# FINAL DRAFT
# prEN 13724

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2002

ICS 03.240

English version

# Postal services - Apertures of private letter boxes and letter plates - Requirements and test methods

Services postaux - Ouverture de boites aux lettres et entrées de courrier particulières - Prescriptions et méthodes d'essai

This draft European Standard is submitted to CEN members for formal vote. It has been drawn up by the Technical Committee CEN/TC 331.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. prEN 13724:2002 E

## Contents

## Foreword

This document prEN 13724:2002 has been prepared by Technical Committee CEN/TC 331 "Postal services", the secretariat of which is held by NEN.

This document is currently submitted to the Formal Vote.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Annex A is normative. Annex B is informative.

# 1 Scope

This European Standard specifies the requirements and the test methods of the apertures for the delivery of letter post items when fitted in accordance with the manufacturers instructions.

It takes into account security, impregnability, safety and performance for the recipient, and ergonomics and efficiency for delivery personnel. It allows the daily delivery in good condition of a great majority of letter post items.

# 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

| | |
|---|---|
| ISO 269 | Correspondence envelopes - Designation and sizes |
| EN 1670 | Building Hardware - Corrosion resistance - Requirements and test methods |

# 3 Terms and definitions

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

**3.1**
**aperture**
opening through which a letter post item is delivered

**3.2**
**aperture components**
all parts supplied by the manufacturer of the private letter boxes and the letterplates, including installation material

**3.3**
**burglary prevention**
protecting against unauthorised opening of doors and windows

**3.4**
**casing**
enclosure receiving the letter post items delivered excluding the box door, flap and frame

**3.5**
**delivery floor level**
floor level on the delivery side of the aperture, adjacent to the background or door where it is mounted and of sufficient area for the delivery person to stand on

**3.6**
**door installation**
installation of a letterplate or private letter box in a door

**3.7**
**flap**
pivoted component, generally flat, whose purpose is to cover and/or seal the aperture. Flaps can open inwards or outwards

**3.8**
**frame**
parts directly surrounding the aperture

**3.9**
**gauge mail**
envelope used to test the clear delivery of letter post items

**3.10**
**key differ**
variation between lock mechanism of similar design that allow each lock to be operated by only its corresponding key(s)

**3.11**
**letterplate**
aperture with flap located on door, door-side-panel or a wall consisting of a frame, a flap and installation material

**3.12**
**letter post item**
item classified according to the speed of processing or the contents

NOTE Classification according to the speed of processing, for example: priority item, non-priority item. Classification according to the contents, for example: letter, postcard, printed paper, literature for the blind and small packet.

**3.13**
**lock mechanism**
locking device which is operated mechanically, electronically or by other means provided by the postal operator

**3.14**
**private letter box**
receptacle into which mail is delivered at the domicile of the addressee

**3.15**
**receiving floor level**
floor level on the receiving side of the aperture of sufficient area, adjacent to the background or door where the recipient is standing

**3.16**
**slide-through box**
aperture at the delivery side, item removal at the opposite side

**3.17**
**theft prevention**
protection against the theft of letter post items

# 4 Classification

## 4.1 Aperture types

According to this standard apertures may be classified in four categories using the following criteria.

a) type 1: apertures of private letter boxes for outdoor use (see 6.6.1 and Figure A.1)

b) type 2: apertures of private letter boxes for indoor use

c) type 3: apertures of slide-through boxes

d) type 4: apertures of letterplates (fixed to doors or side-panels)

### 4.2 Aperture sizes

Two sizes are identified (for dimensions see Table A.1 and Figure A.1)

a) size 1

b) size 2

### 4.3 Corrosion resistance

Three grades of corrosion are identified according to EN 1670 (see 5.5.1)

a) grade 0

b) grade 3

c) grade 4

### 4.4 Security

Two grades of security are identified (see 5.6.2)

a) grade 1

b) grade 2

## 5 Requirements

The test methods required to meet these requirements are described in clause 6 using the same sequence as below.

### 5.1 Components

Fixing instructions shall be supplied with each individual product enabling the correct installation in accordance with this standard.

Generally, the aperture shall be fitted with a flap. This is not necessary if the components are specified for indoor use only.

### 5.2 Dimensions

Generally, the aperture shall have the dimensions given in annex A.

#### 5.2.1 Smaller apertures – Types 1, 2 and 3

Where letter items can be delivered by another means than through the aperture, the aperture dimensions may be smaller than the dimensions given in Table A.1. The means shall be designed so that, when opened, the size of the opening shall meet the minimum requirement of Table A.1. The means shall fulfil the appropriate requirements of clause 5.

#### 5.2.2 Gauge mail

It shall be possible to push gauge mail through the aperture without folding or damaging it. It shall be possible to empty gauge mail from a private letter box without folding or damaging it (types 1, 2 and 3 only).

The overall thickness of gauge mail (including the envelope, size C4-ISO [ISO 269]) is 24 mm with a tolerance of + 0 mm and - 1 mm. The envelope shall be filled with A4 papers with a mass per area of 80 g/m$^2$.

## 5.3 Ergonomics and safety

### 5.3.1 Installation height of the aperture

The following text shall form part of the installation instructions:

For ergonomic reasons the centreline of the aperture should be at a height between 700 mm and 1 700 mm measured from the delivery floor level. In special cases such as groups of apertures the range may be extended but shall be between 400 mm and 1 800 mm.

The accuracy of the measuring instrument shall have a tolerance of less than ± 2 mm.

Failure to comply with these installation requirements shall result in non-conformity with this standard.

### 5.3.2 Safety

Aperture components that can be reached when inserting a letter post item shall not have sharp edges.

### 5.3.3 Opening force of the flap

The force required to fully open the flap shall not exceed 8 N (as shown in Figure 6a, point a).

### 5.3.4 Closing of the flap

The flap shall be self-closing after a letter post item has been inserted.

### 5.3.5 Fire protection regulations

The component materials and the location for types 1, 2, 3 or 4 and/or installation within any building shall be in accordance with the requirements for fire protection in staircases and access routes provided for rescue operations as laid down in the relevant planning laws and building regulations.

NOTE It should be referred to national legal and administrative regulations.

## 5.4 Confidentiality

Private letter boxes, types 1, 2 and 3 shall be provided without a sight window unless specifically required. If a sight window is required, it shall be translucent.

## 5.5 Corrosion and water penetration

### 5.5.1 Corrosion

Corrosion resistance shall be in accordance with EN 1670

Aperture components of types 1, 3 and 4 shall meet grade 3 or better

For type 2 the corrosion resistance may be grade 0.

### 5.5.2 Water penetration (types 1, 3 and 4)

Delivered letter post items shall not be affected by water penetration in accordance with 6.5.2. The requirement can only be fulfilled if all openings are closed. The product shall be mounted according to the manufacturer's instructions without any modification. Tests shall be carried out at a temperature between 10 ºC and 30 ºC. The environment shall be free from draughts.

NOTE To prevent rainwater or snow entering through apertures, all delivery personnel are recommended to insert all items completely through the aperture at the time of delivery and not to leave part of them outside, ensuring that the flap is closed.

## 5.6 Security

The requirements are intended to make the theft of letter post items more difficult. For type 4, additional requirements are given in order to make it difficult to open doors or windows through a letterplate, or to open doors and windows after the forcible removal of the letterplate components.

### 5.6.1 Theft prevention - types 1, 2 and 3

If the distance between a 40 mm high pile of letter post and the bottom of the aperture is less than 260 mm, the aperture shall be provided with a security attachment which makes access to and removal of letter post item(s) more difficult (see Figure A.1).

If an aperture with or without a flap is smaller than indicated in Table A.1 - but of a size which makes it possible to remove letter post item(s) whose smallest dimension (length or width) is 90 mm - then the aperture shall be positioned in such a way that the distance between the aperture and the 40 mm high pile of letter post items shall be at least 130 mm (see Figure A.1).

### 5.6.2 Theft prevention - type 4

The following requirements shall form part of the installation instructions (see also Table A.1 and Figure A.1):

If the distance between the bottom of the aperture and the receiving floor level is at least 680 mm, the maximum aperture height may be 40 mm and a security attachment shall not be required.

For distances less than 680 mm, a security attachment shall be required as for types 1, 2 and 3.

Failure to comply with these installation requirements shall result in non-conformity with this standard.

### 5.6.3 Security and locks - types 1, 2 and 3

Types 1, 2 and 3 private letter boxes shall have adequate strength to resist mechanical forces in accordance with security grades 1 or 2:

a) grade 1 shall resist a tensile force of 150 N

b) grade 2 shall resist a tensile force of 220 N.

After the test, the permanent deformation shall be lower than 2 mm for both grades.

Two grades of private letter box door locks are identified which refer to the number of key differs.

a) security grade 1 shall have at least 200 key differs.

b) security grade 2 shall have a minimum of 500 key differs. The manufacturer of the private letter boxes shall ensure that the specified key differs are available and used. It is not sufficient that the lock has the theoretical possibility of the specified key differs.

### 5.6.4 Protection against the opening of doors and windows - type 4

The following requirements shall form part of the installation instructions:

A letterplate shall not be fitted within 400 mm of a door or window lock unless an auxiliary locking device is also fitted more than 400 mm from the letterplate. If the door or window can be locked from the inside with a key and the key withdrawn, these requirements do not apply.

If a box is placed behind the letterplate, it shall meet all the requirements for types 1, 2 and 3.

The accuracy of the measuring tape shall be within ± 2 mm.

Failure to comply with these installation requirements shall result in non-conformity with this standard.

#### 5.6.5 Security - type 4

For type 4 only security grade 2 is identified. It shall meet the following requirements.

Letterplates shall be supplied with fixings which, once installed, cannot be removed from the outside. The fixing shall remain intact when tested in accordance with 6.6.5.

## 6 Tests

All items shall be installed in accordance with the manufacturer's fixing instructions as supplied with the product.

### 6.1 Components

The requirements of 5.1 shall be satisfied.

### 6.2 Dimensions

The requirements of 5.2 shall be satisfied.

The dimensions are measured at $90^0$ to the introducing direction (see Figure 4).

The accuracy of the measuring instrument shall have a tolerance of less than ± 0,5 mm.

### 6.3 Ergonomics and safety

#### 6.3.1 Installation height of the aperture

The requirements of 5.3.1 shall be satisfied.

#### 6.3.2 Safety

The requirements of 5.3.2 shall be satisfied.

#### 6.3.3 Opening force of the flap

The force shall be determined by means of a measuring device with a max. tolerance of ± 0,25 N.

#### 6.3.4 Closing of the flap

The requirements of 5.3.4 shall be satisfied.

The test shall be carried out before and after the corrosion test has been performed.

### 6.4 Confidentiality

The requirements of 5.4 shall be satisfied.

## 6.5 Corrosion and water penetration

### 6.5.1 Corrosion

The testing of aperture components shall be carried out in accordance with EN 1670 and shall refer to functionality and appearance.

NOTE The appearance of copper or copper alloys can change.

### 6.5.2 Water penetration

Types 1 and 3 shall be exposed to a rain test in accordance with Figure 1. A sample shall be tested in position 1 and position 2. The duration of each test shall be 5 min. On conclusion of the test, the specimen shall be dried on the outside and opened. The volume of penetrated water shall not exceed 1 $cm^3$.

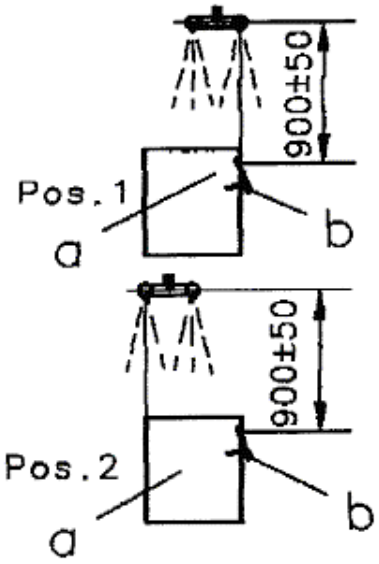
Types 1, 3 and 4 shall be exposed to a rain test in accordance with Figure 2. The duration of the rain test shall be 10 m. On conclusion of the test, the specimen shall be dried on the outside and opened. The volume of penetrated water shall not exceed 1 $cm^3$.

The volume of the penetrated water shall be measured with water-absorbent material, the weight of which shall be taken before and after absorption of the water.

The accepted volume shall be 1 $cm^3$. The accuracy of the measuring instrument shall have a tolerance of less than ± 10 %.

The design of the rain shower test device is shown in Figure 3. It consists of a welded H-shaped construction of ½" threaded galvanized pipe with a wall thickness of 2,6 ± 0,15 mm. The rain shower test device has 42 outflow holes. The water outflow during a test shall be 100 ± 10 l per hour. This corresponds to 800 l/ $m^2$/h.

Dimensions in millimetres

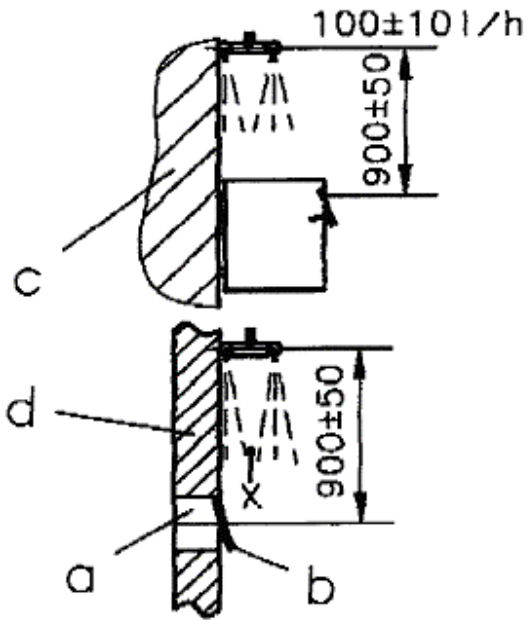



**Key**

a Aperture
b Flap

**Figure 1 — Rain test, type 1 and type 3**

Dimensions in millimetres




**Key**

a Aperture
b Flap
c Wall
d Door

**Figure 2 — Rain test, type 1, type 3 and type 4**

Dimensions in millimetres

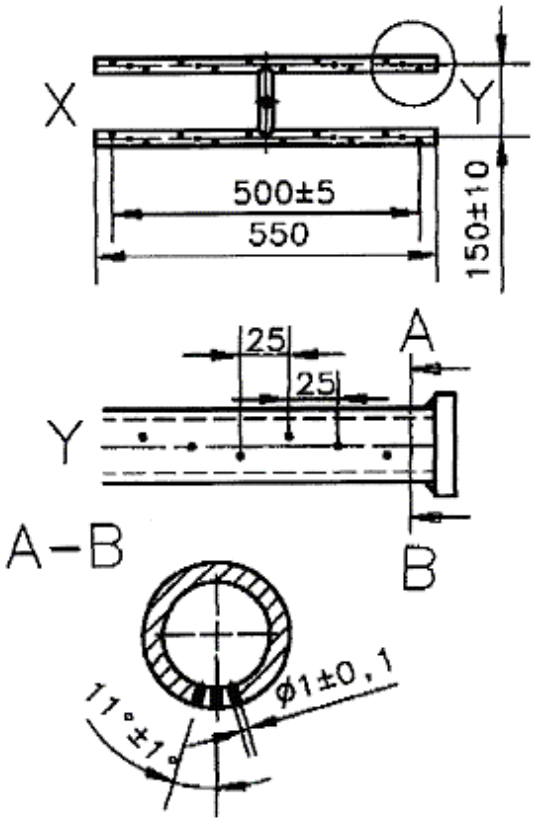



**Figure 3 — Design of rain shower test device**

## 6.6 Security

### 6.6.1 Theft prevention - types 1, 2 and 3

Where the aperture conforms to Table A.1 and if the distance, as shown in the theft prevention requirements and shown in Figure A.1, is less than 260 mm, the width of the security attachment shall be at least 15 mm. The distance between the rear edge of the security attachment and a pile of size C4 letter post items with a thickness of 40 mm shall be at least 5 mm. The design of the security attachment shall be such that, when referred to the main axis of the letter post item, it has a positive angle of incidence and prevents access to the letter post item without auxiliary means and without the use of force (see Figure 4).

Where the aperture is smaller than the dimensions stated in Table A.1 but wide enough to remove a letter post item whose smallest dimension (length or width) is 90 mm, the minimum distance of 130 mm between the aperture and a 40 mm high pile of letter post items shall be measured from the top of the pile to the nearest point of the aperture.

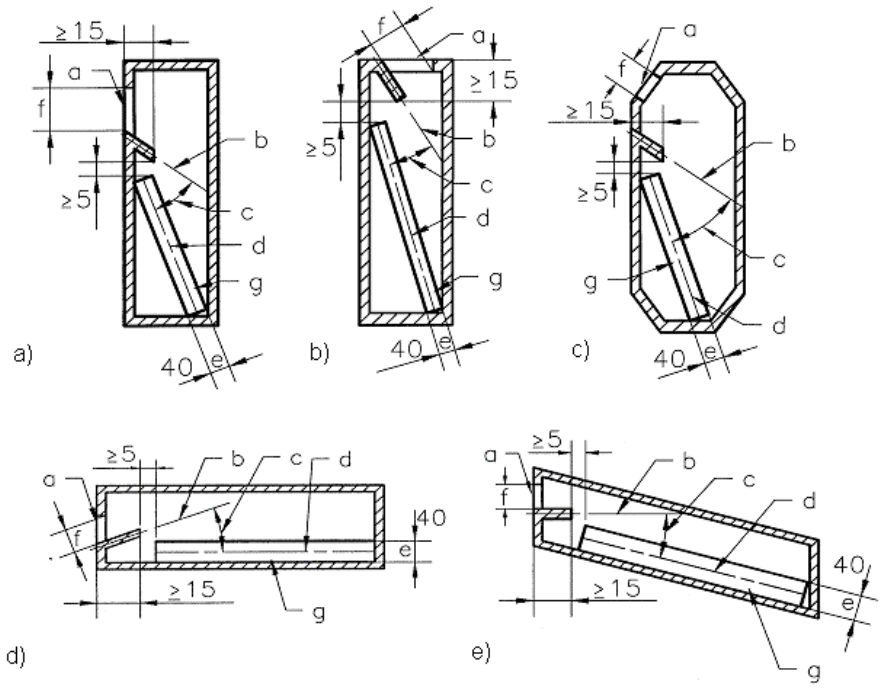
The accuracy of the measuring instrument shall be within ± 2 mm.

### 6.6.2 Theft prevention - type 4

If the minimum distance between the aperture and the receiving floor level is less than 680 mm, the same test methods as for types 1, 2 and 3 shall be applied (see Figure A.1).

EXAMPLE

Dimensions in millimetres




**Key**

a) Example for types 1,2 and 3
b) Example for types 1,2 and 3
c) Example for types 1,2 and 3
d) Example for type 3
e) Example for type 3
a Aperture
b Axis of security attachment
c Positive angle of postal items
d Main axis of postal items
e Stacking height
f Short side of aperture
g Pile of letter post items

**Figure 4 — Examples of security attachments**

NOTE The examples are only relevant in respect of the security attachment. The design of the letter boxes is not determined by this standard.

### 6.6.3 Security and locks - types 1, 2 and 3

The construction of the box door and the lock shall be tested for resistance to mechanical forces on a test device in compliance with the following description:

The test device (see Figure 5) consists of a horizontal wire with an integrated tension spring and a deflection pulley, from which a mass (m) of 15 kg for grade 1 and 22 kg for grade 2 (equivalent to a tensile force of 150 N for grade 1 and 220 N for grade 2) is suspended. By actuating a release mechanism, the weight drops an unobstructed distance of 300 mm after which it starts to act on the spring as a tensile force.

The spring travel (f) shall amount to 50 mm and the total drop of the weight shall be 350 mm, limited by a stop plate.

grade 1 spring rate $c = \frac{150\ N}{50\ mm} = 3{,}0\ \frac{N}{mm}$ tolerance $\pm 0{,}15\ \frac{N}{mm}$

grade 2 spring rate $c = \frac{220\ N}{50\ mm} = 4{,}4\ \frac{N}{mm}$ tolerance $\pm 0{,}15\ \frac{N}{mm}$

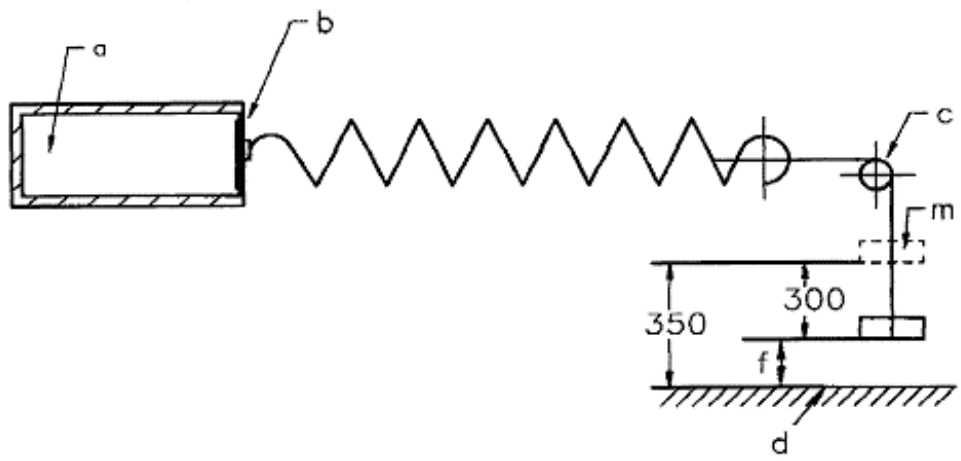
On testing doors:
— with an aperture, the test device shall be fastened in the middle of the aperture (see Figure 6a).;

— without an aperture, the test device shall be fastened at the top edge of the door and at a distance of 25 % of the door width from the outer edge of the side opposite to the hinge side (see Figure 6b).

NOTE The spring should be fastened to the door with a M6 size nut and screw. A plain washer with a maximum outer diameter of 12,8 mm can be used additionally.

The objective of the test is to check the test specimen for any permanent deformation.

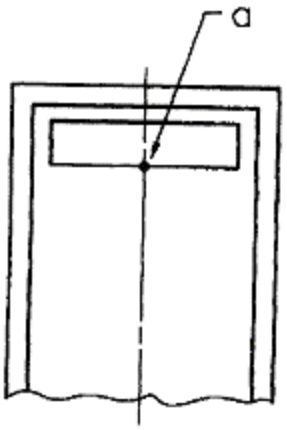
Dimensions in millimetres
all tolerances ± 2 mm




**Key**

a Types 1,2 and 3
b Door
c Deflection pulley
d Stop plate
f Spring travel
m Mass

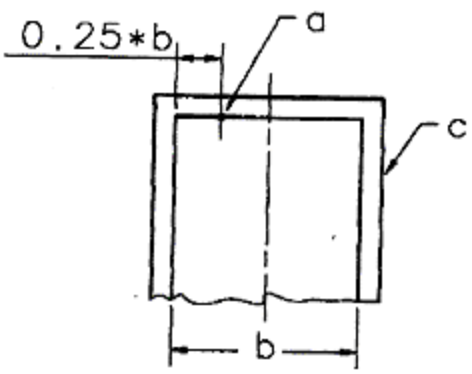
**Figure 5 — Test device**




**Key**

a Fastening point

**Figure 6a — Fastening points for the test device - Door with aperture**




**Key**

a Fastening point
b Lock side
c Hinge side

**Figure 6b — Fastening point for the test device - Door without aperture**

### 6.6.4 Protection against the opening of doors and windows - type 4

The requirements of 5.6.4 shall be satisfied.

### 6.6.5 Security – type 4

The letterplate shall be mounted in a 50 mm ± 2 mm thick block of European redwood in accordance with the manufacturer's fixing instructions.

#### 6.6.5.1 Fixings

This test is only required if, in order to fix a letterplate, it is necessary to cut a slot in the door or other background of which the short side is greater than 30 mm but no more than 40 mm. A load of 0,5 kN shall be applied gradually and without shock separately at each end of the frame and held for 10 s (see Figure 7).

If the slot in the door or other background is greater than 40 mm the applied load shall be 1,2 kN. The load shall be applied gradually and without shock separately at each end of the frame and held for 10 s.

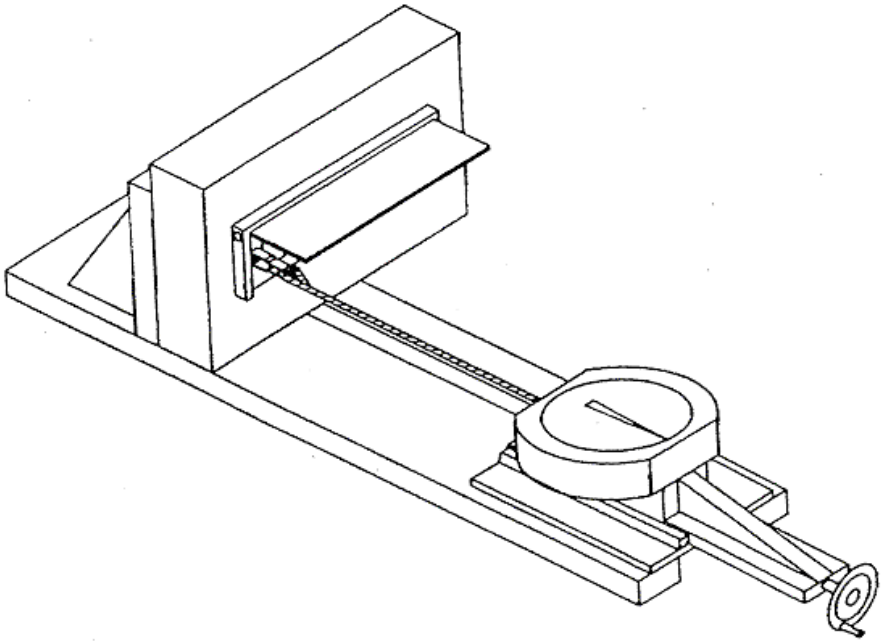


**Figure 7 — Test apparatus for testing strength of fixings**

#### 6.6.5.2 Flap

This test is only required if the short side of the aperture behind the flap is greater than 40 mm. A load of 1,0 kN shall be applied gradually and without shock to the flap, such that the force acts directly in shear with the pivot pin. Maintain for 10 s and repeat for each pivot pin (see Figure 8).

The test has to be carried out for both inward and outward opening flaps.

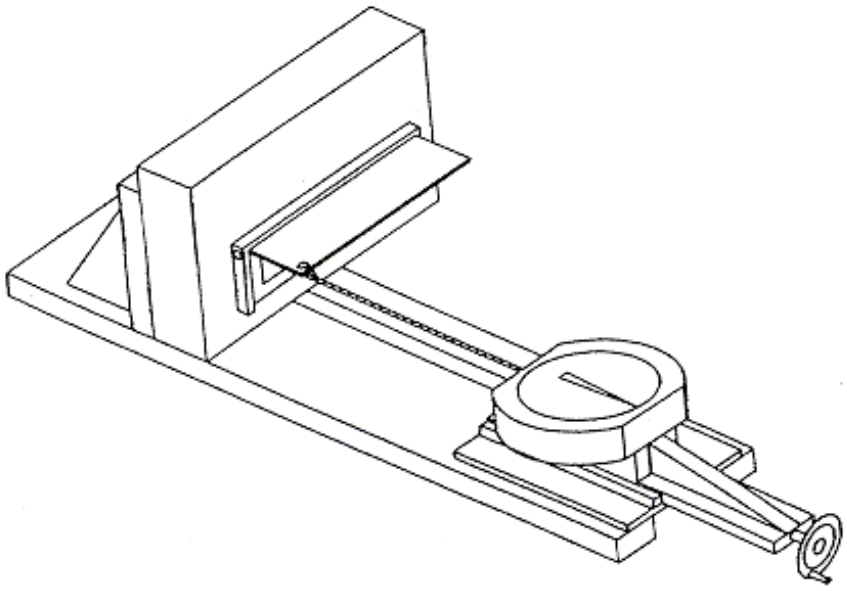


**Figure 8 — Test apparatus for testing strength of flap pivot**

The accuracy of the measuring tools shall be within ± 0,1 kN or ± 1,0 s or ± 0,5 mm.

# 7 Marking and labelling

If a manufacturer or trade mark owner claims that a product conforms to this standard, the manufacturer's name or the trade mark shall be included on the marking of the product.

In addition the following marking shall be included:

| | |
|---|---|
| EN | Standard: |
| Type | 1: outdoor use<br>2: indoor use<br>3: slide-through<br>4: letterplate |
| Size | 1: widthwise posting<br>2: lengthwise posting |
| Corrosion resistance | 0: no defined corrosion resistance<br>3: high corrosion resistance<br>4: very high corrosion resistance |
| Theft and burglar resistance | 1: standard prevention<br>2: improved prevention |

**Figure 9 — Product marking**

The method of affixing the marks i.e. by embossing, riveting or gluing, shall be left to the discretion of the manufacturer or trademark owner.

An example for the marking on product is given in Figure 10.

Example:

| | |
|---|---|
| EN<br>**13724:2002** | Standard: ..... |
| Type<br>**3** | 1: outdoor use<br>2: indoor use<br>3: slide-through<br>4: letterplate |
| Size<br>**2** | 1: widthwise posting<br>2: lengthwise posting |
| Corrosion resistance<br>**3** | 0: no defined corrosion resistance<br>3: high corrosion resistance<br>4: very high corrosion resistance |
| Theft and burglar resistance<br>**1** | 1: standard prevention<br>2: improved prevention |

**Figure 10 — Example of product marking**

Products complying with this standard shall be marked according to the following classification

| Type | Size | Corrosion resistance | Security |
|---|---|---|---|
| 1 | 2 | 3 | 2 |

This indicates a private letter box type 1 for outdoor use with a flap, size 2 for lengthwise posting with a high corrosion resistance, grade 3 and security locks grade 2.

# Annex A
(normative)

# Dimensions

Table A.1 states the dimensions of the aperture.

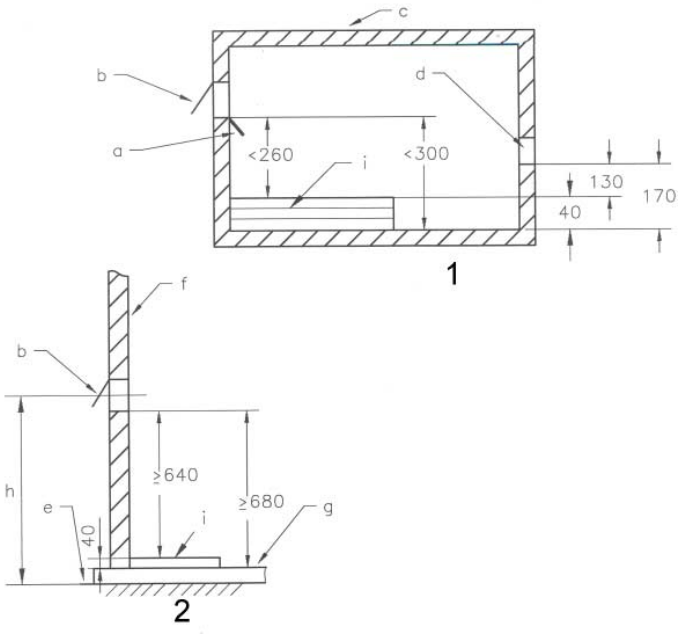
**Table A.1 — Dimensions of the aperture**

| size | type 1, 2 and 3<br>short side of aperture | type 4<br>short side of aperture | long side of aperture |
|---|---|---|---|
| 1 | min. 30 mm<br>max. 35 mm | min. 30 mm<br>max. 35 mm*<br>max .40 mm* | min. 325, max. 400 mm for widthwise posting |
| 2 | min. 30 mm<br>max. 35 mm | min. 30 mm<br>max. 35 mm*<br>max. 40 mm* | min. 230, max. 280 mm for lengthwise posting |

*a maximum of 40 mm is allowed, if the distance required in 5.6.2 is at least 680 mm.

Figure A.1 shows the distances for theft prevention

Dimensions in millimetres




**Key**

a Security attachment
b Flap
c Casing
d Small aperture
e Delivery floor level
f Door
g Receiving floor level
h see 5.3.1
i Pile of letter post items
1 Private letter box
2 Letter plate

**Figure A.1 — Distances for theft prevention**

# Annex B
(informative)

# A-deviations

**A-deviation:** National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN/CENELEC member.

This European Standard does not fall under any directive of the EC.

In the relevant CEN/CENELEC countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

**Belgium:**

| Clause | Deviation |
|---|---|
| 5.3.1 | “Arrêté royal du 12 janvier 1979” Article 84 prescribes that the apertures must be situated between 80 cm and 150 cm above floor level. This requirement conflicts with the present European Standard which allows, for ergonomic reasons, that the centreline of the aperture should be at a height between 700 mm and 1 700 mm. In special cases such as sets of apertures the range may be extended but shall be between 400 and 1 800 mm. |

**Netherlands:**

Ministerial Decree on Letter Boxes ”Besluit Brievenbussen” (Besluit van 12 december 1988/Nr. TP/10.423 HDTP (Stert. 1988, 252) stemming from Article 9 of the Dutch Postal Act (postwet 26 0ktober 1988 (Stb. 1988, 522)) on the following points:

| Clause | Deviation |
|---|---|
| 5.3.1 | ”Besluit Brievenbussen”, Article 2.2 prescribes that the apertures must be situated between 60 cm and 180 cm above floor level, and should preferably be situated at 110 cm above floor level. This requirement conflicts with the present European Standard which allows for apertures to be situated between 70 cm and 170 cm above floor level and in special cases between 40 cm and 180 cm above floor level.<br><br>”Besluit Brievenbussen”, Article 2.2 prescribes that apertures must be horizontal whereas the present European Standard allows vertical positioning. |
| Normative Annex A | ”Besluit Brievenbussen”, Article 2.3 prescribes that the aperture must be at least 265 mm wide and 32 mm high. This requirement conflicts with the present European Standard, which defines a minimum width of 230 mm and a minimum height of 30 mm for lengthwise posting. |