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Secure storage units - Requirements, classification and methods of tests for resistance to burglary - Part 2: Deposit systems

Wertbehältnisse - Anforderungen, Klassifizierung und Methoden zur Prüfung des Widerstandes gegen Einbruchdiebstahl - Teil 2: Deposit-Systeme

Unités de stockage en lieux sûrs - Exigences, classification et méthodes d'essai pour la résistance à l'effraction - Partie 2: Systèmes de dépôt

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Secure storage units - Requirements, classification and methods of tests for resistance to burglary - Part 2: Deposit systems

Unités de stockage en lieux sûrs - Exigences, classification et méthodes d'essai pour la résistance à l'effraction - Partie 2: Systèmes de dépôt

Wertbehältnisse - Anforderungen, Klassifizierung und Methoden zur Prüfung des Widerstandes gegen Einbruchdiebstahl - Teil 2: Deposit-Systeme

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 263.

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Contents

Page

Foreword

This document (prEN 1143-2:2012) 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 document is currently submitted to the CEN Enquiry.

This document will supersede EN 1143-2:2001.

The main changes of prEN 1143-2:2012 to EN 1143-2:2001 are as follows:

a) Editorial - Restructuring and rewording

Restructuring and rewording have been made to make the standard easier to read and understand. Mainly the test clauses of deposit system attacks are changed so the cross-references in the document are reduced.
A new tool list (Annex C) of "Additional tools for deposit tool attack tests (manipulation and fishing devices)" has been added.

b) Technical - Implementation of relevant additions and changes in EN 1143-1 done earlier since 2001

During the period from December 2001 when the second part of EN 1143 (EN 1143-2) was issued up to now the part 1 of the standard (EN 1143-1) has been reviewed several times and two amendments were published.

— CD attacks as in EN 1143-1:1997+A2:2002 have not been implemented as an option

— GAS explosive attacks as in prEN 1143-1:2011 have been implemented as an option (see 9.4 and 10.4)

c) Fixing system test

Night safes and deposit safes now have the identical test procedure on their fixing system (see Clause 11). The anchoring test now complies with those of ATM safes according to prEN 1143-1:2011. It is first attempted to remove or weaken any external fixings, then a force is applied and afterwards a tool attack test on the fixing attachments is made.

d) Updating of references

The references in the existing standard were out of date and therefore updated.

e) Reduction of the scope

The scope has been reduced so the standard is valid only for deposit systems with receiving units (when closed) having at least one internal side < 1 m (see 4.3).

f) Distributed systems

Requirement of distributed systems were added (see 4.4.3). Examples of integrated and distributed deposit systems are given in Annex B.

This European Standard is one of a series of product standards for secure storage units of different types.

Introduction

This standard gives the possibility to classify deposit systems according to their resistance to burglary attacks. The laboratory tests are simulating known attack methods and such methods and tools which are supposed to be used for attacking these types of products.

Human intervention tests are included. The results and repeatability of these depend on the skill of the testing team. Testing laboratories are therefore recommended to participate in inter-laboratory activities to ensure that the standard is used in an overall common approach. Otherwise results from different laboratories may differ too much.

The tests and requirements in this standard are based on the following assumptions (conditions) of use and installation of deposit systems:

Deposit safe: For deposit safes the depositing functions are inside the premises of the company and are only intended to be disposable for the authorised personnel of the company. It is assumed that the authorised personnel are doing the depositions. Deposit safes are installed so the deposit functions are not available for the public. It is also assumed that a burglar does not have the code or key to the deposit functions for some kind of attacks.

Night safe: For night safes the depositing functions are available to customers of financial institutions and if locked disposable only for the authorised personnel of the customer. Night safes are installed so the deposit functions are available also for the public. It is also assumed that a burglar may have the code or key to the depositing functions.

Receiving units are basically safes according to EN 1143-1 which have apertures necessary for operation of the deposit system.

Examples of different design of deposit systems are shown in Annex A.

Deposit systems are classified in a system of grades, corresponding to that of EN 1143-1. In addition there are requirements and test methods for burglary and manipulation of the deposit system functions.

1 Scope

This European Standard specifies requirements and tests methods for deposit systems, and classifies the systems according to their burglary resistance and their resistance to the theft of deposits.

This European Standard comprises two types of deposit system:

— night safes which provide depositing services for the customers of financial institutions without giving access to the content of the night safe.

— deposit safes which enable the personnel of a company to place money or valuables in safe custody without giving access to the content of the deposit safe. The installation condition for deposit safe according to this standard is that the depositing functions are installed inside the premises of the company and are only disposable for the personnel of the company.

Parts of a Deposit system are a receiving unit, an input unit and in some cases, a chute.

The standard includes design requirements for deposit systems controlled by programmable controllers and for the software for these. Controller hardware testing is restricted to mechanical or electromechanical attacks of electric motors, sensors, coils and similar devices; but software testing as attempts to influence controller software or controller hardware is not part of this standard.

Deposit systems may have devices for functions such as user identification and/or counting and registration of money. Tests of and requirements for classification of such functions are not included.

This standard does not cover protection of persons using the deposit system or the prevention of fraud committed by operators of the deposit system.

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.

FprEN 1143-1:2011, *Secure storage units — Requirements, classification and methods of test for resistance to burglary — Part 1: Safes, ATM safes, strongroom doors and strongrooms*

EN 1300, *Secure storage units — Classification for high security locks according to their resistance to unauthorized opening*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1143-1 and EN 1300 and the following apply.

3.1 Deposit system definitions

3.1.1
Deposit system
assembly of a receiving unit and an input unit and optionally a chute for their inter-connection and with all features for depositing and protection.

Deposit systems can be either deposit safes or night safes.

NOTE A deposit system serves the purpose to securely accept and securely store deposits of cash and/or valuables.

3.1.2
Deposit safe
a deposit system whose requirements are related to the security provisions needed to enable employees to deposit into the receiving unit without having to unlock the receiving unit door

NOTE The input unit of this system are intended to be used only by the employees and not be placed in a public area.

3.1.3
Night safe
a deposit system whose security requirements relate to use by financial institutions for providing a secure receiving service for customer deposits without having to unlock the receiving unit door

NOTE The input unit of this system are intended to be used by the customers of financial institutions and can be placed in a public area.

3.1.4
Receiving unit
secure storage unit with openings necessary to accommodate a deposit system.

3.1.5
Internal space
interior of the receiving unit which is bounded by the inside surfaces and the boltwork cover plate(s) of the door of the receiving unit body and excluding parts of the chute or input unit (if any) inside the receiving unit.

3.1.6
Design capacity
usable internal space for storing deposits

3.1.7
Input unit
user-access facility into which deposits are placed for passing into the receiving unit

NOTE 1 Access to input units may be controlled by locks or devices that may provide identification of the depositor.

NOTE 2 In this context ‘input unit’ refers to the device intended for deposit items, as opposed to the input unit for locks in EN 1300.

3.1.8
Chute
optional connection between input unit and receiving unit through which the deposit passes

3.1.9
Deposit
item placed into the input unit and intended for passing into the receiving unit

NOTE The deposit may be money or valuables that are deposited in special containers, bags or envelopes, or single bank notes or bunches of bank notes.

3.1.10
Integrated deposit system
deposit system controlled by programmable controllers in which the physical deposit sequences cannot be changed through links to devices outside the receiving unit

Example of integrated deposit system, see Annex B.

NOTE It is permitted that the controller of the integrated deposit system transmits data about the system status and events.

3.1.11
Distributed deposit system
deposit system controlled by programmable controllers in which the physical deposit sequences cannot be changed through links to devices outside the receiving unit

Example of integrated deposit system, see Annex B.

3.1.12
Base
any part of a deposit system which is between the receiving unit and the surface to which it is to be anchored

NOTE A base is used to place a deposit system input unit at a convenient height for use.

3.1.13
Deposit sequence
all steps in the cycle that a deposit system performs from when it has been activated by the depositor and until the system has returned to the position from where it can be activated again

3.1.14
Controller unit
controller unit is a device consisting of electronic hardware and software and have the purpose to operate the deposit sequence

3.1.15
Remote access
communication from outside the receiving unit, through a data link that gives the possibility to control / influence the deposit sequence of a distributed system

3.2 Deposit tool attack definitions

NOTE The deposit tool attacks in 3.2.1 to 3.2.7 are different types of attacks with the intension to remove one or several deposits from the deposit system. Detailed information about conditions for testing and criteria's are in the Clause 10.

3.2.1
Forcing
destructive attack with the intention to remove several deposits from the receiving unit

3.2.2
Forcing Ex
destructive attack including plastic explosives with the intention to remove several deposits from the receiving unit

3.2.3
Forcing GAS
destructive attack including gas explosives with the intention to remove several deposits from the receiving unit

3.2.4
Deposit retrieval
manipulative non-destructive attack without leaving traces with the intention to remove one deposit from the receiving unit

3.2.5
Fishing
manipulative non-destructive attack with the intention to remove several deposits from the receiving unit from the still functioning deposit system

3.2.6
Trapping last deposit
manipulative attack by means of introduction of devices that prevent one deposit from reaching the receiving unit and then to remove it from the deposit system

3.2.7
Repeated trapping
manipulative attack by means of introduction of devices that prevent several deposits from reaching the receiving unit and then to remove them from the still functioning deposit system

4 Classification and requirements

4.1 Classification

Deposit systems are classified in different grades according to Table 1. Deposit safes are designated with D and night safes are designated with N. In addition to the basic grades there are two possible options EX and GAS. These can be individual or in combination with each other (for example N-V EX GAS).

The “EX” indicates that the deposit system also complies with the requirements for Partial access EX – explosive tool attack test and Deposit forcing EX tool attack test.

The “GAS” indicates that the deposit system also complies with the requirements for Partial access GAS – explosive tool attack test and Deposit forcing GAS tool attack test.

Table 1 — Possible classifications of deposit systems

Deposit safe (D) classification			Night safe (N) classification		
Basic grading	Options [a)]		Basic grading	Options [a)]	
	EX	GAS		EX	GAS
D-0	—	—	—	—	—
D-I	—	—	—	—	—
D-II	D-II EX	D-II GAS	N-II	N-II EX	N-II GAS
D-III	D-III EX	D-III GAS	N-III	N-III EX	N-III GAS
D-IV	D-IV EX	D-IV GAS	N-IV	N-IV EX	N-IV GAS
D-V	D-V EX	D-V GAS	N-V	N-V EX	N-V GAS
—	—	—	N-VI	N-VI EX	N-VI GAS
—	—	—	N-VII	N-VII EX	N-VII GAS
—	—	—	N-VIII	N-VIII EX	N-VIII GAS
—	—	—	N-IX	N-IX EX	N-IX GAS
—	—	—	N-X	N-X EX	N-X GAS

[a] All additional requirements for EX respective GAS shall be fulfilled.

NOTE The basic grade limits are the same as those of EN 1143-1 where applicable.

4.2 General requirements

4.2.1 Protection material

There shall be no holes through the protection material of an input unit or chute other than those necessary for user identification (e.g. locks, card readers, etc.), cables, and insertion of deposits.

There shall be no holes through the protection material of a receiving unit other than those for locks, cables, anchoring and the aperture for the input unit or chute.

4.2.2 Cable hole

Deposit systems of grade III and higher shall either have a hole for a cable or a preparation enabling a connection to be made to an alarm system after the secure storage unit has been installed.

Unused cable entry openings shall be obstructed or plugged by means that cannot be removed from the outside without leaving visible traces.

4.2.3 User instructions

Deposit systems shall be provided with instructions for:

— operating and maintenance, including instructions in respect of the locks

— anchoring

— system installation for built-in deposit systems

— the depositor.

4.3 Requirements for receiving units

4.3.1 Dimensions

Receiving unit shall when closed have at least one internal side ≤ 1 m.

4.3.2 Boltwork cover plate

Receiving unit shall have an internal boltwork cover plate which prevents unauthorized viewing of the locks and boltwork, and access to them, when the door is open. Boltwork cover plates shall be secured so that they cannot be opened or removed by an unauthorized person without leaving visible traces.

NOTE Boltwork cover plates may be secured so that they only can be opened or removed by using the correct key or code or by breaking a seal.

4.3.3 Locks: number and class

The receiving unit shall be fitted with locks conforming to EN 1300, in accordance with Tables 2 and 3.

NOTE Time locks and/or time delay locks may be mounted in addition to the locks listed in Tables 2 and 3.

4.3.4 Partial and complete access

When tested in accordance with Clause 9, the receiving unit shall provide the resistance value to complete access and partial access, partial access EX (optional), partial access GAS (optional) specified in Tables 2 and 3 for the relevant grade.

These requirements do not apply to the aperture for the input unit or chute.

4.3.5 Fixing system

Receiving units in deposit systems shall have a fixing system by which they can be anchored. When tested in accordance with 11.1 and 11.2, the fixing system shall provide the resistance values specified in Table 2 and Table 3 for the relevant grade.

Table 2 — Minimum requirements for deposit safe (D) receiving unit

Grade	Tool attack resistance values Requirements are expressed in Resistance Units (RU)						Locks according to EN 1300	
	Complete Access	Partial Access			Fixing system			
		General	Options		Test without force	Test with force[a]	Qty	Class
			EX	GAS				
D-0	30	30	---	---	30	18	1	A
D-I	50	30	---	---	30	18	1	A
D-II (EX, GAS)	80	50	4	4	50	22	1	A
D-III (EX, GAS)	120	80	6	6	50	22	1	B
D-IV (EX, GAS)	180	120	9	9	50	22	2	B
D-V (EX, GAS)	270	180	14	14	50	22	2	B

[a] For Grade D-0 to Grade D-III applicable force is maximum 50 kN. For Grade D-IV and Grade D-V applicable force is maximum 100 kN. (See 11.1 and 11.2)

Table 3 — Minimum requirements for night safe (N) receiving unit

Grade	Tool attack resistance values Requirements are expressed in Resistance Units (RU)						Locks according to EN 1300	
	Complete Access	Partial Access			Fixing system			
		General	Options		Test without force	Test with force[a]	Qty	Class
			EX	GAS				
N-II (EX, GAS)	80	50	4	4	50	22	1	A
N-III (EX, GAS)	120	80	6	6	50	22	1	B
N-IV (EX, GAS)	180	120	9	9	50	22	2	B
N-V (EX, GAS)	270	180	14	14	50	22	2	B
N-VI (EX, GAS)	400	270	20	20	70	22	2	C
N-VII (EX, GAS)	600	400	30	30	120	22	2	C
N-VIII (EX, GAS)	825	550	41	41	160	22	2	C
N-IX (EX, GAS)	1050	700	53	53	210	22	2	C
N-X (EX, GAS)	1350	900	68	68	280	22	2	C

[a] For Grade N-II to Grade N-III applicable force is maximum 50 kN. For Grade N-IV to Grade N-X applicable force is maximum 100 kN. (See 11.1 and 11.2)

4.4 System requirements

4.4.1 General

System requirements are related to the resistance of removal of one or more deposits from the system under conditions specified under Clause 10 for different types of deposit tool attack tests.

Deposit systems in which the deposit sequence and other sequences are controlled by programmable controllers shall conform to 4.4.2 (for integrated deposit systems) and 4.4.3 (for distributed deposit systems).

4.4.2 Integrated deposit systems

4.4.2.1 Predefined deposit sequence and other predefined sequences shall be controlled by devices inside the receiving unit.

4.4.2.2 It shall not be possible to change the software containing the predefined sequences unless the receiving unit door is open.

4.4.2.3 The controller unit shall be secured by a protective cover. The cover shall not be possible to open or remove by an unauthorized person without leaving visible traces or result in operation failure. Means shall be provided to indicate that tampering of the controller unit has taken place.

4.4.2.4 From outside of the receiving unit it shall only be possible to initiate predefined sequences in the deposit system.

4.4.2.5 The software controlling the sequences of the deposit system capture shall be identified with a unique version number.

4.4.3 Distributed deposit systems

4.4.3.1 If the predefined deposit sequence and other predefined sequences are controlled or changed from outside the receiving unit, the control signals shall be protected by cryptography. The requirements for cryptography described in EN 1300 are applicable also for distributed systems.

4.4.3.2 The software controlling the sequences of deposit system shall be identified with a unique version number.

4.4.3.3 The controller unit shall be protected by a lock and access control such that unauthorized entry results in visible traces or in operation failure.

4.4.4 Resistance to deposit tool attacks

When tested in accordance with Clause 10, a deposit safe shall provide the resistance to forcing, forcing EX (option), forcing GAS (option), fishing and deposit retrieval specified in Table 4 for the relevant grade.

When tested in accordance with Clause 10, a night safe shall provide the resistance to forcing, forcing EX (option), forcing GAS (option), fishing, deposit retrieval, trapping last deposit and repeated trapping specified in Table 5 for the relevant grade.

Table 4 — Minimum requirements for deposit tool attacks for deposit safe (D)

Type of product and grade	Deposit tool attack minimum resistance values Requirements are expressed in Resistance Units (RU)				
	Forcing			Fishing	Deposit retrieval
	General	Options			
		EX	GAS		
D-0	30	—	—	30	30
D-I	30	—	—	30	50
D-II (EX,GAS)	50	4	4	50	80
D-III (EX,GAS)	80	6	6	80	120
D-IV (EX,GAS)	120	9	9	120	180
D-V (EX,GAS)	180	14	14	180	270

Table 5 — Minimum requirements for deposit tool attacks for night safe (n)

Type of product and grade	Deposit tool attack minimum resistance values Requirements are expressed in Resistance Units (RU)						
	Forcing			Fishing	Deposit retrieval	Trapping last deposit	Repeated trapping
	General	Options					
		EX	GAS				
N-II (EX,GAS)	50	4	4	50	80	20	50
N-III (EX,GAS)	80	6	6	80	120	30	80
N-IV (EX,GAS)	120	9	9	120	180	40	120
N-V (EX,GAS)	180	14	14	180	270	40	180
N-VI (EX,GAS)	270	20	20	270	400	40	270
N-VII (EX,GAS)	400	30	30	400	600	40	400
N-VIII (EX,GAS)	550	41	41	550	600	40	550
N-IX (EX,GAS)	700	53	53	700	600	40	700
N-X (EX,GAS)	900	68	68	900	600	40	900

5 Technical documentation

The technical information shall be available for the testing laboratory when starting the testing procedure.

Technical documentation shall contain the following information:

5.1 The date of issue and the name of the manufacturer or the name of the applicant requesting testing, on each page.

5.2 Statement of the type of product: deposit safe or night safe and type of receiving unit (free-standing or built-in receiving unit) together with a list of sizes covered by the same design.

The statement shall also give information about;

g) Potential options (EX and GAS)

h) If a base to the deposit system is included or an option

i) The design capacity

5.3 Drawings of the test specimen, including the system sub-units, showing the following:

a) weight, outside and inside dimensions, and the manufacturing tolerances;

b) horizontal and vertical cross sections;

c) quantity, layout and features of locks, boltwork and relocking devices (system comprising blocking and detecting elements which will prevent the boltwork from being withdrawn if a burglary attack is detected. A relocking device can be part of the locking mechanism (e.g. active or live relocker) or an independent unit (e.g. passive relocker)).

d) quantity, pitch and position of door bolts, their dimensions (e.g. cross section), throw and engagements and their type (moving or fixed);

e) location and design of any local areas of special protection material;

f) details of the fastening and/or fitting or anchoring of all elements relevant to physical security (e.g. construction and position of joints and connections, the means by which the input unit, chute and receiving unit are joined to each other);

g) marking, position and dimensions of any holes which pass through the protection material with a detailed representation of specially protected areas;

h) details of optional features, e.g. time locking and time delay locking;

i) in case of a base this shall be identified.

5.4 List of all the locks that may be fitted, giving the manufacturer and model number.

5.5 Specification of the materials of construction if not contained on the drawings.

5.6 Details of any materials or device(s) intended to generate gas, smoke, soot, etc., in the event of physical attack, or that could generate harmful substances during testing.

5.7 Statements of the nature and position of any cables and/or facilities for penetration detection systems, for the mounting of electro-mechanical securing devices, alarm devices, etc.

5.8 Instructions for installation, giving at least the following details:

a) method by which the deposit system is anchored to the floor or other surface.
If a base is included in the deposit system the method by which the deposit system is anchored to the base and the base is anchored to the floor or other surface

b) method of encasing built-in deposit systems, including

— the proportion of receiving unit to be encased;

— the minimum size and section thickness of the encasement;