SLOVENSKI STANDARD
SIST EN 1047-2:2000

01-oktober-2000

Varnostne shranjevalne enote - Zahteve, klasifikacija in metode preskušanja protipožarne odpornosti – 2. del: Prostori in vsebniki za shranjevanje podatkov

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

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

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

Ta slovenski standard je istoveten z: **EN 1047-2:1999**

ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
13.310	Varstvo pred kriminalom	Protection against crime
35.220.99	Druge naprave za shranjevanje podatkov	Other data storage devices

SIST EN 1047-2:2000 **de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1047-2

November 1999

ICS 03.060; 13.220.40; 35.020; 55.180.10

English version

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

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 16 April 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

Foreword

This European Standard 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, as one of a series of standards concerned with fire resistance of secure storage units. The first part of this Standard is published as:

EN 1047-1 Secure storage units - Classification and methods of test for resistance to fire - Part I: Data cabinets.

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 2000, and conflicting national standards shall be withdrawn at the latest by May 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

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

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

1 Scope

This Part of EN 1047 specifies requirements for fire-resisting 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 contents and associated hardware systems from the effects of fire outside the data room or data container. A test method for measuring the resistance to impact of data containers and some data rooms is also specified.

Requirements are also specified for documents to accompany the test specimens, materials specimens, physical fittings, test specimens, correlation of test specimens with the documentation, preparation for testing and test procedures.

The results of the tests are used to classify data rooms and data containers.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

prEN 206	Concrete - Performance, Production and Conformity
prEN 1363-1	Fire resistance tests - Part 1: General requirements
prEN 1363-2:	Fire resistance tests - Part 2: Alternative and additional procedures
prEN 1364-1	Fire resistance tests for non load bearing elements — Part 1: Walls
prEN 1365-1	Fire resistance tests for load bearing elements - Part 1: Walls
prEN 1365-2	Fire resistance tests for load bearing elements- Part 2: Floor and roofs

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 test specimen: Data room type A, data room type B or data container intended for installation within a building or room and designed to protect hardware systems, media and valuables against the effects of fire.

3.2 data room type A: Room which provides the fire resistance specified in this standard when installed within walls fulfilling the requirements for integrity, insulation and load bearing capacity for 90 min in a fire resistance test according to prEN 1365-1, under a ceiling of reinforced concrete not less than 140 mm thick and with all building elements which support the data room fulfilling the requirements for load bearing for 90 min in a fire resistance test according to prEN 1365-2.

NOTE: Data room type A is also known as a 'room within a room' structure.

3.3 exterior cell: Construction built for testing to simulate the room into which the internal cell is installed.

3.4 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

NOTE: The definitions of exterior cell and internal cell apply only to data room type A.

3.5 data room type B: Room which provides the fire resistance specified in this standard when the floor onto which it is installed fulfills the requirements for integrity, insulation and load bearing capacity for 90 min in a fire resistance test according to prEN 1365-2.

3.6 data container: Self-supporting structure which is movable in one piece and whose internal base area is ≤3 m^2, whose internal height ≤2,20 m and which provides the fire resistance specified in this standard when it is installed in a building on a floor fulfilling the requirements for integrity, insulation and load bearing capacity for 90 min in a fire resistance test according to prEN 1365-2.

NOTE: Data containers differ from the data cabinets of EN 1047-1 in containing hardware and therefore having cable entry and ventilation facilities and also in requiring to be installed on a floor having a specified minimum resistance to fire.

3.7 media: Material holding information, including paper documents, magnetic tape, films, cassettes, optical disks and video and audio cassettes except those that lose their data at temperatures below 70 ºC .

3.8 hardware system: Electronic system which stores, processes and moves or transmits data and/or has an archive function.

NOTE: Types of hardware systems include host computers, master computers, master control modules, PI tape drives, network computers and MB tape drives with robot support.

3.9 accessories: Seals through which cables or pipes enter a data room or data container and the ventilators which may be fitted to data rooms or data containers.

4 Classification, locking and accessories

4.1 Classification

Data rooms and data containers shall provide protection for their contents against the effects of fire as specified in table 1.

Table 1: Protection class requirements

Protection class	Maximum temperature increase	Maximum relative Humidity
R60D	50 °C	85%
C60D	50 °C	85%

where

R refers to data rooms;
C refers to data containers;
60 refers to the 60 minute fire exposure time;
D characterizes the kind of data media and system entities which may be protected and includes all kinds of data media except those that lose their data at temperatures below 70 °C.

As well as providing fire resistance, correctly installed data rooms and data containers shall protect their contents against impacts caused by failure during fire of components and objects external to the data room or data container.

NOTE: Data rooms type A are only installed in building situations of a specified minimum fire integrity and are not tested for impact resistance.

4.2 Doors and Locking

Doors of data rooms and data containers shall be fitted with a lock. Data room doors shall be self-closing in a fire.

4.3 Ventilation accessories and openings

If data rooms and data containers are fitted with ventilation accessories these shall be self closing in a fire. Data rooms and data containers may also have openings through which cables and pipes may enter.

5 Documents, material specimens, physical fittings, test specimens and correlation

5.1 Documents to accompany the test specimens

Construction drawings (detailed engineering drawings) shall accompany the test specimen giving:

a) the height, width and depth of the test specimen and its accessories, thickness of all materials, dimensions of rebate edges, materials, welds, fastenings and adhesives and their respective methods of execution, seals, etc. and any other technical features,

b) instructions for erecting test specimens,

c) a statement of whether the test specimen is to be tested as a data room type A, a data room type B or a data container.

d) details of other sizes of data rooms or data containers to which the applicant expects the test results to apply (see Annex A).

NOTE. Three sets of construction drawings should be authenticated by the test laboratory. One set is returned to the applicant, one set forms part of any monitoring documentation for certification and quality assurance and one set is kept in the files of the test laboratory.

5.2 Material samples

Detailed specifications of all heat protection materials and seals used in the test specimen shall be provided with the documentation (5.1) and samples of these materials shall accompany the test specimen.

5.3 Physical fittings

Data rooms and data containers shall be fitted with the number and size of cables necessary for the safe and complete functioning of the hardware systems they are expected to contain and protect.

Ventilation units, both air supply and air exhaust, shall be fitted in the test wall defined in this standard. However classification shall apply to the same ventilation units fitted into other walls.

5.4 Data room type A test specimens

5.4.1 An exterior cell shall be erected in the furnace and within it the data room type A test specimen shall be installed as an internal cell in the manner as if it were a data room being installed within a building or room.

5.4.2 The walls, base and ceiling of the exterior cell shall be constructed of individual prefabricated units, each (100 ± 5) mm thick, made of reinforced concrete grade C20/25 to prEN 206 with a density of (2400 ± 200) kg/m^3, and shall be connected to one another.

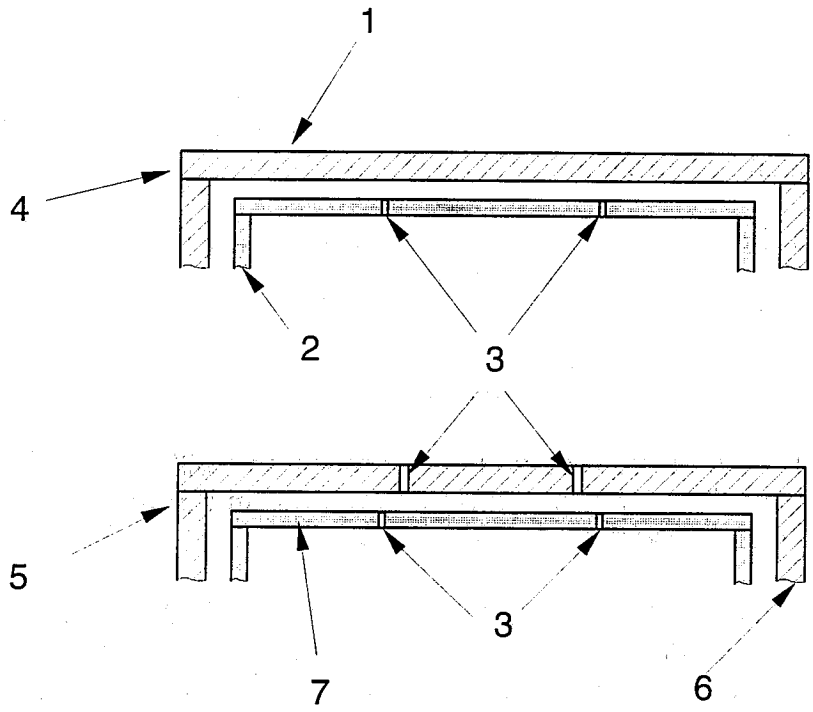
NOTE: Bolts may be used to connect the concrete prefabricated units and measures taken to protect the bolts against the effects of fire.

The exterior cell shall have the following external dimensions:

height	(2 800 ± 100) mm
width	(3 000 ± 100) mm
length	(4 000 ± 100) mm

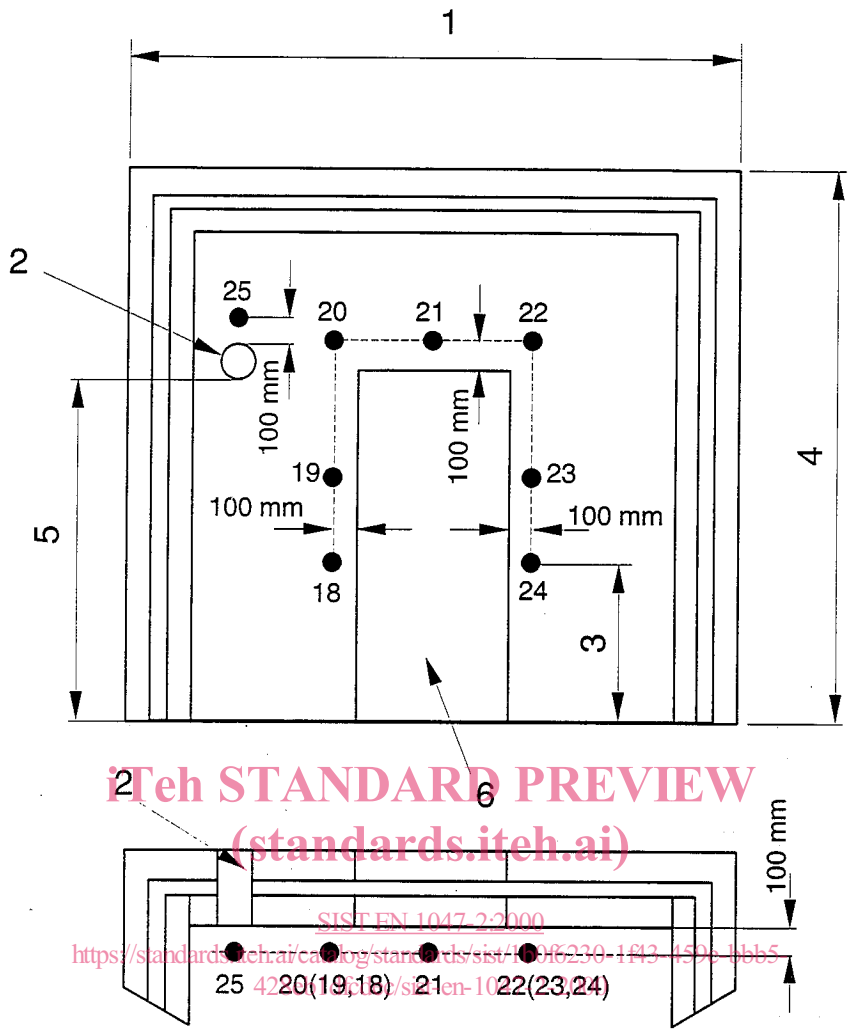
5.4.3 The wall panels of the internal cell shall all have the same materials, thickness and construction. The floor and the ceiling shall have the same protection materials as the walls panels and their thickness shall be not less than the thickness of the wall panels. The internal cell shall have a minimum of two joints between the walls, (see figure 1). Additional types of joint shall be tested if any designs for which certification is sought require these.

5.4.4 If accessories are fitted to the test specimen they shall be installed as follows: the wall opposite the door shall have the ventilation openings; cable and pipe penetrations shall be in the wall containing the door (see figure 2). Any accessories shall be fitted above two-thirds of the internal height of the test specimen.



1. Exterior Cell (precast concrete units)
2. Internal Cell
3. Joints
4. Data Room type A
5. Data Room type B
6. Data Room exterior
7. Lining

Figure 1. Arrangements of data room for test (horizontal sections)



1. Specimen width = 3000 mm
2. Cable entry
3. Half door height
4. Specimen height = 2800 mm
5. 2/3 Test specimen internal height
6. Door

Figure 2. Construction and measuring points for data rooms