ILNAS

Institut luxembourgeois de la normalisation
de l'accréditation, de la sécurité et qualité
des produits et services

ILNAS-EN 13207:2018

Plastics - Thermoplastic silage films and tubes for use in agriculture

Kunststoffe - Thermoplastische Silofolien und -schläuche für den Einsatz in der Landwirtschaft

Plastiques - Films d'ensilage thermoplastiques et gaines pour utilisation en agriculture

02/2018

National Foreword

This European Standard EN 13207:2018 was adopted as Luxembourgish Standard ILNAS-EN 13207:2018.

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ILNAS-EN 13207:2018

EUROPEAN STANDARD EN 13207

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English Version

Plastics - Thermoplastic silage films and tubes for use in agriculture

Plastiques - Films d'ensilage thermoplastiques et gaines pour utilisation en agriculture

Kunststoffe - Thermoplastische Silofolien und -schläuche für den Einsatz in der Landwirtschaft

This European Standard was approved by CEN on 10 December 2017.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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European foreword

This document (EN 13207:2018) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

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 August 2018 and conflicting national standards shall be withdrawn at the latest by August 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13207:2001.

The following technical changes have been made in comparison to EN 13207:2001:

— the scope is extended to installation and removal conditions and the intended use for the applications is specified in extended way;

— Clause 4 Types and use, has been added;

— in Clause 5 Material, the barrier polymer, has been added;

— a new Clause 6 Durability, has been drafted on the basis of the old Clause 5 Duration of the silage film;

— the Clause for requirements, test methods, acceptance, storage and handling have been drafted in a new frame;

— the Clauses on instructions disposal of silage films and end-of-life, have been added.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the requirements related to dimensional, mechanical and optical characteristics of thermoplastic films and tubes used during the manufacture of silage and designed to last at least one year for protecting fodder.

It specifies a classification for the durability of silage films and the test methods referred to in this standard.

This European Standard is applicable to transparent, black, white or coloured (e.g. black/white) thermoplastic silage films based on polyethylene, ethylene copolymer, EVOH and polyamide.

These films are intended for covering bunker silos, silage tubes or silage clamps for preserving forage. They protect the forage and preserve it from rain and air. These films are not intended to cover bales piles (e.g. straw bales and hay bales).

Silage films obtained by sealing two or more films in machine direction are out of the scope of this document.

This European Standard also defines installation, use and removal conditions of silage films. It defines the conventional useful lifetime, as well as rules that allow evaluating the remaining use potential in the event of a failure before the normal end-of-use date.

NOTE These rules allow estimating the residual value of the films. These provisions only apply to the film itself and the damage it has undergone. Any other problem falls within the scope of professional practices and the general terms and conditions of sale.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 ISO 527-1, *Plastics - Determination of tensile properties - Part 1: General principles (ISO 527-1)*

EN ISO 527-3:1995, *Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets (ISO 527-3:1995)*

EN ISO 4892-2, *Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps (ISO 4892-2)*

EN ISO 7765-1, *Plastics film and sheeting - Determination of impact resistance by the free-falling dart method - Part 1: Staircase methods (ISO 7765-1)*

ISO 4592, *Plastics - Film and sheeting - Determination of length and width*

ISO 4593, *Plastics - Film and sheeting - Determination of thickness by mechanical scanning*

ISO 15105-2:2003, *Plastics - Film and sheeting - Determination of gas-transmission rate - Part 2: Equal-pressure method*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
width
overall width of the film when laid flat

Note 1 to entry: It is expressed in millimetres (mm).

3.2
nominal width
width of the film, as declared by the manufacturer/supplier

Note 1 to entry: It is expressed in millimetres (mm).

3.3
nominal thickness
thickness of a film, as declared by the manufacturer/supplier

Note 1 to entry: It is expressed in micrometres (μm).

3.4
roll length
largest dimension of a film corresponding to the length of the unwinded roll

Note 1 to entry: It is expressed in metres (m).

3.5
nominal length
length of a film roll or a sheet, as declared by the manufacturer/supplier

Note 1 to entry: It is expressed in metres (m).

3.6
nominal mass
mass of a roll or a sheet, as declared by the manufacturer/supplier

Note 1 to entry: It is expressed in kilograms (kg).

3.7
longitudinal direction
MD
direction parallel to the roll length, corresponding to the extrusion direction

3.8
transverse direction
TD
direction parallel to the width (at right angle to the length)

3.9
conventional expected lifetime
expected lifetime defined by agreement between the manufacturer/supplier and the customer or, by default, minimum twelve months

Note 1 to entry: It is expressed in years or months.

3.10
radiant exposure
H
time integral of irradiance

Note 1 to entry: It is measured in joules per square metre ($J \cdot m^{-2}$).

[SOURCE: ISO 9370:2017, 3.27[1]]

4 Types and use

The different types of silage films are given in Table 1.

Table 1 — Types of films

Type	Characteristics
SA	Film or tube with a nominal thickness ≥ 90 µm suitable for food contact
SB	Film or tube with a nominal thickness ≥ 100 µm not suitable for food contact
SC	Film with a nominal thickness ≥ 35 µm used as lining in combination addition to a type A or B silage film
SD	Film or tube with a thickness ≥ 90 µm having at least one coextruded layer made from a gas barrier polymer (e.g. EVOH or polyamide)
SE	Film with a nominal thickness ≥ 35 µm having at least one coextruded layer made from a gas barrier polymer used as lining in combination addition to a type A or B silage film

5 Material

Silage films in accordance with this standard are usually manufactured from:

— low density polyethylene (PE-LD), linear low density polyethylene (PE-LLD) and their blends;

— ethylene vinyl acetate copolymers (EVAC) and their blends with PE-LD or PE-LLD;

— ethylene butyl acrylate copolymers (EBAK) and their blends with PE-LD or PE-LLD;

— gas barrier polymer, e.g. EVOH or polyamide.