

Loss Prevention Standard

LPS 1228: Issue 1.2

Specification for testing and classifying the burglary resistance of office furniture – lightweight containers

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REVISION OF LOSS PREVENTION STANDARDS

Loss Prevention Standards will be revised by issue of revised editions or amendments. Details will be posted on our website at www.redbooklive.com

Technical or other changes which affect the requirements for the approval or certification of the product or service will result in a new issue. Minor or administrative changes (e.g. corrections of spelling and typographical errors, changes to address and copyright details, the addition of notes for clarification etc.) may be made as amendments. (See amendments table on page 14)

The issue number will be given in decimal format with the integer part giving the issue number and the fractional part giving the number of amendments (e.g. Issue 3.2 indicates that the document is at Issue 3 with 2 amendments).

USERS OF LOSS PREVENTION STANDARDS SHOULD ENSURE THAT THEY POSSESS THE LATEST ISSUE AND ALL AMENDMENTS.

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FOREWORD

This standard identifies evaluation and testing practices for the approval and listing of suitable products. Approval is based on the following criteria:

- a) Satisfactory product performance and construction, in accordance with the requirements of the certification authority and the manufacturer's specifications.
- b) Verification of the establishment and maintenance of the manufacturer's quality management systems in accordance with ISO 9001 Quality Management Systems, as appropriate.
- c) Satisfactory product service experience

NOTES

Compliance with this LPS does not of itself confer immunity from legal obligations. Users of LPSs should ensure that they possess the latest issue and all amendments.

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1. SCOPE

This standard describes tests for classifying the burglary resistance to physical attack of office furniture – lightweight containers, for example filing cabinets and document cabinets. The burglary resistance of the product itself and any in-situ hardware, such as locks and hinges, are tested.

The burglary resistance performance of a lightweight container is classified regardless of design or materials used in construction.

The resistance to manipulation of any fitted lock(s) is not tested.

- Notes:*
- 1) *For testing and classifying the burglary resistance of building components, strongpoints and security enclosures, see The Loss Prevention Council Standard LPS 1175.*
 - 2) *For testing of classification of physical protection devices for personal computers and similar equipment, see The Loss Prevention Council Standard LPS 1214.*

2. DEFINITIONS

2.1 LIGHTWEIGHT CONTAINER

A self-contained system of physical security elements used to store documents, cash and valuables and accessed through lockable opening element(s).

2.2 BURGLARY RESISTANCE

The capacity of a lightweight container to withstand the attempt of a forced entry.

2.3 SECURITY CLASSIFICATION

Indication of the degree of resistance of a lightweight container to forced entry.

2.4 SECURITY CLASSIFICATION EXPECTATION

The anticipated classification level for which the lightweight container was designed.

2.5 OPENING ELEMENT

A door, drawer or other feature that facilitates access to the interior of the lightweight container was designed.

2.6 LATCHED CONDITION

Every opening element of a lightweight container is closed with any automatic latching mechanism engaged. Closed elements of the product cannot be opened without a key, force or damage.

This is the minimum locked condition. The burglary resistance of the product will be adjudged for minimum resistance with the locking mechanism in this state.

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Note: If closed elements can be opened with the use of a handle, owing to the provision of a non-deadlocking latch, the product is considered to have no burglary resistance

2.7 LOCKED CONDITION

Every opening element of a lightweight container is closed, latched and deadlocked.

This is the optimum locked condition and the burglary resistance of the product will be adjudged with the locking mechanism in this state. This condition may be the same for the minimum locked condition if the locking logic does not include an automatic latch state.

2.8 MANUAL INTERVENTION ATTACK TEST

A manual attempt at gaining forced partial or full access with and/or without the aid of tools.

2.9 WORKING TIME (RESISTANCE TIME)

The aggregate time of an attack test.

2.10 TOTAL TEST TIME

The maximum duration of an individual attack test which is the sum of the accrued working time, rest time of an operative for well-being and safety reasons, time to change tools or exchange defective expendable tool elements and any inspection time called by the team leader.

2.11 PARTIAL ACCESS

Formation of a hand-hole size aperture of sufficient size which allows complete passage of a test block, according to 8.3.1, to the interior of the lightweight container, through which small or flexible items of value may be removed, or information about the contents gained.

2.12 COMPLETE ACCESS

Change of state of the lightweight container by opening a closed element after overcoming the integrity of the locking system, or formation of an aperture which allows complete passage of a test block, according to 8.3.2, to the interior of the container through which larger items of value can be removed.

3. INFORMATION TO BE SUPPLIED BY APPLICANT

3.1 GENERAL

Prior to examination and testing an applicant shall provide comprehensive information about the product to the certification authority for consideration. All documents shall be dated and given a reference number and issue description. If the applicant is not the manufacturer then an application must be accompanied by written permission for testing from the manufacturer.

3.2 DATA

The applicant shall supply the following detailed information relating to the product to be tested.

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a) **Manufacturing responsibilities:**

- i. Name of manufacturer.
- ii. Place of manufacture.
- iii. Year of manufacture.
- iv. Relationship of applicant to manufacturer.
- v. Company responsible for design and quality assurance.

b) **Drawings:**

- i. Cross sections.
- ii. General assembly
- iii. The location and design of any local areas of special protection.
- iv. Details of any other element relevant to physical security.

- c) A description of the materials of construction if not contained on the drawings.
- d) Where applicable, instructions and specification for secure installation including recommendations for anchorage.
- e) Whether the product is a prototype or is in series production.
- f) The applicant's security classification expectation.

4. SPECIMENS TO BE SUPPLIED FOR TESTING

Subsequent to the certification authority's acceptance of an application for approval, the following shall be observed:

- a) The applicant shall supply an agreed number of specimens. If the product is in series production, specimens shall be selected by a certification authority representative.
- b) If prototype specimens are supplied for testing, approval will not be given until the drawings for subsequent series production have been examined and confirmed that they accord with the tested prototype or that any changes will not reduce the security rating.
- c) Additional component parts of some products may be requested for testing purposes.
- d) When the product incorporates advances or changes in technology, then additional sample pieces, parts or sections can be requested for evaluation prior to the supply of the agreed specimens.
- e) The applicant shall supply at least three specimens for testing. The specimens shall be complete with any associated hardware supplied or fitted. Depending on the product, other specimens may be necessary.
- f) The size of specimens for testing shall be at the discretion of the test laboratory. The normal size of the product and intended application shall be taken into account. Where the product is manufactured and intended for use in a range of sizes, a size

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of specimen likely to be least effective against attack shall be chosen to ensure the test results are representative for the complete range. Where relevant, specific fixings/anchorage system for secure installation shall be supplied.

5. DESIGN REQUIREMENTS

5.1 LOCKS

Only integral lock(s) shall be used.

Lock(s) shall have the minimum of 1000 effective differs and mastered key lock(s) shall not reduce the security provided by a minimum of 1000 effective differs.

Lock mounting screws, nuts and rivets etc. on which the security of the protection device depends shall be concealed when the device is in the locked condition.

5.2 OPTIONAL FEATURES

5.2.1 Time Locks/Time Delay Locks

These may be mounted in addition to the locks specified in 5.1.

5.2.2 Cable Entry Holes (less than 100mm²)

A cable entry hole shall not be greater than 100 mm².

Where cable entry holes are present but not used they shall be obstructed and/or, such that the security integrity of the lightweight container is not compromised.

Cable entry holes and respective protection offered shall be shown on the construction drawings and be present in the test specimens.

5.2.3 Anchorage

Any facilities for secure installation present but not used should not afford access to the interior of the container. This includes provision for blind apertures.

6. EXAMINATION

6.1 DATA

All information and drawings supplied will be reviewed to ensure suitability for testing and approval purposes.

6.2 CONFORMITY BETWEEN SPECIMENS AND DOCUMENTATION

Prior to testing, the specimens shall be visually examined for conformity with the details supplied by the applicant.

If it is discovered that a specimen does not so conform, testing will not be performed until the drawings and documents have been modified or the specimens have been altered by the manufacturer.

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If a lack of conformity of the specimens and construction drawings is discovered during the testing, the applicant will be required to amend the construction drawings and documents accordingly. The applicant shall be notified thereof whilst evaluation of the product is in progress. Any test may be discontinued and repeated on another specimen if it is concluded that as a result of the non-conformity the attack should have been directed at an alternative location.

6.3 DESIGN

6.3.1 Locking

On lightweight containers intended to be opened in normal use, provision of a suitable lock(s) shall be verified and the design/attachment of the lock(s) reviewed for any weakness that may be exploited during testing. The locking logic shall also be reviewed in order to determine the minimum and optimum locked conditions for test purposes.

6.3.2 Security Features

Security features shall be reviewed to ensure that, as far as is reasonably possible, they are tamper resistant so as to prevent surreptitious interference of the designed level of security prior to attack.

7. TESTING PROTOCOL

General laboratory procedures, confidential handling of specimens, event record requirements and presentation of the test report shall be in accordance with the requirements specified in EN 45001.

8. TEST OBJECTIVE AND REQUIREMENTS

8.1 GENERAL

The overall objective is to confirm the security classification expectation of a lightweight container by conducting a series of manual intervention tests. Requirements for each security classification are given in Table 1. Overall classification is confirmed if the requirements for the anticipated class are met.

TABLE 1 : Security Classification Requirements

Security Classification	Tool Kit	Partial Access Maximum Working Time (min)	Complete Access Maximum Working Time (min)	Maximum Test Duration (min)
A	TKA	0.5	1	5
B	TKB	1	2	10
C	TKC	1.5	3	15
D	TKD	2.5	5	20

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8.2 MANUAL INTERVENTION ATTACK TESTS

Using tools from the tool kit appropriate to the security classification expected (see Table 1), or by manual manipulation, attacks are made against the product with a view to allowing free entry of one of the test blocks specified in Clause 8.3 into the lightweight container or access to a protected item. The working time (resistance time) shall be recorded in order to determine whether the lightweight container is capable of meeting the expected security classification. For the classification expectation of this style of test to be verified, all security aspects shall withstand attack.

8.3 TEST BLOCKS

8.3.1 Test Block To Measure Partial Access

A test block of 125mm diameter cross section and 150mm length shall be used for measuring partial access.

The tolerance shall be $\pm 1\text{mm}$.

8.3.2 Test Block To Measure Complete Access

A test block of 350mm diameter cross section and 400mm length shall be used to measure complete access.

The tolerance shall be $\pm 3\text{mm}$.

9. ATTACK TOOLS

The tool manifest for the manual intervention attack tests and ascribed tool kit is as follows:

TOOL KIT TKA

Cord/string – not more than 2mm diameter
 1 flexible plastic coupon
 1 lever – 12 mm x 3 mm x 150mm long (bright mild steel to BS970: PER 3: 1991)
 1 SIMULATED DESKTOP ADHESIVE TAPE dispenser – see Figure 1
 1 penknife – max. 89Mm (3.5 inch) blade length
 1 pair of scissors – 150 mm long
 1 simulated chair – see Figure 2
 1 simulated desk – see figure 3
 1 pair of tweezers
 Wire – e.g. Coat hanger

The tools of this kit are selected in order to simulate an opportunist attack by bodily physical force using minimal tools including object readily to hand or those which may be obtained from that environment.

TOOL KIT TKB

Tool Kit TKA plus:

1 junior hacksaw and HSS blades
 1 pliers combination – 150mm long

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1 putty knife – spring tempered steel blade with clipped point – 115mm length.
1 screwdriver – 7mm dia./square x 250mm long

This tool kit provides a slightly more determined and partially planned, but opportunist attack using bodily physical force and tools with a slightly increased mechanical advantage.

TOOL KIT TKC

Tool Kits TKA and TKB plus:

1 claw hammer – 350mm long/0.7kg
1 floor-board bolster – 50mm blade
1 hand drill – 400mm long /1.5kg
1 HSS or carbide drill bit – 6mm dia (jobber)
1 padsaw/hacksaw and HSS blades
1 screwdriver – 15mm dia/square x 400mm long

This tool kit is for deliberate forced entry using bodily physical force with a deliberate selection of tools calculated to effect entry to a container as quickly as possible.

TOOL KIT TKD

Tool Kits TKA, TKB and TKC plus:

1 hammer – 1.2kg
1 prybar – 600mm long
2 wooden/plastic wedges – 32mm wide by 100mm long

This tool kit is for deliberate forced entry of a well constructed container using bodily physical force and an assessed selection of tools for a rapid entry attack.

Note: All dimensions are maximum

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Figure 1 : Simulated Desktop Adhesive Tape Dispenser

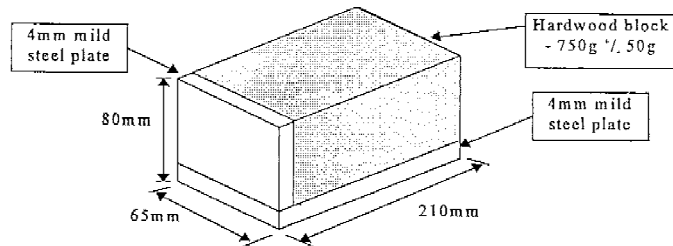


Figure 2 : Simulated Chair*

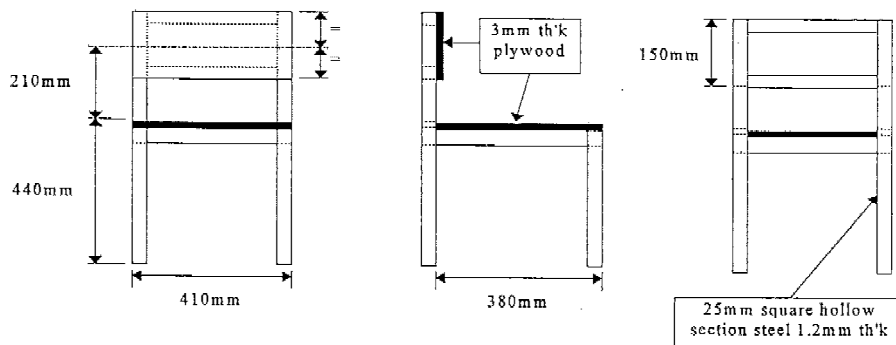
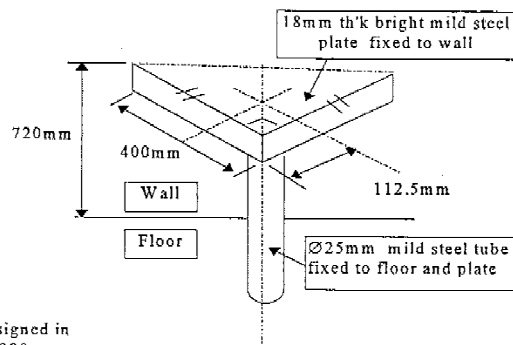


Figure 3 : Simulated Desk*



* simulations of office furniture designed in accordance with BS5940:Part 1:1980

NB : general tolerance for simulated furniture : +/- 5mm

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10. MANUAL INTERVENTION ATTACK TESTS

10.1 TEST FACILITY

The apparatus for this test shall consist of a floorbase suitable for mounting a lightweight container in its normal attitude. The floorbase shall be free from movement for the duration of testing. The manifest of attack tools specified in Clause 9 complete the apparatus requirement.

10.2 TEST TEAM

The test team shall comprise a team leader whose function is to direct, time, compile an event record and control the testing work on a product specimen and a test operative whose prime function is to carry out the testing work on the specimen as directed by the team leader.

At any time during testing the team leader may substitute himself for the test operative, the operative assuming the role of timekeeper whilst maintaining the event record.

A different test operative may be used for different styles of attack but only one operative (other than the team leader) shall partake in any individual test.

10.3 TEST METHOD

Locate the lightweight container under test on the appropriate floorbase.

Secure any opening element in the minimum or optimum locked condition, as appropriate.

Attack tools of the appropriate kit relative to the security rating expectation shall be arranged, adjacent to the test frame, ready for immediate use.

A series of attack tests shall then be undertaken with each continued until, (i) the objective is achieved, (ii) the maximum test duration is exceeded, or (iii) the team leader decides that the attack is ineffective for classification purposes.

Tests on the locking system shall be undertaken in both the minimum and optimum locked conditions, as applicable.

Attack tests shall only be aimed at areas or features which in the opinion of the team leader have not been weakened by previous tests.

During each individual attack test the timing device used to measure test duration shall remain activated. The resolution of this device shall be at least 1 second. The timing device(s) used to record working time shall have a resolution of at least 0.01 second. At the conclusion of the test, the working time shall be rounded to the next full second.

11. MARKING

All products submitted for test shall be indelibly marked with the manufacturer's/supplier's name or trademark and product type designation.

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12. PUBLICATIONS REFERRED TO

BS 5940: Part 1 : 1980	Office furniture Specification for design and dimensions of office workstations, desks, tables and chairs.
ISO 9001 :	Quality management systems - Requirements
EN 45001 : 1989	General criteria for the operation of testing laboratories.
LPS 1175 : Issue 3	Specification for burglary resistance of building components, strongpoints and security enclosures.
LPS 1214 : Issue 2	Specification for testing and classifying physical protection devices for personal computers and similar equipment.

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Amendments Issued Since Publication

DOCUMENT NO.	AMENDMENT DETAILS	SIGNATURE	DATE
LPS 1228-1.0	Copyright details changed	CJA	12/11/01
LPS 1228-1.0	Further copyright change	CJA	14/08/02
LPS 1228-1.1	Further copyright changes	CJA	20/09/05
LPS 1228-1.2	<ol style="list-style-type: none"> 1. New front cover 2. Title added to header 3. Contents page moved to Page 1 4. Revision of Loss Prevention Standards added on Page 2 5. Notes added on Page 3 6. Update of references to ISO 9001 standard (Clauses Foreword & 12) 7. References to ISO 9002 deleted - this standard has been withdrawn and is replaced by ISO 9001 8. Insertion of page numbers on contents page 9. Repagination 	DC	Jan. 2014