

STN	Plasty Mulčovacie fólie z termoplastov, zhodnotiteľné po použití, na použitie v poľnohospodárstve a v záhradníctve	STN EN 13655 64 6019
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Plastics - Thermoplastic mulch films recoverable after use, for use in agriculture and horticulture

Táto norma obsahuje anglickú verziu európskej normy.

This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/25

Obsahuje: EN 13655:2025

Oznámením tejto normy sa ruší

STN EN 13655 (64 6019) zo septembra 2018

141341

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2025

Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13655

August 2025

ICS 83.140.10

Supersedes EN 13655:2018

English Version

**Plastics - Thermoplastic mulch films recoverable after use,
for use in agriculture and horticulture**

Plastiques - Films de paillage thermoplastiques
récupérables après usage, pour utilisation en
agriculture et horticulture

Kunststoffe - Nach Gebrauch rückbaubare
thermoplastische Mulchfolien für den Einsatz in
Landwirtschaft und im Gartenbau

This European Standard was approved by CEN on 16 June 2025.

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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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EN 13655:2025 (E)**European foreword**

This document (EN 13655:2025) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by SIS.

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 February 2026, and conflicting national standards shall be withdrawn at the latest by February 2026.

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 13655:2018.

EN 13655:2025 includes the following significant technical changes with respect to EN 13655:2018:

- Clause 5 on materials has been extended;
- Clause 10, Clause 11 and Clause 12 on designation, marking and instructions for storage, installation and use of mulch films, respectively, have been modified;
- Clause 13 on the design-for-recycling of end of life of mulch films has been added;
- Clause 14 on removal and collection instructions of used mulch films has been modified, referring to EN 18109¹ for additional information;
- the informative Annex E has been modified, and previous Clauses E.3 and E.4 have been transferred to EN 18109;
- Details on functions and factors of degradability of mulch films have been transferred to Clause 15 in this document;
- the previous Annex E on the guidance for conditions for installation, use and removal of mulch films has been transferred to EN 18109.

This document (EN 13655) has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

¹ Under preparation

1 Scope

This document specifies the requirements related to dimensional, mechanical, optical and thermal characteristics of thermoplastic films for mulching applications in agriculture and horticulture.

These mulch films are intended to be removed after use and not incorporated in the soil.

These mulch films are not intended to be used for soil disinfection by fumigation. Films for soil disinfection are in the scope of EN 17098-1 [1] and EN 17098-2 [2].

The biodegradable mulch films intended to be incorporated in the soil after used are also not in the scope of this document. They are in the scope of EN 17033 [3].

This document specifies a classification for durability of mulching films and the test methods referred to in this document.

This document is applicable to thermoplastic mulch films, used for agriculture and horticulture in Europe, based on polyethylene and/or ethylene copolymers, of the following types:

- transparent films;
- black films;
- reflective films (e.g. white films, black/white films and black/silver films);
- films of other colour(s) for weed control (e.g. green, brown).

This document defines the criteria for design for recycling of mulch films and refer to EN 18109 for the product lifecycle, including installation, use, removal and collection for end of life for management of the product after its usage.

NOTE Mulch films can be highly soiled by organic and mineral residues at the end of their use life: the observed rates (or levels) of soilage of mulch films can vary from 70 % to 90 %, therefore the film thickness is a key factor on the rate of soilage, the thinnest films (e.g. less than 20 micron) will be the mostly soiled, difficult, expensive to remove, recover and recycle.

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, *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 4892-2:2013, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2013)*

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*

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

ISO 9845-1, *Solar energy — Reference solar spectral irradiance at the ground at different receiving conditions — Part 1: Direct normal and hemispherical solar irradiance for air mass 1,5*

ISO 22095, *Chain of custody — General terminology and models*

ASTM D 1003-13, *Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN