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Poštne storitve - Pismarnice za mednarodne pisemske pošiljke - Preskusne metode in zahtevane lastnosti

Postal services - Trays for international letter mail - Test methods and performance requirements

Postalische Dienstleistungen - Behälter für internationale Briefsendungen - Testmethoden und Anforderungen

Services postaux - Caissettes pour le courrier international - Méthodes d'essais et exigences de performances

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Postal services - Trays for international letter mail - Test methods and performance requirements

Services postaux - Caissettes pour le courrier international - Méthodes d'essais et exigences de performances

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 14482:2010) has been prepared by Technical Committee CEN/TC 331 “Postal services”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by April 2011, and conflicting national standards shall be withdrawn at the latest by April 2011.

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This document supersedes CEN/TS 14482:2003.

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Introduction

The European Union Commission stressed already in its Green paper on postal services in 1992 the need to establish common rules for the development of community postal services and the improvement of quality of service.

Furthermore the Commission has acknowledged the need for technical harmonisation to increase the interoperability of postal networks in the Member States and has given CEN a mandate to define fields where such harmonisation could be useful and suggest priorities and timescales.

1 Scope

This European Standard specifies the performance requirements and testing methods for standard letter mail trays, as specified in the classification below. The trays should be used to facilitate the exchange of international mail. The technical specification of the trays should be such that the performance requirements specified herein are met and tests specified herein successfully completed. The technical specifications of trays as such however, are beyond the scope of this standard.

This standard covers a one-size universal letter mail tray suitable for carrying C4, C5 and C6 mail:

Table 1 — Letters (maximum accepted sizes)

	Height	Width
C4	353 mm	250 mm
C5	173 mm	250 mm
C6	120 mm	250 mm

The trays are suitable for containing C4 mail stacked in a horizontal plane and for stacking C5 and C6 mail vertically.

2 Normative references

The following referenced documents are indispensable for the application 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 1005-2, *Safety of machinery — Human physical performance — Part 2: Manual handling of machinery and component parts of machinery*

EN 22206, *Packaging — Complete, filled transport packages — Identification of parts when testing (ISO 2206:1987)*

EN 22248, *Packaging — Complete, filled transport packages — Vertical impact test by dropping (ISO 2248:1985)*

EN 60695-11-20, *Fire hazard testing — Part 11-20: Test flames — 500 W flame test methods (IEC 60695-11-20:1999)*

EN ISO 2233, *Packaging — Complete, filled transport packages and unit loads — Conditioning for testing (ISO 2233:2000)*

EN ISO 2247, *Packaging — Complete, filled transport packages and unit loads — Vibration tests at fixed low frequency (ISO 2247:2000)*

EN ISO 2875, *Packaging — Complete, filled transport packages and unit loads — Water-spray test (ISO 2875:2000)*

EN ISO 4180, *Packaging — Complete, filled transport packages — General rules for the compilation of performance test schedules (ISO 4180:2009)*

EN ISO 12048, *Packaging — Complete, filled transport packages — Compression and stacking tests using a compression tester (ISO 12048:1994)*

3 Terms and definitions

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

3.1
compatibility
ability for trays and closures to fit well onto each other and ability of easy nesting into each other as well as separating of trays and closures from each other

3.2
durability
ability of a tray and closure to withstand conditions to which it is subjected (when tested)

3.3
friction
capacity to prevent sliding on an inclined low friction conveying surface specified as the coefficient of friction

3.4
letter mail
category of postal items classified according to its physical characteristics such as weight and dimensions

3.5
nestability
ability of trays and closures to fit together one partially inside the other (measured as the ratio of the number of trays and closures which can be nested in a stack for one tray (tray and closure) height)

3.6
recyclability
ability to recover the material of a discarded tray (measured as the content of recycled material in a tray)

3.7
stackability
ability to be stacked and fully palletisable when filled with letter mail

3.8
temperature resistance
ability to maintain shape (when conditioned) within a pre-defined temperature range

3.9
tray
primary container with closure for the carriage of letter mail

3.10
weather resistance
ability to remain serviceable (when conditioned) under specific weather conditions

4 Requirements

4.1 General

The mail tray shall meet all the requirements stated in Clause 4.

4.2 Tray size requirements

Minimum internal tray dimensions shall accommodate mail of the following sizes with ease of handling:

Table 2

	Height	Width
C4	353 mm	250 mm
C5	173 mm	250 mm
C6	120 mm	250 mm

4.3 Tray performance requirement

4.3.1 Compatibility

Trays and closures shall fit well onto each other, nest easily into each other and separate well from each other without the use of undue force.

4.3.2 Compression

The trays shall meet a minimum compression strength requirement of 180 kg at a deflection of less than 10 mm before failure.

NOTE This represents a five high stack of trays each weighing 10 kg and a safety factor of 4,5, as specified in EN ISO 12048.

4.3.3 Durability

Trays shall withstand drop, vibration and crushing simulations as per the following:

Each tray shall withstand a minimum average of 70 cycles with a standard deviation of maximum 20 %, as specified in EN ISO 2247, EN 22248, EN ISO 4180.

4.3.4 Closure

The closure of the tray is to provide security during transit and handling. The closures shall fit well on the tray to prevent tampering with the content. The closures shall be enclosed tightly to the tray by means of strapping in both directions, once over the width and once over the length of the tray.

4.3.5 Flammability

Trays manufactured from plastic material shall meet requirements as specified in EN 60695-11-20. Trays made from alternative materials shall meet similar requirements when tested with appropriate flammability tests.

4.3.6 Friction

The friction coefficient between tray and conveyor surface as specified in 5.3.6 shall not be lower than 0,31.

4.3.7 Handles/handholds

Handles/handholds shall be designed for ergonomically comfortable handling, with no sharp edges and as referenced in EN 1005-2.

4.3.8 Nestability

Nesting ratio of trays and closures to the one "tray and closure height" shall be a minimum of 1:5. The better the nesting ratio the lower the transport cost for moving empty trays and closures.

4.3.9 Recyclability

Trays should be manufactured from a material which is recyclable as specified in EN 13430.

4.3.10 Stackability

Trays shall be stackable and inter-stackable. Trays that are stacked shall be placed on a flat, horizontal and level surface and remain stable at up to 1,8 m stacking height.

4.3.11 Tare weight

The tray and closure shall meet the tray dimensions and durability requirements specified with a tare weight remaining as light as possible. Because of the impact of tare weight on transport cost, the tare weight shall not be higher than 10 % of the maximum filled weight of the tray. The mail load capacity of the tray is determined by the minimum tray dimensions specified in 4.2. The average tare weight shall not exceed 1 050 g and the standard deviation shall not be higher than 1 % of the average weight.

4.3.12 Temperature resistance

Trays shall be capable of being handled at extreme temperatures, as specified in EN ISO 2233:

— from - 35 °C to 70 °C there shall be materials stability such that the material shall maintain its essential shape for up to 8 h;

— at - 35 °C the trays shall be resistant to the drop test (perform the drop test on the edge of the loaded tray with 10 kg gross weight from 1 m high).

4.3.13 Weather resistance − Water spray exposure

The tray and closure shall be weather resistant with no more than 3 % ingress of water as specified in EN ISO 2875.

5 Test method

5.1 Test methods introduction

The following testing methods were designed to represent simulation of real life usage and handling in an international mail exchange environment. The test methods intend to characterize the functionality, strength and life span of trays used in the exchange of international mail. The tests are laboratory tests.

Life span is expressed as number of cycles successfully completed in the durability test (5.3.10), which is meant to reflect the minimum number of trips the tray can make in real life before failure. The life span expressed as number of cycles is not meant to be an indicator for the economic life span, although in general the higher the number of cycles the higher the economic life span. Economic life span on the one hand is a function of materials / design / manufacture and is defined by the technical specification of the tray, and on the other hand it is a function of the equipment management determining circulation time and number of trays in circulation. These factors are outside the scope of this standard.

The tests can be used as pre-production tests as well as postproduction tests. The test method allows for testing of trays and closures manufactured using different tools and by different manufacturers.