



**SLOVENSKI STANDARD**  
**oSIST prEN 1143-1:2017**  
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**Varnostne shranjevalne enote - Zahteve, klasifikacija in metode preskušanja protivlomne odpornosti - 1. del: Blagajne, bankomatne blagajne, vrata trezorskih prostorov in trezorski prostori**

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

Wertbehältnisse - Anforderungen, Klassifizierung und Methoden zur Prüfung des Widerstandes gegen Einbruchdiebstahl - Teil 1: Wertschutzschränke, Wertschutzschränke für Geldautomaten, Wertschutzraumtüren und Wertschutzräume

Unités de stockage en lieux sûrs - Prescriptions, classification et méthodes de test pour la résistance à l'effraction - Partie 1 : Coffres forts, distributeurs automatiques de billets (DAB), portes fortes et chambres fortes

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

Unités de stockage en lieux sûrs - Prescriptions, classification et méthodes de test pour la résistance à l'effraction - Partie 1 : Coffres forts, distributeurs automatiques de billets (DAB), portes fortes et chambres fortes

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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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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**prEN 1143-1:2017 (E)****European foreword**

This document (prEN 1143-1:2017) 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 1143-1:2012.

Compared with EN 1143-1:2012, the following changes were made:

a) The attack tools in Annex A which have not been changed since the first publication of EN 1143-1 have been renewed. Current tools have been updated to the state of the art and new tools were added. Changes have been made for the hand levering tools, hand cutting tools, electric powered tools with and without impact, electric powered impacting machine tools without rotation, electric powered cutting/slitting machine tools, electric disc cutters, circular saws, thermal cutting/melting tools as well as for the miscellaneous tools. Furthermore, the definition of the tool coefficient in Clause 3.17 has been changed.

Safes, ATM safes, strongrooms and strongroom doors tested according to EN 1143-1:2012 and earlier versions of this standard can therefore usually be seen as less secure in comparison to the secure storage units according to this version of the European standard.

b) For easier reading the tool accessories in former Table A.12 have been integrated directly into the relevant tables in Annex A.

c) The construction requirements for ATM safes of the resistance grade L have been deleted (7.5.5 has been deleted, changes in Table 2 and 7.5.4 have been made).

d) For clarification an informative Annex B and text in the introduction has been added for different types of ATM systems.

e) Updates have been integrated for the optional solid explosive test: The explosive mass for the EX-option in 9.4 was changed to “active explosive mass”, the requirement that test specimens shall have a certain internal capacity has been deleted from 9.2 and the shape of the explosive charge shall now be spherical for ATM safes and safes (see 9.5.1).

f) Editorial changes have been integrated in the Clauses 3.10, 3.1.6, 4.2.1, 7.3.1, 7.6.5, 7.6.6, 7.8, 9.5.2, 9.6, 10.4, 11.3.1 and 11.3.2 as well as Figure 2.

## Introduction

Tests are made, the results of which are used to classify the resistance to burglary. The resistance classification can also be used for designing security systems with the provision that, depending on the criminal, the conditions at the place of the crime and the availability of tools, considerably longer times are likely to occur in real burglary attacks than in a test.

Manual tests are included, whose results and repeatability is dependent on the skill of the testing team. Machine-related tests are under development and may be included when this European Standard is revised.

For ATM systems the tests and requirements in this European standard are based on the following assumptions (conditions) of use:

- **ATM system:** assembly of sub-units which provides an ATM function and affords security to cash and/or valuables (e.g. checks) stored within the ATM safe.
- For using of an ATM safe the ATM manufacturer is responsible for the secure storage of the cash and/or valuables (e.g. checks).

Examples of different designs of ATM systems are given in Annex B.

iTeh STANDARD PREVIEW  
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SIST EN 1143-1:2019

<https://standards.iteh.ai/catalog/standards/sist/b7f938d4-1222-427c-bbf8-0a50caa02b15/sist-en-1143-1-2019>

## prEN 1143-1:2017 (E)

### 1 Scope

This European Standard establishes the basis for testing and classifying free-standing safes, built-in safes (floor and wall), ATM safes and ATM bases, strongroom doors and strongrooms (with or without a door) according to their burglary resistance. This European Standard does not cover testing and classifying Deposit Systems and ATM systems.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3.1

##### **safe**

storage unit which protects its contents against burglary and when closed has at least one internal side  $\leq 1$  m length

#### 3.2

##### **free-standing safe**

safe whose protection against burglary depends only upon the materials and construction of its primary manufacture and not upon materials added or attached during installation

#### 3.3

##### **built-in safe**

safe whose protection against burglary is partly dependent upon materials incorporated into it, or attached to it, during installation

Note 1 to entry: Under floor safes and wall safes are special types of built-in safes.

#### 3.4

##### **strongroom**

storage unit which protects against burglary and when closed has internal side lengths in all directions  $> 1$  m

Note 1 to entry: Strongrooms may be cast *in situ*, constructed from pre-fabricated elements or a combination of both.

#### 3.5

##### **strongroom door**

door with lock(s), boltwork and frame intended for giving access to a strongroom

#### 3.6

##### **ATM safe**

safe forming part of an ATM system



### 3.7

#### **ATM base**

integral part of an ATM system located between the ATM safe and the surface to which the safe is to be anchored

### 3.8

#### **internal space**

part of the interior of an ATM safe which is bounded by the inside surfaces and the boltwork cover plate(s) of the door of the ATM safe body

### 3.9

#### **ATM**

#### **automatic teller machine**

means for holding and processing cash and/or valuables

Note 1 to entry: For the purpose of this standard, automated teller machines, currency exchange machines, currency recycling machines and machines such as teller assist machines are all considered types of ATM.

### 3.10

#### **ATM-System**

assembly of sub-units which provides an ATM function and affords security to cash and/or valuables stored within the ATM safe

Note 1 to entry: An example of an ATM system is shown in Annex B.

Note 2 to entry: Of the sub-units shown in Annex B, the ATM mechanism and the ATM control unit are not tested according to this European Standard.

### 3.11

#### **accessories**

installations/devices which are part of the structure or which pass through the structure of the strongroom or strongroom door(s) for ventilation or for deposit of cash and valuables

Note 1 to entry: Accessories may be always open, usually open (but can be closed in case of emergency), or closed (but can be opened if necessary).

### 3.12

#### **operating time**

time during which a tool is used attempting to create a change in the test specimen

Note 1 to entry: In the context of this standard, there are also operating times considered during which no visible modifications/changes are caused to the test specimen.

### 3.13

#### **resistance unit**

#### **RU**

burglary resistance which results from one minute's use of a tool carrying the coefficient 1 and the basic value 0

### 3.14

#### **resistance grade**

classification designation for burglary resistance

**prEN 1143-1:2017 (E)****3.15****resistance value**

numerical value in resistance units calculated for each test

**3.16****basic value****BV**

number in resistance units allocated to a particular tool

Note 1 to entry: The basic value represents problems in obtaining, transporting, conditions (e.g. water cooling and power availability) and using the relevant tool at the site in question, and the necessary knowledge and experience for its efficient use.

**3.17****tool coefficient**

number in resistance units per minute allocated to a group of tools

Note 1 to entry: The tool coefficient represents tool efficiency and factors such as noise, smoke, fumes and other effects, which increase the likelihood of a burglary attack being detected.

**3.18****boltwork**

mechanism by which a closed door is held such that, until it is in the withdrawn position, the door cannot be opened

**3.19****lock**

device able to recognize a coded input and which performs a blocking function on the boltwork or the door

**3.20****relocking device**

system comprising blocking and detecting elements which will prevent the boltwork from being withdrawn if a burglary attack is detected

Note 1 to entry: A relocking device can be part of the locking mechanism (e.g. active or live relocker) or an independent unit (e.g. passive relocker).

**3.21****to close**

to move the door so it becomes possible to bolt it

**3.22****to bolt**

to throw the boltwork or the bolt of the lock (if there is no boltwork) to a position where it fixes the door in closed position

**3.23****to lock**

to block a thrown boltwork by action of a lock

## 4 Classification and requirements

### 4.1 Classification

Safes are classified to a resistance grade according to Table 1.

ATM safes are classified to a resistance grade according to Table 2.

Strongroom doors and strongrooms (with or without a door) are classified to a resistance grade according to Table 3.

All products shall meet general requirements (4.2) and products with EX, GAS and CD designation shall meet additional requirements (4.3, 4.4 and 4.5).

### 4.2 General requirements

#### 4.2.1 Safes, strongroom doors and strongrooms

There shall be no holes through the protection material other than those necessary for locks, cables, anchoring or for the fitting of accessories to strongroom doors and strongrooms.

Cable openings in safes, strongroom doors and strongrooms (with or without a door) shall not exceed 100 mm<sup>2</sup>. Unused cable entry openings shall be obstructed or plugged by the manufacturer by a means of which cannot be removed from the outside without leaving visible traces.

Free-standing safes with a mass of less than 1 000 kg shall have at least one hole by which they can be anchored. The anchoring assembly for each anchoring hole shall sustain the force given in Table 1.

#### 4.2.2 ATM safes

ATM safes shall have means for plugging unused openings. These means shall be impossible to remove from the outside without leaving visible traces.

NOTE 1 Openings through the protection material for ATM functioning are permitted in ATM safes.

NOTE 2 Cable entry openings in ATM safes may be larger than 100 mm<sup>2</sup>.

ATM safes, including optional ATM bases, shall have a fixing capability by which they can be anchored, and which shall sustain the required force given in Table 2.

#### 4.2.3 Boltwork cover plate

Safes, ATM safes and strongroom doors shall have an internal boltwork cover plate that 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.

#### 4.2.4 Cable hole

Safes, strongroom doors and strongrooms 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.

#### 4.2.5 User instructions

Safes, strongrooms and ATM safes shall be provided with operating and maintenance instructions, including instructions regarding the locks. Free-standing safes and ATM safes shall have instructions for anchoring. For built-in safes, strongroom doors and strongrooms, installation instructions shall be provided.

**prEN 1143-1:2017 (E)****4.3 Additional requirements for EX designation**

When tested in accordance with Clause 9, safes of resistance grades II to X designated 'EX' shall achieve the minimum post-detonation resistance values given in Table 1. EX designation is not applicable to safes of resistance grade 0 to I.

When tested in accordance with Clause 9, ATM safes of resistance grades II to VIII designated 'EX' shall achieve the minimum post-detonation resistance values given in Table 2. EX designation is not applicable to ATM safes of resistance grades L and I.

When tested in accordance with Clause 9, strongroom doors and strongrooms (with or without doors) of resistance grades II to XIII designated 'EX' shall achieve the minimum post-detonation resistance values given in Table 3. EX designation is not applicable to strongroom doors and strongrooms of resistance grades 0 and I.

When tested in accordance with Clause 9, the cable-entry openings of safes, strongroom doors and strongrooms (with or without a door) shall not permit the entry of explosives (e.g. fuses or charges).

**4.4 Additional requirements for GAS designation**

When tested in accordance with Clause 10, ATM safes of resistance grades II to VIII designated 'GAS' shall achieve the minimum post-detonation resistance values given in Table 2. 'GAS' designation is not applicable to ATM safes of resistance grades L and I.

**4.5 Additional requirements for CD designation**

When tested in accordance with Clause 11, safes of resistance grades IV to X designated 'CD' shall achieve the minimum resistance values given in Table 1. 'CD' designation is not applicable to safes of resistance grades 0 to III and ATM safes.

When tested in accordance with Clause 11, strongroom doors and strongrooms (with or without a door) of resistance grades VIII to XIII designated 'CD' shall achieve the minimum resistance values given in Table 3. 'CD' designation is not applicable to strongroom doors and strongrooms of resistance grades 0 to VII.

Table 1 — Minimum requirements for classification of safes (excluding ATM safes) into resistance grades

Resistance grade	Tool attack test (Clause 7)		Anchoring strength <sup>a</sup> (Clause 8)	Locks		Additional requirements for EX designation (optional) (Clause 9)	Additional requirements for CD designation (optional) (Clause 11)
	Resistance value for partial access	Resistance value for complete access	Required force	Quantity	Class according to EN 1300	Post-detonation resistance value <sup>d</sup>	Resistance value <sup>d</sup>
	RU	RU	kN			RU	RU
0	30	30	50	1	A	b	c
I	30	50	50	1	A	b	c
II	50	80	50	1	A	4	c
III	80	120	50	1	B	6	c
IV	120	180	100	2	B	9	1 000
V	180	270	100	2	B	14	1 000
VI	270	400	100	2	C	20	1 000
VII	400	600	100	2	C	30	1 000
VIII	550	825	100	2	C	41	1 000
IX	700	1 050	100	2	C	53	1 000
X	900	1 350	100	2	C	68	1 000

a Applicable only to free-standing safes with a mass less than 1 000 kg.

b EX designation is not permitted for resistance grades 0 and I.

c CD designation is not permitted for resistance grades 0 to III.

d Resistance value for partial access.

Table 2 — Minimum requirements for classification of ATM safes into resistance grades

Resistance grade	Tool attack test (Clause 7)			Anchoring strength (8.2)	Tool attack test on fixing attachment (Clause 7)	Additional requirements for post-anchoring forcing test (Clause 8)	Locks		Additional requirements for EX and GAS designation (optional) (Clauses 9 and 10)
	Resistance value for						Quantity	Class according to EN 1300	
	partial access		complete access	Required force	Resistance value	Post-anchoring resistance value			
	general	used apertures <sup>a</sup>							
	RU	RU	RU	kN	RU	RU			RU
L	body	20	20	50	30	18	1	A	b
	door	30	30						
I	30	30	50	50	30	18	1	A	b
II	50	35	80	50	50	22	1	A	4
III	80	65	120	50	50	22	1	B	6
IV	120	100	180	100	50	22	2	B	9
V	180	145	270	100	50	22	2	B	14
VI	270	220	400	100	70	22	2	C	20
VII	400	350	600	100	120	22	2	C	30
VII I	550	500	825	100	160	22	2	C	41

<sup>a</sup> Applies only to apertures actually used; plugged and unused apertures shall satisfy the general values.

<sup>b</sup> EX and GAS designation are not permitted for resistance grades L and I.

<sup>c</sup> Resistance value for partial access.

**Table 3 — Minimum requirements for classification of strongroom doors and strongrooms into resistance grades**

Resistance grade	Tool attack test (Clause 7)	Locks <sup>a</sup>		Additional requirements for EX designation (optional) (Clause 9)	Additional requirements for CD designation (optional) (Clause 11)
		Quantity	Class according to EN 1300		
	Resistance value for complete access			Post-detonation resistance value <sup>c</sup>	Resistance value <sup>c</sup>
	RU			RU	RU
0	30	1	A	b	d
I	50	1	A	b	d
II	80	1	A	4	d
III	120	1	B	6	d
IV	180	2	B	9	d
V	270	2	B	14	d
VI	400	2	C	20	d
VII	600	2	C	30	d
VIII	825	2	C	41	10 000
IX	1 050	2	C	53	10 000
X	1 350	2	C	68	10 000
XI	2 000	3	C or	100	10 000
		2	D		
XII	3 000	3	C or	150	10 000
		2	D		
XIII	4 500	2	D	225	10 000
<p><sup>a</sup> Not applicable for classification of strongrooms without a door.</p> <p><sup>b</sup> EX designation is not permitted for resistance grades 0 and I.</p> <p><sup>c</sup> Resistance value for complete access.</p> <p><sup>d</sup> CD designation is not permitted for resistance grades 0 to VII.</p>					

## 5 Technical documentation

The technical documentation shall contain the following information:

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

**5.2** Statement of the type of product: free-standing safe, built-in safe (floor and wall), ATM safe, strongroom door or strongroom (with or without a door), together with a list of sizes covered by the same design.