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Plastics - Biodegradable mulch films for use in agriculture and horticulture - Requirements and test methods

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
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English Version

Plastics - Biodegradable mulch films for use in agriculture and horticulture - Requirements and test methods

Plastiques - Films de paillage biodégradables
thermoplastiques pour utilisation en agriculture et
horticulture - Exigences et méthodes d'essai

Kunststoffe - Biologisch abbaubare Mulchfolien für den
Einsatz in Landwirtschaft und Gartenbau -
Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 13 November 2017.

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European foreword

This document (EN 17033:2018) has been prepared by Technical Committee CEN/TC249 "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of an identical text or by endorsement, at the latest by July 2018, and conflicting national standards shall be withdrawn at the latest by July 2018.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.

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1 Scope

This document specifies the requirements for biodegradable films, manufactured from thermoplastic materials, to be used for mulch applications in agriculture and horticulture.

This document is applicable to films intended to biodegrade in soil without creating any adverse impact on the environment.

It also specifies the test methods to assess these requirements as well as requirements for the packaging, identification and marking of films.

For information, it defines a classification of biodegradable mulch films according to their service life on soil and gives a good practice guide for the use of the films.

NOTE Films intended to be removed after use and not incorporated in the soil are not in the scope of this standard. They are in the scope of EN 13655 [1].

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 472, *Plastics - Vocabulary (ISO 472)*

EN ISO 527-1, *Plastics - Determination of tensile properties - Part 1: General principles (ISO 527-1)*

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

EN ISO 7765-1:2004, *Plastics film and sheeting - Determination of impact resistance by the free-falling dart method - Part 1: Staircase methods (ISO 7765-1:1988)*

EN ISO 11268-1, *Soil quality - Effects of pollutants on earthworms - Part 1: Determination of acute toxicity to Eisenia fetida/Eisenia andrei (ISO 11268-1)*

EN ISO 11268-2, *Soil quality - Effects of pollutants on earthworms - Part 2: Determination of effects on reproduction of Eisenia fetida/Eisenia andrei (ISO 11268-2)*

EN ISO 11274, *Soil quality - Determination of the water-retention characteristic - Laboratory methods (ISO 11274)*

EN ISO 12846, *Water quality - Determination of mercury - Method using atomic absorption spectrometry (AAS) with and without enrichment (ISO 12846)*

EN ISO 17294-2, *Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (ISO 17294-2)*

EN ISO 17556:2012, *Plastics - Determination of the ultimate aerobic biodegradability of plastic materials in soil by measuring the oxygen demand in a respirometer or the amount of carbon dioxide evolved (ISO 17556:2012)*

ISO 4591, *Plastics — Film and sheeting — Determination of average thickness of a sample, and average thickness and yield of a roll, by gravimetric techniques (gravimetric thickness)*

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

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

ISO 10390, *Soil quality — Determination of pH*

ISO 15685, *Soil quality — Determination of potential nitrification and inhibition of nitrification — Rapid test by ammonium oxidation*

OECD 208, *OECD Guidelines for the Testing of Chemicals, Section 2, Effects on Biotic Systems — Test No. 208: Terrestrial Plant Test: Seedling Emergence and Seedling Growth Test*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 472 and the following 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 Definitions related to films

3.1.1

mulch film

film made from thermoplastic material intended to be used in agriculture and horticulture to cover the ground in order to improve growing conditions of crops and depending on the colour to control weeds

Note 1 to entry: It is assumed that a transparent mulch film does not allow to control weeds.

3.1.2

material

homogenous preparation of biodegradable polymer and additives, as necessary, such as carbon black and colour pigments

Note 1 to entry: Additives are usually introduced under the form of masterbatches using as carrier resin a biodegradable polymer.

3.1.3

masterbatch

well-dispersed mixture of a polymer and high percentages of one or more components (colorants and/or other additives) in known proportions for use in blending in appropriate amounts with the basic polymer in the preparation of a compound

[SOURCE: EN ISO 472:2013, definition 2.574]

3.1.4

width

overall width of a film when lying flat

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