	<b>ECB•S Guideline for the certification of IT and aperture safes</b>	<b>ECB•S R16</b>
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## **Introduction and background**

This document establishes the basis for testing and classifying safes with openings (IT and aperture safes).

This guideline was initiated as in the current available standards the scopes do not explicitly state, if such a product can be certified according to a specific standard. However, due to market needs, a clear and openly available guideline from ECB is needed.

Some certification bodies certify such products according to EN 1627. As EN 1627 is only a standard for testing components, it was decided to use the EN 1143-1 as a basis for ECB certification.

The EN 1143-1 defines that ATM safes shall store cash and/or valuables. In addition, an ATM function must be provided. As valuables and ATM functions are not defined more precisely, it is open to interpretation if an "IT safe" or "aperture safe" can be certified as "ATM safe". The document gives the basis to certify such products under the high security requirements of EN 1143-1.

Compared with version of 1. September 2021, the following change was made:

- a) The requirements for anchoring (4.5) have been changed. The test condition now corresponds to that of a free-standing safe.

## 1 Scope

This document establishes the basis for testing and classifying safes with openings (IT and aperture safes). The IT safe (also known as server cabinet) has a server or PC inside the secure storage unit, the aperture safe may store different equipment. An example of an aperture safe could be a safe for storing vaccines, which needs cooling).

The requirements of this document are based for the most part on the product type "ATM safe" of the European Standard EN 1143-1.

This document only defines the physical resistance of an IT safe. IT-security or EMC tests are not included.

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

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

EN 1627, *Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification*

## 3 Terms and definitions

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

### 3.1

#### **IT safe**

storage unit which protects its contents against burglary and when closed has at least one internal side  $\leq 1$  m length and includes an opening, which is used for ventilation (see EN 1143-1:2019, clause 3.11). Inside of the IT safe IT equipment like a server is stored.

### 3.2

#### **Aperture safe**

storage unit which protects its contents against burglary and when closed has at least one internal side  $\leq 1$  m length and includes an opening, which is used for ventilation (see EN 1143-1:2019, clause 3.11). Inside of the ventilation safe valuables are stored. If the aperture safe stores IT equipment it is an IT safe.

Example of an aperture safe: In case it is necessary to store vaccines at minus temperatures and openings are required for air circulation or cooling liquids a ventilation safe could be used.

### 3.3

#### **Ventilation opening**

Opening used for ventilation purposes.

### 3.4

#### **Relevant opening**

Opening which is needed for an IT safe or an aperture safe for its intended use.

NOTE: Cable openings smaller than  $100 \text{ mm}^2$  are not in the scope of "relevant openings".

## 4 Classification and requirements

### 4.1 Classification

IT and aperture safes are classified to a resistance grade according to Table 1.

### 4.2 General requirements

IT and aperture safes shall meet all the requirements, which are defined for ATM safes of EN 1143-1. The ATM safe requirements related to Figure 1 of EN 1143-1:2019 (< 100 mm from boltwork cover plate) are not relevant for IT and aperture safes.

IT and aperture safes may have openings through the protection material, which are used for ventilation functions.

Cable holes shall not exceed 100 mm<sup>2</sup>. If cable holes exceed 100 mm<sup>2</sup> the requirement of clause 4.4 shall be met. 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.

IT and aperture safes, including optional bases, shall have a fixing system by which they can be anchored.

### 4.3 Ventilation openings

#### 4.3.1 General

Ventilation openings shall fulfil the requirements of Table 1.

#### 4.3.2 Design requirements

##### 4.3.2.1 Blocking of ventilation openings

The external **and** internal ventilation openings shall be blocked by a grid or similar. The openings in the grid or similar shall each be smaller than 100 mm<sup>2</sup>.

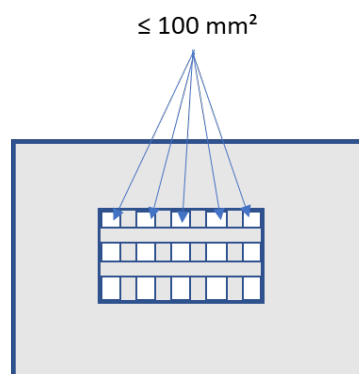


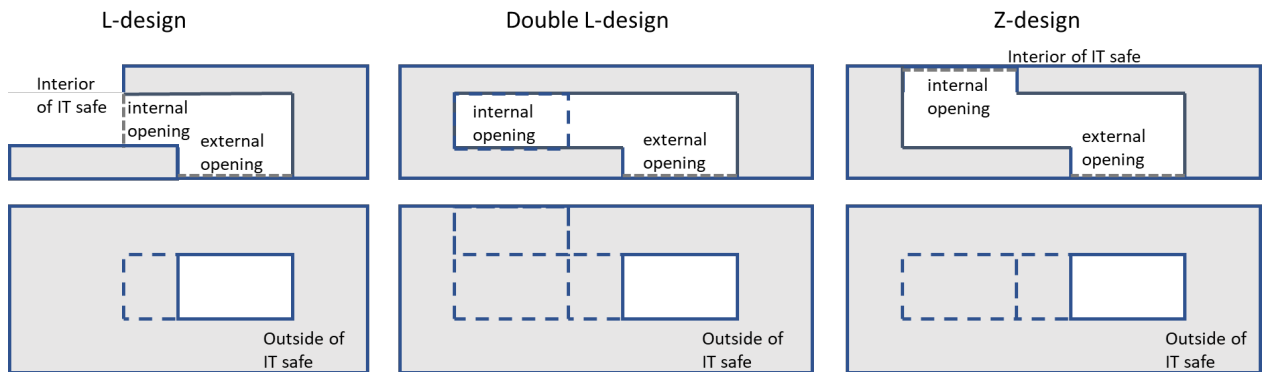
Figure 1 – External ventilation opening

##### 4.3.2.2 Physical prevention of data manipulation

In addition, the holes of the **inner** ventilation opening **of an IT safe** shall prevent the entry of the smallest permitted data socket (for instance USB-C, Thunderbolt 3 etc.) of the IT equipment inside (see 4.5.2).

### 4.3.2.3 Angle type design

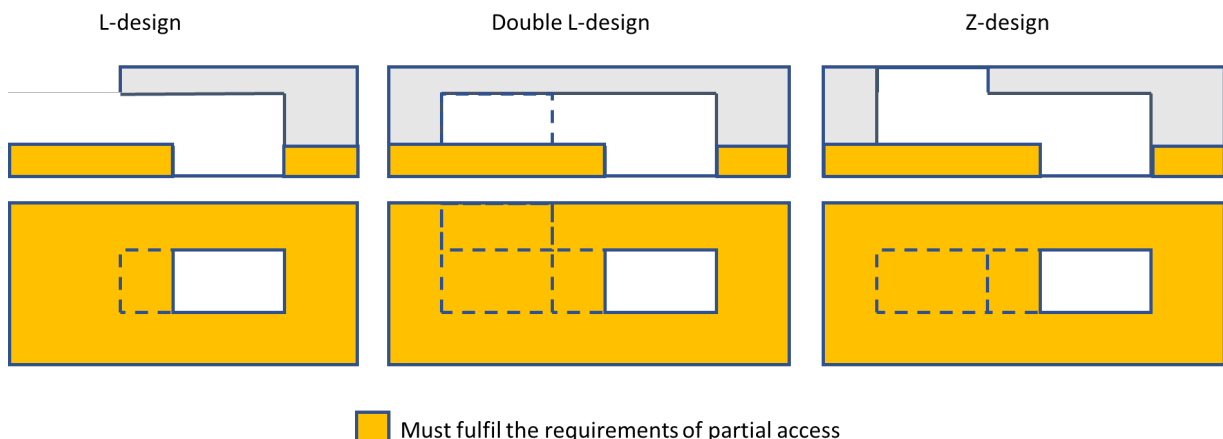
The ventilation openings shall be of an angle-type design. These can be in an L, double L or Z shape. The external and internal ventilation opening shall be at least 150 mm apart (see figure 2).



**Figure 2 – Different angle-type design examples**

### 4.3.3 Partial access attack requirements

The outer wall of the angle-type design shall at least fulfil the requirements of the partial access (for instance they shall be of the same design as the other walls of the IT safe).

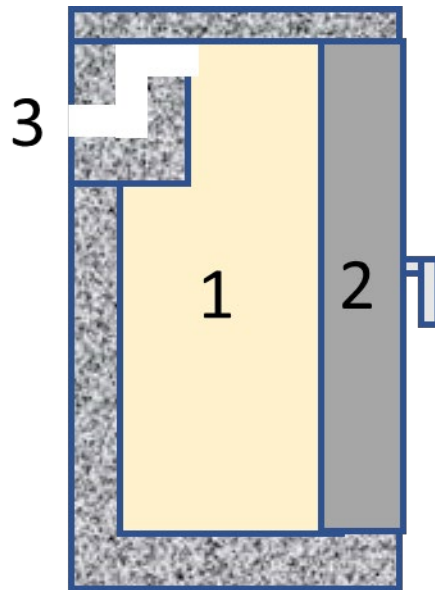


**Figure 3 – Outer wall design**

A partial access which is:

- performed through the outer ventilation opening or
- is made by taking advantages of the ventilation opening (enlarging the opening etc.)

shall fulfil the requirements for partial access of Table 1. The partial access test block of clause 7.3.3.2 of EN 1143-1 shall then completely pass through the aperture created into the interior of the IT safe (see figure 4, No. 1). During the type test the interior of the IT or aperture safe shall be empty.



- Key:
- 1 Interior of the IT or aperture safe
  - 2 Door of IT or aperture safe
  - 3 Example of ventilation opening of IT or aperture safe

**Figure 3 – Design of an IT or aperture safe**

**Table 1 — Minimum requirements for classification of IT and aperture safes into resistance grades**

Resistance grade	Tool attack test (EN 1143-1:2019, clause 7)		Anchoring strength (EN 1143-1:2019, clause 8.2)	Tool attack test on fixing attachment (EN 1143-1:2019, clause 7)	Additional requirements for post-anchoring forcing test (EN 1143-1:2019 clause 8)	Locks		Additional requirements for EX and GAS designation (optional) (EN 1143-1:2019, clauses 9 and 10)	
	Resistance value for					Required force	Resistance value <sup>d</sup>		Post-anchoring resistance value <sup>d</sup>
	Partial access		Complete access						
	general	openings <sup>a</sup>							
RU	RU	RU	kN	RU	RU			RU	
<b>0 / L</b>	Resistance grades 0 and L are not used for IT and aperture safes								
<b>I</b>	30	<b>30</b>	50	50	30	18	1	A	<sup>b</sup>
<b>II</b>	50	<b>50</b>	80	50	50	22	1	A	4
<b>III</b>	80	<b>80</b>	120	50	50	22	1	B	6
<b>IV</b>	120	<b>120</b>	180	100	50	22	2	B	9
<b>V</b>	Resistance grades V, VI, VII and VIII are not used for IT safes								
<b>VI</b>									
<b>VII</b>									
<b>VIII</b>									
<sup>a</sup>	In contract to an ATM safe, where an ATM system is behind the opening, this may not be the case for IT safes. Therefore, the full RU value must be achieved.								
<sup>b</sup>	EX and GAS designation are not permitted for resistance grade I.								
<sup>c</sup>	Resistance value for partial access.								
<sup>d</sup>	If the tool test is performed according EN 1143-1:2019, clause 12 (T2), the resistance value shall be achieved according EN 1143-1:2019, clause 12 (T2).								

## 4.4 Relevant openings

Any other relevant openings, which are not ventilation openings and not cable openings smaller than 100 mm<sup>2</sup> shall fulfil the requirements of Table 2.

**Table 2 – requirements for relevant openings**

Requirement	IT safe	Aperture safe
General according to 4.3.1	Required	Required
Blocking of ventilation openings according to 4.3.2.1	Not required. Instead, special design requirements like a twisted flat steel inside of the opening is required.	
Physical prevention of data manipulation according to 4.3.2.2	Required	Not required
Angle type design according to 4.3.2.3	Required	Required
Partial access attack requirements according to 4.3.3	Required	Required

## 4.5 Anchoring

The anchoring test shall be performed with the requirements of a free-standing safe (application of the test load in the appropriate direction to try to pull the assembly through the IT and aperture safe's wall or base).

## 4.6 Instructions

The instructions of the IT safe shall include:

1. An instruction how the IT safe shall be anchored.
2. The minimum permitted data socket allowed for the IT equipment (see 4.3.1).
3. That plugs or sockets of the IT system inside of the IT safe shall not be directly positioned in front of the ventilation openings.

The instructions of the aperture safe shall include:

1. An instruction how the aperture safe shall be anchored.

## 5 Certification and marking

The certificate will state that the product is certified according to R16. It will not give a reference to EN 1143-1.

The same applies for the certification mark.