

Packaging — Paper sacks for household waste collection — Types, requirements and test methods

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British Standard

ICS 13.030.40; 55.080

National foreword

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The UK participation in its preparation was entrusted by Technical Committee PKW/5, Primary and transport packaging, to Subcommittee PKW/5/23, Paper and paperboard packaging, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
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Packaging - Paper sacks for household waste collection - Types, requirements and test methods

Emballage - Sacs en papier pour la collecte de déchets
ménagers - Types, spécifications et méthodes d'essai

Verpackung - Papiersäcke für die Abfallsammlung aus
Haushalten - Typen, Anforderungen und Prüfverfahren

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Foreword

This document (EN 13593:2003) 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of an identical text or by endorsement, at the latest by July 2003, and conflicting national standards shall be withdrawn at the latest by July 2003.

Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the general characteristics, types and test performance for sacks or liners made from paper, used for household waste collection.

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).

EN 13432, *Packaging — Requirements for packaging recoverable through composting and biodegradation — Test scheme and evaluation criteria for the final acceptance of packaging*.

EN ISO 536, *Paper and board — Determination of grammage (ISO 536:1995)*.

EN ISO 1924-2, *Paper and board — Determination of tensile properties — Part 2: Constant rate of elongation method (ISO 1924-2:1994)*.

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

EN ISO 8367-1, *Packaging — Dimensional tolerances for general purpose sacks — Part 1: Paper sacks (ISO 8367-1:1993)*.

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

EN 26590-1, *Packaging — Sacks — Vocabulary and types — Part 1: Paper sacks (ISO 6590-1:1983)*.

EN 26591-1, *Packaging — Sacks — Description and method of measurement — Part 1: Empty paper sacks (ISO 6591-1:1984)*.

EN 27023, *Packaging — Sacks — Method of sampling empty sacks for testing (ISO 7023:1983)*.

ISO 1928, *Solid mineral fuels — Determination of gross calorific value by the bomb calorimetric method, and calculation of net calorific value*.

ISO 3781, *Paper and board — Determination of tensile strength after immersion in water*.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 26590-1 together with the following apply.

3.1

free-carrying sack

sack used to collect and carry waste, which is capable of being picked up and carried when fully loaded

3.2

household waste

waste excluding hospital and industrial waste

3.3

liner

sack which is intended to be used in waste collection systems without carrying any load when removed from the container

4 Applications

There are four basic collecting groups for collecting household waste:

Class	Free carrying sack or liner for the collection of household waste for:
A	Energy recovery (incineration)
B	Material recovery
C	Landfill
D	Organic recovery (composting or bio-gas production)

NOTE In the future other systems can be developed and hence more classes added.

5 Dimensions and types

Dimensions shall be measured and expressed in accordance with the method of measurement given in EN 26591-1. The type to be used shall be "open mouth" in accordance with EN 26590-1 or the type and the construction of the sack shall be by agreement between the user and the supplier.

6 Requirements

NOTE Additional requirements which can be subject to agreement between the user and the supplier are given in annex A.

6.1 General requirements for free carrying sacks or liners

6.1.1 Dimensions

The dimensions of the free carrying sack or liner shall be by agreement between the user and the supplier.

6.1.2 Grammage

The grammage of paper shall be determined in accordance with EN ISO 536.

6.1.3 Tolerances

If there are no special tolerance requirements, the tolerances shall be in accordance with EN ISO 8367-1.

6.2 Special requirements for Class A sacks or liners for the energy recovery process

6.2.1 Components of sacks or liners

The materials used in sacks or liners shall fulfil the standards on energy recovery process.

Packaging composed of more than 50 % (by weight) of organic material, e.g. wood, cardboard, paper and other organic fibres, starch, plastics, provides calorific gain and shall be considered recoverable in the form of energy (see EN 13431).

6.2.2 Inferior calorific value

The materials used in sacks or liners shall fulfil the standards on inferior calorific value for an energy recovery process (as determined according to ISO 1928).

6.3 Special requirements for Class B sacks or liners for material recovery

The materials used in sacks or liners shall not have a negative influence on material recovery process.

6.4 Special requirements for Class C sacks or liners for landfill

There are no special requirements.

6.5 Special requirements for Class D sacks or liners for organic recovery (composting and bio-gas production)

The sacks shall be recoverable through composting and biodegradation in accordance with EN 13432.

7 Sampling for testing

Sampling shall be in accordance with EN 27023.

8 Conditioning

Before testing the test samples shall be conditioned, which shall be done in accordance with EN ISO 2233 (conditioning shall be at (23 ± 2) °C in (50 ± 5) % relative humidity) for at least 24 h before testing.

9 Test methods

9.1 Drop test

For all types of free carrying sacks, a “butt dropping” drop test shall be required.

NOTE A drop test is not required for liners.

According to the load which it is designed to carry, the load shall be agreed upon by the user and supplier.

The drop test method shall be in accordance with EN 22248.

The drop height shall be $(1\ 200 \pm 10)$ mm.

There shall be one drop per sack.

The filling material shall be small jute bags with the empty dimensions of 180 mm (320 ± 10) mm, filled with LDPE granules and closed by stitching at least 40 mm from the filling opening. Each bag shall have a total mass of (500 ± 10) g.

The test load shall be as agreed by the user and supplier rounded up to the nearest filled jute bag.

At least 30 sacks have to be tested, and the test has failed if more than 3 sacks failed.

The sack has failed if there are openings bigger than 50 mm in length.

9.2 Resistance to wet household waste and wet climatic conditions

All materials that can be influenced by wetness, coming from inside and/or outside, shall be tested in accordance with ISO 3781.

After the test, the tensile strength (determined according to EN ISO 1924-2) of the tested material shall be at least 20 % of the original tensile strength. After immersion in water, the lowest tensile strength (determined according to EN ISO 1924-2) of the tested material shall not fall below the value stated: the load agreed between user and supplier, multiplied by 1.1 and divided by 2 times the width of the sack expressed in KN/m. Additional requirements on wet climatic conditions shall be agreed upon between user and supplier.

10 Test report

All required tests for the particular class of free carrying sack or liner shall be recorded in a test report, which shall contain:

- a) name of the supplier;
- b) class of free carrying sack or liner (clause 4 Applications);
- c) extra requirements to the type;
- d) dimensions;
- e) composition;
- f) test load;
- g) results of the different tests as required in the test method standards.

11 Declaration of conformity

The supplier shall provide a declaration of conformity for the type of free carrying sack or liner, together with any additional requirements and the reference number of the test report, including the test load.

12 Marking

The following marking shall be printed on each sack:

- a) identification mark of the responsible supplier;
- b) class of free carrying sack or liner.

Annex A (informative)

Additional requirements

A.1 General

In some cases there are additional requirements based on aesthetic reasons and/or systems requiring separation at source.

A.2 Reducing the weight by desiccation

Normally the weight of moist household waste is reduced during storage in paper sacks due to evaporation of water (30 % weight reduction is common). A minimum water vapour permeability of the paper material (determined according to ISO 9932:1990) can be agreed between buyer and seller.

A.3 Safety warnings

In some countries the law requires that for certain materials, safety warnings such as "Keep away from children!" shall be printed on paper sacks. Such warnings should be printed accordingly.

Bibliography

EN 13431, *Packaging — Requirements for packaging recoverable in the form of energy recovery, including specification of minimum inferior calorific value.*

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