BS EN 1143-2:2024

BSI Standards Publication

Secure storage units — Requirements, classification and methods of tests for resistance to burglary

Part 2: Deposit systems

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National foreword

This British Standard is the UK implementation of EN 1143-2:2024. It supersedes BS EN 1143-2:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GW/2, Secure storage of cash, valuables and data media.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Unités de stockage en lieux sûrs - Prescriptions, 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

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Full document details: BS EN 1143-2:2024

Contents

Page

European foreword 4
Introduction 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 8
3.1 Deposit system definitions 8
3.2 Deposit tool attack definitions 10
4 Classification and requirements 11
4.1 Classification 11
4.2 General requirements 12
4.3 Requirements for the receiving units 12
4.4 System requirements 16
5 Technical documentation 19
6 Test specimen 21
7 Test program 21
8 Tool attack test 23
8.1 General 23
8.2 Principle 23
8.3 Testing team 24
8.4 Apparatus 24
8.5 General test conditions 25
8.6 General test procedure 26
8.7 Calculation of resistance values 27
8.8 Test record – tool attack test 28
9 Access tool attack tests 29
9.1 Partial access – tool attack test 29
9.2 Complete access – tool attack test 30
9.3 Partial access EX – explosive tool attack test 30
9.4 Partial access GAS – explosive tool attack test 32
10 Deposit tool attack tests (removal of deposits) 34
10.1 General for all deposit tool attack tests 34
10.2 Test conditions for Deposit forcing tool attack test 35
10.3 Test conditions for Deposit forcing EX tool attack test 36
10.4 Test conditions for Deposit forcing GAS tool attack test 37
10.5 Test conditions for Deposit fishing tool attack test 39
10.6 Test conditions for Deposit fishing tool attack test 40
10.7 Test conditions for Last deposit trapping tool attack test 40
10.8 Test conditions for Deposit repeated trapping tool attack test 41
11 Fixing system tool attack tests 42
11.1 Fixing system – tool attack test without force 42
11.2 Fixing system – tool attack test with force 43

Documents
Document Sharing Hub
Full document details: BS EN 1143-2:2024

12 Test report and test records 46
12.1 Test report 46
12.2 Test records 47
13 Marking 47
Annex A (informative) Examples of different designs of deposit systems 48
Annex B (informative) Examples of integrated and distributed deposit systems 49
B.1 Integrated deposit system 49
B.2 Semi-integrated deposit safe 50
B.3 Different distributed deposit systems 51
Annex C (normative) Additional tools for deposit tool attack tests 54
Annex D (informative) Structure of test clauses 55

Documents
Document Sharing Hub

Full document details: BS EN 1143-2:2024

European foreword

This document (EN 1143-2:2024) 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 February 2025, and conflicting national standards shall be withdrawn at the latest by February 2025.

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 1143-2:2014.

EN 1143-2:2024 includes the following significant technical changes with respect to EN 1143-2:2014:

a) requirements for the additional T2 test have been added (4.1, 5.3, 8.4.1 and Clause 13), Table 1, Table 2, Table 3, Table 4 and Table 5). Products tested with these new tools which are listed in Annex B of EN 1143-1 have a 'T2' designation behind the resistance grade;

b) Requirements for built-in deposit systems have been added (see 9.1.1 and 9.2.1);

c) A new type of deposit system “semi-integrated deposit safe” has been added (see 3.1.11, 3.1.17, 4.4.1, 4.4.3, 5.10 e) and B.2);

d) The anchoring test with force now depends on the type of deposit system and (11.2 and Table 10);

e) An additional test condition for cutting steel sheets has been added (Clause 2 and 8.5.3);

f) The cryptography requirements were raised to those of EN 17646 (Clause 2, 4.4.4.1 and 5.13);

g) Updates have been integrated for the optional solid explosive test, above all: The explosive mass for the EX-option in 9.3.4 and 10.3.3 was changed to “active explosive mass”, instead of specific energy the explosive heat of the PETN is defined (9.3.3); the detonation velocity of the PETN was raised from (7 000 ± 500) m/s to (7 500 ± 500) m/s (9.3.3); the tolerance of the active explosive charge mass has been changed from ± 1 g to ± 2 % (Table 9) and the shape of the explosive charge shall now be spherical (9.3.8);

h) For the GAS option the 100 litres limitation has been deleted (9.4.4), the gas explosive has been defined more precise (9.4.3), the test conditions for the deposit forcing GAS tool attack test have been updated (10.4.7.3 and 10.4.7.4) and documentation requirements have been added (5.9 b));

i) Annex C has changed from informative to normative and the tools are now explicitly classified as category A tools (8.4.1);

j) Update of references to the newer EN 1143-1:2019;

k) Integration of high security locks of EN 17646 (Table 2, Table 3, 10.2.1, 10.3.1, 10.4.1, 10.5.1, 10.6.1, 10.7.1 and 10.8.1);

l) Minor updates for the test report requirements (12.1);

m) Editorial adaptions throughout the standard (see 3.1.10, 3.1.12, 4.3.3, 4.4.2.3, 8.4.1, 8.4.2, 8.6.3, 10.3.1, 10.4.1, 10.7.2, 10.8.2, 11.2.3, 13, Annex A, B.3, Table 1, Table 2, Table 3, Table 4, Table 5).

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

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, Türkiye and the United Kingdom.

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Introduction

This document gives the possibility to classify deposit systems according to their resistance to burglary attacks. The laboratory tests simulate 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 document 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 authorized personnel of the company. It is assumed that the authorized personnel carry out 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, are disposable only for the authorized 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 (see EN 1143-1) which have apertures necessary for operation of the deposit system.

Examples of different design of deposit systems are given 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.

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1 Scope

This document 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 document 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 document is that the depositing functions are installed inside the premises of the company and are only disposable for the personnel of the company.

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

This document 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 document.

Deposit systems can 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 document 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 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 1143-1:2019, *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 10051, *Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels — Tolerances on dimensions and shape*

EN 17646, *Secure storage units — Classification for high security locks according to their resistance to unauthorized opening — Distributed systems*

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

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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.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

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

Note 1 to entry: Deposit systems can be either deposit safes or night safes.

Note 2 to entry: A deposit system serves the purpose to securely accept and securely store deposits of cash and/or valuables.

3.1.2
deposit safe
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 1 to entry: The input unit of this system is intended to be used only by the employees and not be placed in a public area.

3.1.3
night safe
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 1 to entry: The input unit of this system is 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

3.1.6
design capacity
usable internal space for storing deposits

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

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

Note 2 to entry: 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 1 to entry: 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 (see 4.4.2)

Note 1 to entry: For an example of an integrated deposit system, see Annex B, Figure B.1.

Note 2 to entry: It is permitted that the controller of the integrated deposit system transmits data about the system status and events.

3.1.11
semi-integrated deposit safe
deposit safe controlled by programmable controllers in which the physical deposit sequences cannot be changed through links to devices outside the deposit safe (see 4.4.3)

Note 1 to entry: For an example of a semi-integrated deposit safe, see Annex B, Figure B.2.

Note 2 to entry: It is permitted that the controller of the semi-integrated deposit system transmits data about the system status and events.

3.1.12
distributed deposit system
deposit system controlled by programmable controllers in which the physical deposit sequences can be changed through links to devices outside the receiving unit and even the deposit system (see 4.4.4)

Note 1 to entry: For an example of a distributed deposit system, see Annex B.

3.1.13
base
any part of a deposit system which is between the receiving unit and the surface to which it is to be anchored

Note 1 to entry: A base is used to place a deposit system input unit at a convenient height for use.

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3.1.14
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

3.1.15
controller unit
device consisting of electronic hardware and software and have the purpose to operate the deposit sequence

3.1.16
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

3.1.17
user level
software functions usable by the depositor that do not change the general function of the deposit system and do not change user specific settings of other depositors or users

Note 1 to entry: These software functions may be needed to deposit money, receive an envelope, get a receipt, etc.

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 intention to remove one or several deposits from the deposit system. Detailed information about conditions for testing and criteria are given in 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

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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 three possible options: "T2", "EX" and "GAS". These can be individual or in combination with each other (for example N-V EX GAS).

The "T2" indicates that in addition to the tools listed in EN 1143-1:2019, Annex A, the deposit system may also be attacked with the tools of EN 1143-1:2019, Annex B. The T2 tools of EN 1143-1:2019, Annex B are only used, if the applicant applies for T2 designation. For the T2 designation all the tests and requirements in this document that refer to Annex A of EN 1143-1:2019 are additionally applicable with the tools of EN 1143-1:2019, Annex B.

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
NOTE 1 The basic grade limits are the same as those of EN 1143-1, where applicable. NOTE 2 If the optional T2 test is fulfilled, a T2 is added to the classification.					
[a] All additional requirements for EX respective GAS shall be fulfilled.					

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4.2 General requirements

4.2.1 Holes in 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,

— deposit sizes recommended,

— the depositor.

4.3 Requirements for the receiving units

4.3.1 Dimensions

The 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.

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: amount and class

The receiving unit shall be fitted with locks conforming to EN 1300 or EN 17646, in accordance with Tables 2 and 3 of this document.

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

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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 Tables 2 and 3 for the relevant grade.

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

Grade	Access tool attack tests (Clauses 9.1 and 9.2) Access tool attack test T2 (Clause 4.1)		Anchoring strength (Clause 11.2)	Tool attack test on fixing attachment (Clause 11.1)	Additional requirements for post-anchoring forcing test (Clause 11.2)	Locks		Additional requirements for EX and GAS designation (optional) (Clauses 9.3 and 9.4)
	Resistance value[c] for		Required force	Resistance value [c]	Post-anchoring resistance value [c]	Quantity	Class according to EN 1300 / EN 17646	Post-detonation resistance value [b c]
	Partial access	Complete access						
	RU	RU	kN	RU	RU			RU
D-0	30	30	50	30	18	1	A / A(DS)	- - -[a]
D-I	30	50	50	30	18	1	A / A(DS)	- - -[a]
D-II	50	80	50	50	22	1	A / A(DS)	4
D-III	80	120	50	50	22	1	B / B(DS)	6
D-IV	120	180	100	50	22	2	B / B(DS)	9
D-V	180	270	100	50	22	2	B / B(DS)	14

[a] EX and GAS designation are not permitted for resistance grades D-0 and D-I.

[b] Resistance value for partial access.

[c] If the tool test is performed according to 4.1 (T2), the resistance value shall be achieved according to 4.1 (T2).

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

Grade	Access tool attack tests (Clauses 9.1 and 9.2) Access tool attack test T2 (Clause 4.1)		Anchoring strength (Clause 11.2)	Tool attack test on fixing attachment (Clause 11.1)	Additional requirements for post-anchoring forcing test (Clause 11.2)	Locks		Additional requirements for EX and GAS designation (optional) (Clauses 9.3 and 9.4)
	Resistance value[b] for		Required force	Resistance value [b]	Post-anchoring resistance value [b]	Quantity	Class according to EN 1300 / EN 17646	Post-detonation resistance value [a b]
	Partial access	Complete access						
	RU	RU	kN	RU	RU			RU
N-II	50	80	50	50	22	1	A / A(DS)	4
N-III	80	120	50	50	22	1	B / B(DS)	6
N-IV	120	180	100	50	22	2	B / B(DS)	9
N-V	180	270	100	50	22	2	B / B(DS)	14
N-VI	270	400	100	70	22	2	C / C(DS)	20
N-VII	400	600	100	120	22	2	C / C(DS)	30
N-VIII	550	825	100	160	22	2	C / C(DS)	41
N-IX	700	1 050	100	210	22	2	C / C(DS)	53
N-X	900	1 350	100	280	22	2	C / C(DS)	68

[a] Resistance value for partial access.

[b] If the tool test is performed according to 4.1 (T2), the resistance value shall be achieved according to 4.1 (T2).

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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), 4.4.3 (for semi-integrated deposit safes) and 4.4.4 (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. It shall not be possible to open or remove the cover 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 Integrated deposit safes with external user interface for local authorization (semi-integrated deposit safes)

NOTE The following requirements are only applicable for deposit safes (see Figure B.2).

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

4.4.3.2 The controller unit shall be secured by a protective cover, e.g. input unit housing by 2 mm mild steel. It shall not be possible to open or remove the cover by an unauthorized person without leaving visible traces and result in operation failure. Means shall be provided to indicate that tampering of the controller unit has taken place.

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

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

4.4.3.5 Any additional controller unit of the deposit safe shall be secured by a protective cover, e.g. housing by 2 mm mild steel. It shall not be possible to open or remove the cover by an unauthorized person without leaving visible traces and result in operation failure.

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