished through type tests in accordance with the European Standards EN 1363-1 and EN 1363-2. This additional protection requires a series of product solutions, the performance of which is type tested and certified on the basis of the standard series EN 1047.

EN 1047-1 covers the type testing of data cabinets as freestanding units.

EN 1047-2 covers the type testing of data rooms and data containers. For wall, ceiling and floor elements type tested within the framework of this system test, proof of an additional protection can be furnished in accordance with the European Standards EN 1363-1 and EN 1363-2.

1 Scope

This part of the document EN 1047 specifies requirements for data rooms and data containers. It includes a method of test for the determination of the ability of data rooms and data containers to protect temperature and humidity sensitive data media (see 3.5) and hardware systems (see 3.6) from the effects of fire. A test method for measuring the resistance to mechanical stress (impact test) provided by data rooms type B and data containers is also specified.

Requirements are also specified for test specimens, the technical documentation of the test specimens, materials specimens, physical fittings, the correlation of test specimens with the technical documentation and the preparation for type testing, test procedures as well as the series production.

In addition, a scheme to classify data rooms and data containers from the test results is given (see Table 1).

As well as providing protection against fire, correctly installed data rooms and data containers offer a defined protection against impacts caused by failure during fire of components and objects external to the data room or data container.

Data rooms and data containers having the same design, protection and construction features (type and thickness of construction and protective materials, rebate geometry, lockings, doors, etc.) will only be given the same protection classification as that of the test specimen if the tolerances are within the ranges specified in Clause 7.

NOTE This document does not regulate the use of data rooms in the meaning of the building laws of the respective countries. In the construction of data rooms, it is advised to consider the respective national requirements.

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 206, *Concrete — Specification, performance, production and conformity*

EN 1363-1:2012, *Fire resistance tests - Part 1: General Requirements*

EN 1363-2:1999, *Fire resistance tests - Part 2: Alternative and additional procedures*

EN 1364-1:2015, *Fire resistance tests for non-loadbearing elements - Part 1: Walls*

EN 1364-2, *Fire resistance tests for non-loadbearing elements - Part 2: Ceilings*

EN 1992-1-1, *Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings*

EN 12735-1, *Copper and copper alloys - Seamless, round tubes for air conditioning and refrigeration - Part 1: Tubes for piping systems*

EN 13369:2018, *Common rules for precast concrete products*

EN 50441-2, *Cables for indoor residential telecommunication installations - Part 2: Screened cables - Grade 1*

EN 50525-3-21, *Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) - Part 3-21: Cables with special fire performance - Flexible cables with halogen-free crosslinked insulation, and low emission of smoke*

EN 60584-1, *Thermocouples - Part 1: EMF specifications and tolerances (IEC 60584-1)*

EN 61515, *Mineral insulated thermocouple cables and thermocouples (IEC 61515)*

HD 361 S3:1999, *System for cable designation*

ISO/IEC 11801, *Information technology — Generic cabling for customer premises*

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
test specimen
data room type A, data room type B or data container designed to protect media, hardware systems and valuables against the effects of fire, or construction elements (e.g. floor, wall) of the data room or data container

3.2
data room type A
room consisting of walls, ceiling and floor which provides the fire resistance specified in this standard (see Table 1)

Note 1 to entry: When installed within walls and ceilings fulfilling the requirements for integrity, insulation and load bearing capacity for 90 min according to EN 1365-1 and EN 1365-2, respectively. The floor of the data room type A shall satisfy the fire resistance requirements specified in this standard and provide the same protection against the penetration of water vapour as the wall and ceiling construction

3.2.1
exterior cell
construction built for testing to simulate the room into which the internal cell of the data room type A in accordance with 3.2 is installed

3.2.2
internal cell
independent and self-supporting construction intended for installation as a data room type A in a building situation which satisfies the requirements for walls, ceiling and floor specified in 3.2