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English Version

Packaging - Tamper verification features for medicinal product packaging

Emballage - Témoins d'effraction pour emballages de médicaments

Verpackung - Merkmale zur Überprüfung von Manipulationen an Arzneimittelverpackungen

This European Standard was approved by CEN on 8 November 2014.

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Foreword

This document (EN 16679:2014) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

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Introduction

Directive 2011/62/EU [1], commonly referred to as the “Falsified Medicines Directive” (FMD), amending Directive 2001/83/EC [2], requires safety features for certain medicinal products to provide verification of the “authenticity and identification of individual packs”, and “a device allowing verification of whether the outer packaging has been tampered with”.

Directives are implemented into Member States' national legislation. This document is primarily aimed at supporting the implementation of tamper verification features to packaging for medicinal products in the European Union (EU) and European Economic Area (EEA).

1 Scope

This European Standard specifies requirements and provides guidance for the application, use and check of tamper verification features to the packaging of medicinal products.

NOTE The packaging of medicinal products placed on the market and incorporating tamper verification features in accordance with this European Standard meets the requirements of Directive 2001/83/EC as amended by Directive 2011/62/EU. Article 54(o) of the Directive stipulates, that on the outer packaging of certain medicinal products or, where there is no outer packaging, on the immediate packaging shall appear, among others, "a device allowing verification of whether the outer packaging has been tampered with".

The principles in this European Standard can be applied in other countries and sectors, as appropriate.

2 Terms and definitions

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

2.1 dispensing person

person authorized or entitled to supply medicinal products to the public

2.2 Falsified Medicines Directive

FMD
Directive 2011/62/EU

2.3 finished product

authorized medicinal product which has undergone all stages of production including packaging in its final container as it is dispensed, sold or otherwise supplied

2.4 immediate packaging

primary packaging
container or other form of packaging immediately in contact with the medicinal product

Note 1 to entry: The term immediate packaging, also known as primary packaging, has been chosen in the context of this European Standard because it is contained in Directive 2001/83/EC.

2.5 manufacturing authorization holder

natural or legal person or entity that is authorized for total or partial manufacture, and/or for the various processes of dividing up, packaging or presentation (in accordance with Directive 2001/83/EC, Article 40(2))

Note 1 to entry: This includes replacement of safety and tamper verification features (in accordance with Directive 2001/83/EC, Article 47a(1)(b) as amended by Directive 2011/62/EU).

2.6 marketing authorization holder

natural or legal person or entity responsible for placing the medicinal product on the market

2.7 outer packaging

secondary packaging
packaging into which the immediate packaging is placed as it is dispensed or otherwise supplied

Note 1 to entry: The term outer packaging, also known as secondary packaging, has been chosen in the context of this standard because it is contained in Directive 2001/83/EC.

2.8**tampering**

unauthorized attempt to open the packaging

2.9**tamper verification feature**

characteristic(s) allowing verification of whether the outer packaging of medicinal products or, where there is no outer packaging, the immediate packaging has been opened or tampered with

Note 1 to entry: Tamper verification "features" may be referred to as "devices", see Directive 2001/83/EC, Article 54(o) as amended by Directive 2011/62/EU.

2.10**verification**

confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

[SOURCE: EN ISO 9000:2005, 3.8.4]

3 General requirements**3.1 Tamper verification features**

Tamper verification features shall be applied to packaging of certain medicinal products as required in Directive 2001/83/EC as amended by Directive 2011/62/EU.

3.2 Purpose of tamper verification features

Tamper verification features should provide an indication that the outer packaging of a finished product has been opened or tampered with (i.e. indicating a possible adulteration or entry of falsified medicinal products into the legitimate supply chain). Tamper verification features limit the ability to replace the contents of genuine packs.

Tamper verification features are only one element of the safety features against falsification of the FMD and will not by themselves prevent falsification of medicinal products.

3.3 Application and use of tamper verification features

The application of tamper verification features shall not compromise the readability of statutory information. The statutory text on the packaging should remain readable after opening the pack.

Applying tamper verification features may increase the physical strength needed to open the packaging.

3.4 Check of tamper verification features

The tamper verification feature should enable a visual check for its presence and any evidence of tampering (see 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9 and 4.10 for details).

The immediate packaging of medicinal products may also provide tamper verification. This serves a different purpose, most significantly to prevent interference with the medicinal product itself and does not meet the tamper verification requirements of Directive 2001/83/EC as amended by Directive 2011/62/EU. However it also provides another level of protection against tampering but only in combination with additional measures as described.

Wholesalers, dispensing persons and other authorized persons may need access to information on the tamper verification features employed on particular products.

NOTE Other authorized persons include holders of a manufacturing authorization or customs authorities.

4 Categories of tamper verification features

4.1 General

Tamper verification technologies applied on the packaging are under constant evolution. Nine broad categories of tamper verification features are described in this European Standard (see 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9 and 4.10). Other tamper verification features may exist or be developed and shall meet the requirements of this European Standard as appropriate. The illustrations in Clause 4 are non-exhaustive.

Annex A provides additional information on tamper verification features as listed in 4.2 to 4.10.

If there is no outer packaging, the immediate packaging (e.g. bottles and tubes) should be equipped with a tamper verification feature in accordance with 4.4 to 4.10.

Tamper verification features shall meet the requirements of Clause 3.

The marketing authorization holder shall decide (if legally required) on appropriate tamper verification feature(s) out of the following (see 4.2 to 4.11).

This choice may be based on an assessment that takes into account a number of factors including technical feasibility, appropriateness, effectiveness, other safety features used on the product, and overall cost.

4.2 Folding boxes closed with glue

4.2.1 Description

A glue, e.g. hot melt, polyurethane, dispersion or other glues, or a combination of glues is applied to close the folding box. These boxes may incorporate perforations to facilitate the opening of the pack.

4.2.2 Criteria of tamper verification

Folding boxes closed with glue shall be cut or torn to gain access to the product. The box cannot be opened without visual tear-off/ripping-off of the carton board surface and/or other parts of the folding box.

4.2.3 Verification

First time opening of the folding box leads to visible damage of the folding box integrity, for example (see Figure 1 and Figure 2):

- visible damage of one or more of the flaps (see Figure 1 b) and Figure 1 c));
- visible damage of perforations (see Figure 2 b) and Figure 2 c));
- visible damage of other parts of the folding box.

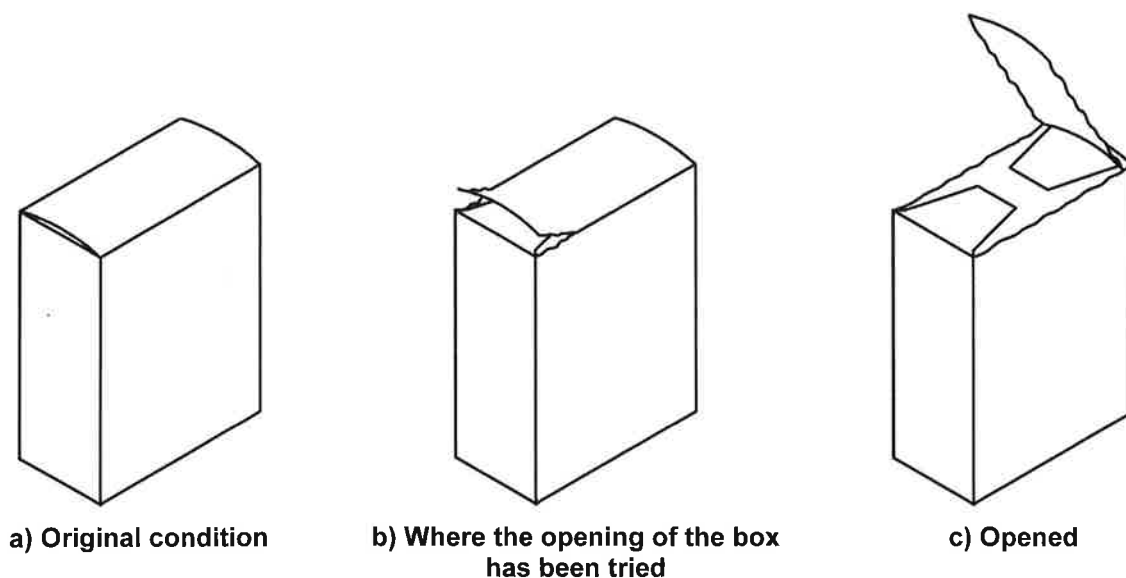


Figure 1 — Example of a folding box closed with glue

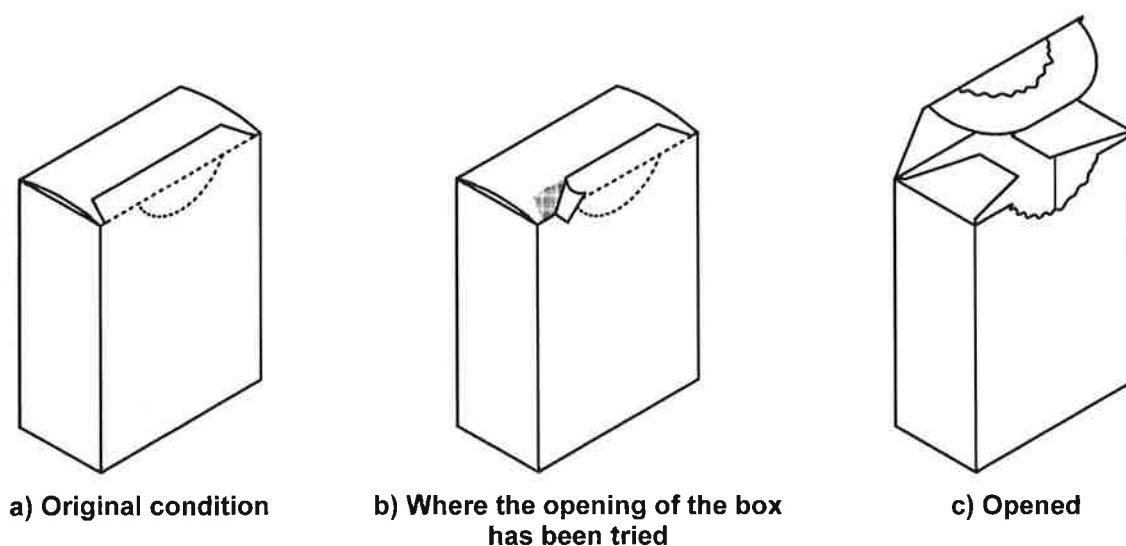


Figure 2 — Example of a folding box with perforations closed with glue

4.3 Specially constructed folding boxes

4.3.1 Description

The flaps and the body of the folding box are constructed in such a way that the feature is activated/enabled by inserting the flaps by the manufacturer to close the folding box. First time opening leads to a visible, irreversible change of the folding box appearance in such way, that parts of the flaps or of the folding box are damaged.

4.3.2 Criteria of tamper verification

The closure is set up in such a way that, the first time the box is opened, parts of the flaps or of the folding box are ripped off and/or are torn.

4.3.3 Verification

First time opening leads to visible, irreversible damage of the folding box integrity for example (see Figure 3):

- visible damage of one or more of the flaps (see Figure 3 b) and Figure 3 c));
- visible damage of perforations and/or scores/half cuts, if applicable;
- visible damage of other parts of the folding box.

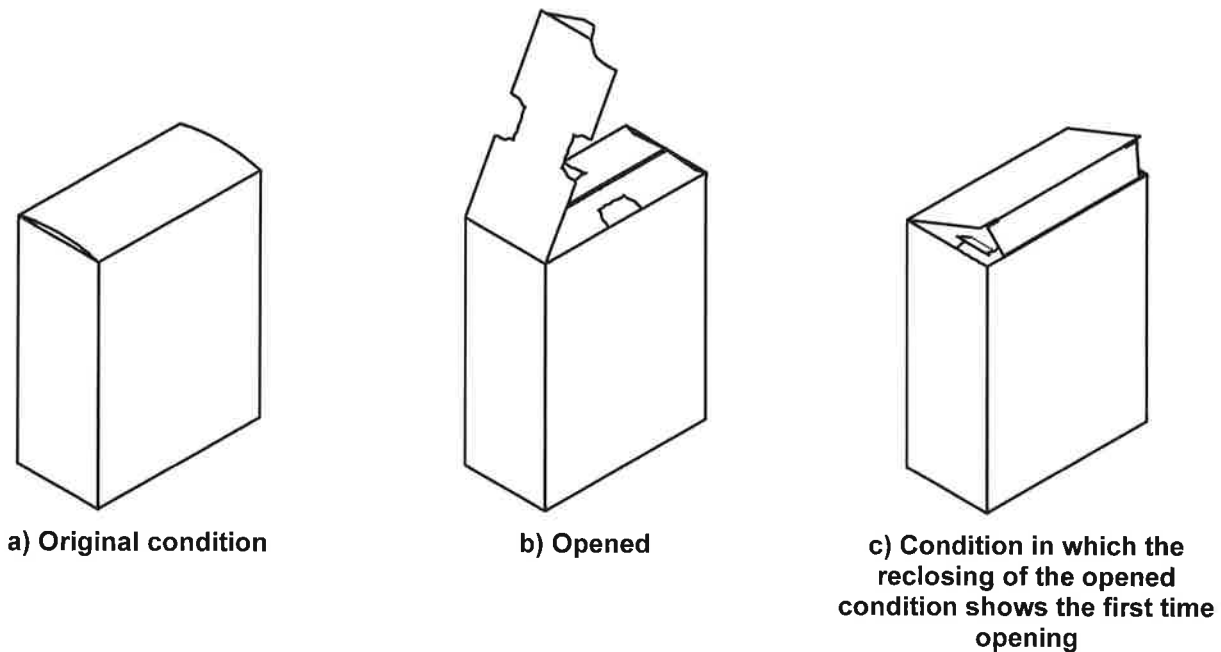


Figure 3 — Example of a specially constructed folding box

4.4 Sealing labels and tapes

4.4.1 Description

A label or tape (e.g. from paper, film or laminate) is applied in order to seal the packaging of medicinal products. The packaging to be sealed may incorporate perforations to facilitate the opening of the pack. The sealing label or tape shall provide the integrity of the sealed packaging component.

4.4.2 Criteria of tamper verification

Tampering of the sealing label or tape or opening of the packaging shall lead to visible, irreversible damage or change of the packaging and/or of the label or tape.

4.4.3 Verification

Verification of typical categories of sealing labels or tapes (see Figure 4 and Figure 5) are:

- 1) **Fibre-tear seal:** By tampering/tearing off the sealing label or tape the fibre or the surface of the packaging is torn or ripped off and thus clearly indicates a visible, irreversible damage or change of the packaging.
- 2) **Void seal:** By tampering/tearing off the sealing label or tape a hidden pattern or text of the sealing label or tape becomes irreversibly visible on the sealing label or tape and on the packaging.

- 3) **Seal made with opening strips or perforations:** By tampering or opening or tearing off the sealing label or tape the sealing label or tape becomes irreversibly torn, broken or peeled off and indicates that the individual product container has previously been sealed.
- 4) **Seal made of fragile material:** By tampering or opening or tearing off the sealing label or tape the sealing label or tape becomes irreversibly torn or broken.

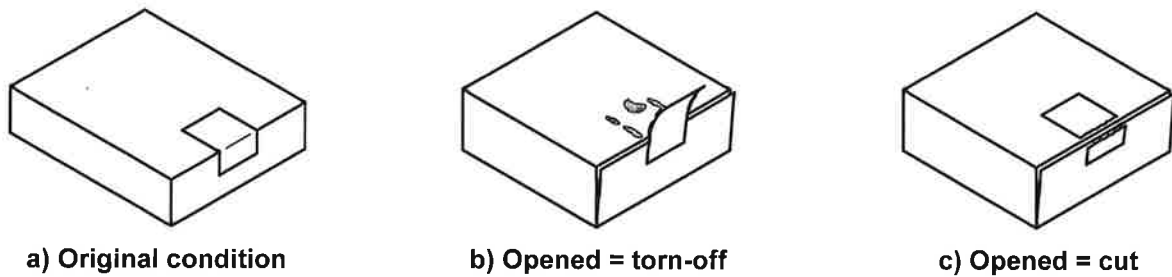


Figure 4 — Example of a sealing label or tape

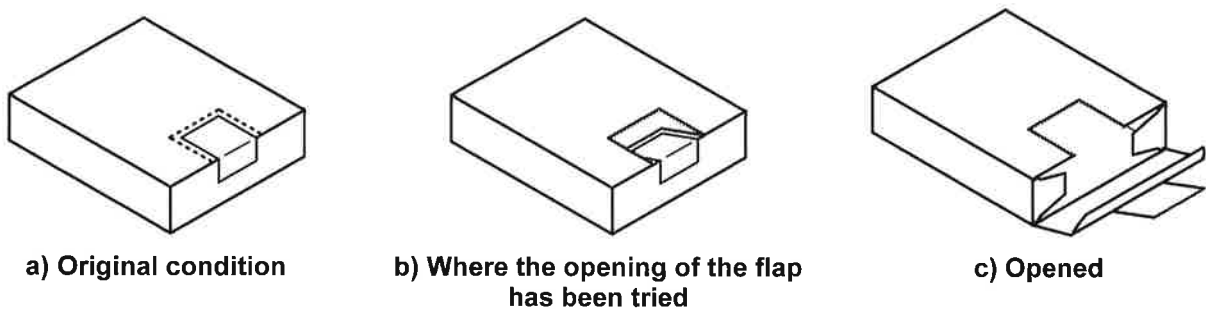


Figure 5 — Example of a folding box with perforations closed with a label or tape

NOTE Further examples for sealing labels or tapes are bespoke tamper-evident void seals and seals with opening strip.

4.5 Film wrappers

4.5.1 Description

The product container or part of it is wrapped in film ensuring the product is appropriately sealed. The film shall be ripped or broken to gain access to the product.

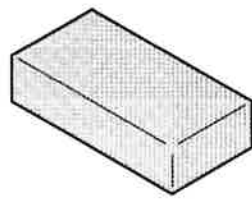
4.5.2 Criteria of tamper verification

Tampering or opening shall lead to visible, irreversible damage or change of the film wrapper and show visible evidence of tampering.

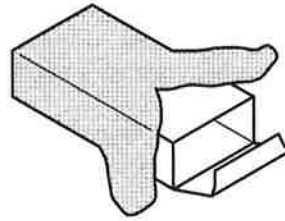
4.5.3 Verification

First time opening leads to visible, irreversible damage of the film wrapper and provides the indication that the outer package has been tampered with. The film wrapper cannot be removed and resealed without showing visible evidence of tampering (see Figure 6).

It may be appropriate to indicate that a film wrapper should be present.



a) Original condition



b) Opened

Figure 6 — Example of a film wrapper

4.6 Sleeves

4.6.1 Description

A film is shrunk around the immediate packaging or at least around its closure, where the film adapts to the outer shape. The sleeve shall be ripped or broken to gain access to the product.

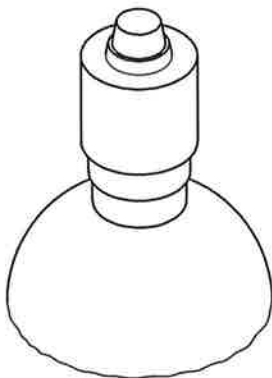
4.6.2 Criteria of tamper verification

Tampering or opening shall lead to visible, irreversible damage or change of the sleeve and show visible evidence of tampering.

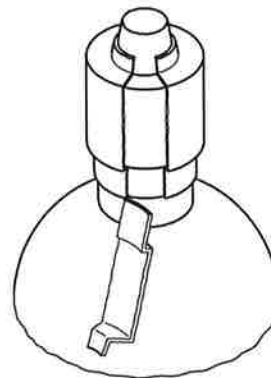
4.6.3 Verification

First time opening leads to visible, irreversible damage of the sleeve and provides the indication that the immediate packaging or its closure has been tampered with. The sleeve cannot be removed and resealed without showing visible evidence of tampering (see Figure 7).

It may be appropriate to indicate that a sleeve should be present.



a) Original condition



b) Opened

Figure 7 — Example of a sleeve shrunk around a closure of a bottle

4.7 Breakable or tear-away closure

4.7.1 Description

The product container is closed with a breakable or tear-away closure, made of metal or plastic, that has a portion that breaks on opening.

4.7.2 Criteria of tamper verification

Tampering or opening shall lead to visible, irreversible change in the closure and show visible evidence of tampering.

4.7.3 Verification

First time opening leads to visible, irreversible change in the closure. The closure cannot be removed and reapplied in its original state (see Figure 8 and Figure 9).

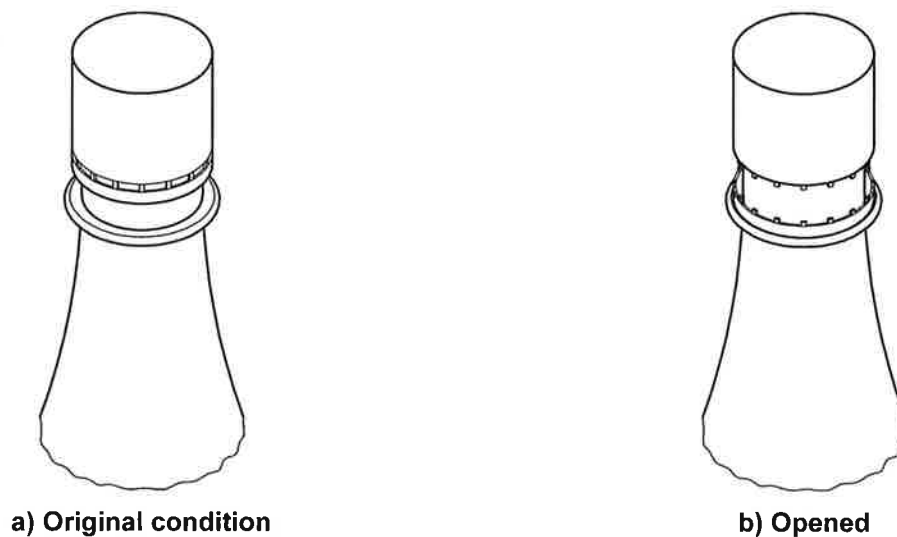


Figure 8 — Example of a breakable closure

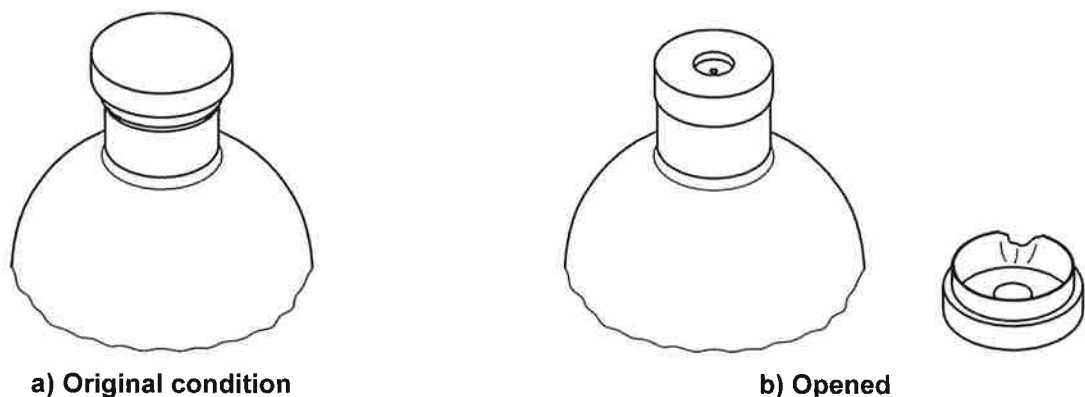


Figure 9 — Example of a tear-away closure

4.8 Display blister pack

4.8.1 Description

The product is sealed into a display blister pack which shall be cut or broken to gain access to the product. The display blister pack shall be intact and sealed all the way around.

4.8.2 Criteria of tamper verification

Tampering or opening shall lead to visible, irreversible damage or change of the display blister pack and show visible evidence of tampering.

4.8.3 Verification

First time opening leads to visible, irreversible damage of the display blister pack and/or its sealing. The display blister pack cannot be opened and reclosed without showing visible evidence of tampering (see Figure 10).

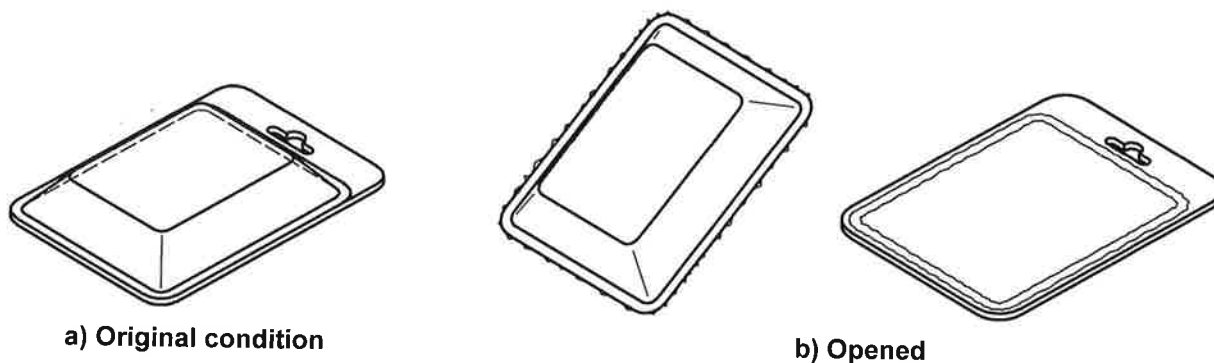


Figure 10 — Example of a display blister pack

4.9 Flexible packaging

4.9.1 Description

The medicinal product is sealed into a film or foil or combination thereof, e.g. pouches, sachets. The packaging shall be ripped or broken to gain access to the product.

4.9.2 Criteria of tamper verification

Tampering or opening shall lead to visible, irreversible damage or change of the flexible packaging and show visible evidence of tampering.

4.9.3 Verification

First time opening leads to visible, irreversible damage of the flexible packaging and/or its sealing. The flexible packaging cannot be opened and reclosed without showing visible evidence of tampering (see Figure 11).

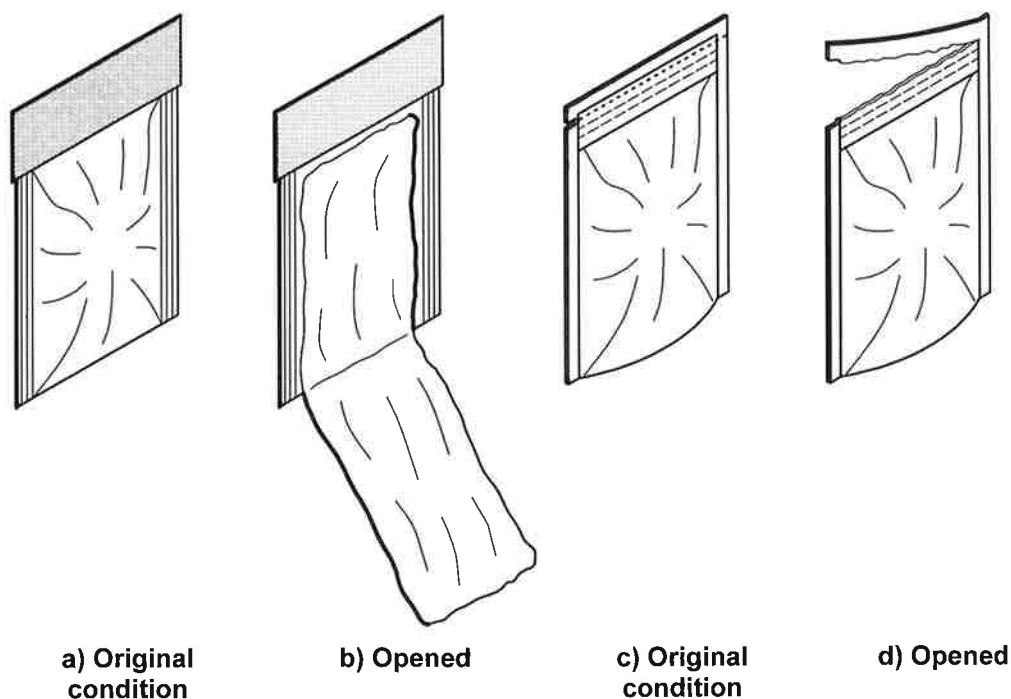


Figure 11 — Two examples of a flexible packaging

4.10 Blow-fill-and-seal-container (BFS)

4.10.1 Description

The BFS container is made from plastic material and is formed, filled and sealed in a continuous process. The BFS container shall be penetrated or broken to gain access to the product.

4.10.2 Criteria of tamper verification

Tampering or opening shall lead to visible, irreversible damage or change of the BFS container and show visible evidence of tampering.

4.10.3 Verification

First time opening leads to visible, irreversible damage of the BFS container. The BFS container cannot be opened and reclosed without showing visible evidence of tampering. Squeezing may be recommended in order to check that the BFS container leaks (see Figure 12).

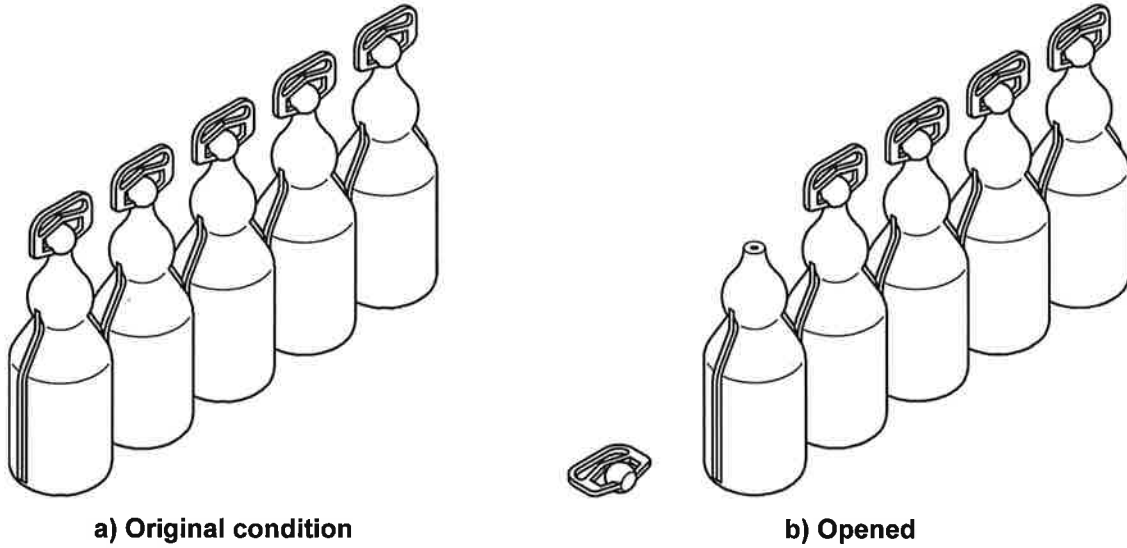


Figure 12 — Example of a blow-fill-and-seal-container

4.11 New and emerging technologies

Other tamper verification features may be developed and shall meet the requirements of this European Standard as appropriate.

Annex A (informative)

Additional information regarding tamper verification features

Table A.1

Category	Description
General comments	<ul style="list-style-type: none"> • Tamper verification features are used in sectors other than for medicinal products. • There may be a regulatory impact and a notification required if there are layout or artwork changes. • Change management costs may occur.
Folding boxes closed with glue	<ul style="list-style-type: none"> • Immediately visible if folding box is glued or not if appropriate design is used. • Perforations may facilitate opening as intended.
Specially constructed folding boxes	<ul style="list-style-type: none"> • Tamper verification features are included in design of the folding box.
Sealing labels and tapes	<ul style="list-style-type: none"> • There is a variety of label material(s), constructions and visual effects to indicate the opening of the package. • The presence of perforations or opening flaps may facilitate opening as intended.
Film wrappers	<ul style="list-style-type: none"> • The use of tear tape or perforations may facilitate opening as intended.
Sleeves	<ul style="list-style-type: none"> • The use of tear tape or perforations may facilitate opening as intended.
Display blister packs	<ul style="list-style-type: none"> • The presence of perforations may facilitate opening as intended.
Tamper verification features on immediate packaging	<ul style="list-style-type: none"> • Tamper verification features, such as described in 4.4, 4.5, 4.6 and 4.7, may be included in the closure of the immediate packaging. • The presence of perforations or other opening aids may facilitate the opening of the closure (e.g. caps) as intended.

Bibliography

Further information can be obtained from the website sources given below. This list is non-exhaustive and the information available given should not necessarily be treated as authoritative. Any proposed action taken using such information should be checked against local regulatory requirements.

- [1] Directive 2011/62/EU of the European Parliament and of the Council of 8 June 2011 amending Directive 2001/83/EC on the Community code relating to medicinal products for human use, as regards the prevention of the entry into the legal supply chain of falsified medicinal products (OJ L 174, 1.7.2011, p. 74-87). http://ec.europa.eu/health/files/eudralex/vol-1/dir_2011_62/dir_2011_62_en.pdf
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