
Smernice za načrtovanje za recikliranje izdelkov in delov iz stirenskih polimerov in poliolefinov v električni in elektronski opremi s poudarkom na ABS, PP in PS

Design for recycling guidelines for styerincs and polyolefins products and parts in electrical and electronic equipment, with focus on ABS, PP and PS

Richtlinien für recyclinggerechtes Design für Styrol- und Polyolefinprodukte und -teile in elektrischen und elektronischen Geräten mit Schwerpunkt auf ABS, PP und PS

Sample Document

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31.220.01	Elektromehanske komponente (sestavni deli, gradniki) na splošno	Electromechanical components in general

SIST-TS CLC/TS 50752:2026**en**

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**Design for recycling guidelines for styrenics and polyolefins
products and parts in electrical and electronic equipment, with
focus on ABS, PP and PS**

To be completed

Richtlinien für recyclinggerechtes Design für Styrol- und
Polyolefinprodukte und -teile in elektrischen und
elektronischen Geräten mit Schwerpunkt auf ABS, PP und
PS

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European Committee for Electrotechnical Standardization
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European foreword

This document (CLC/TS 50752:2026) has been prepared by CLC/TC 111X "Environment".

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

This document has been prepared under a standardization request addressed to CENELEC 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 committee. A complete listing of these bodies can be found on the CENELEC website.

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Introduction

This document covers the Acrylonitrile-Butadiene-Styrene (ABS), Polypropylene (PP) and Polystyrene (PS) based components and parts, used in electrical and electronic equipment (EEE) falling under the scope of the European Directive on Waste of Electrical and Electronic Equipment (WEEE Directive) (2012/19/EU) [6].

This document aims to support the European Strategy for Plastics in a Circular Economy's objective to improve the economics and quality of plastics recycles. In particular, to improve design-for-recycling of plastic products as well as the quality of inputs to the recycling industry and create viable markets for recycled plastics.

Acknowledging this objective and based on the Standardization Request M/584 of the European Commission, the CENELEC/TC 111X has decided to develop this document to define the design-for-recycling principles that can promote plastics recycling of electrical and electronic equipment.

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1 Scope

This document provides guidance on the best practices and technical solutions that manufacturers of electrical and electronic equipment (EEE) can consider during the design phase, to enable consistent and effective recycling of styrenics and polyolefins plastics composing the equipment, during the Waste of Electrical and Electronic Equipment (WEEE) management.

NOTE This document is intended to cover electrical and electronic equipment as listed in Annex I and Annex III of Directive 2012/19/EU [6].

This document deals specifically with the following types of styrenics and polyolefins, used for parts and components of EEE:

- Acrylonitrile-Butadiene-Styrene (ABS);
- Polystyrene (PS);
- Polypropylene (PP).

NOTE The principles laid down in this document can be potentially applied to thermoplastics other than ABS, PP and PS.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

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

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

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

3.1 Terms and definitions

3.1.1

acrylonitrile-butadiene-styrene

ABS

terpolymer made by polymerizing styrene and acrylonitrile in the presence of polybutadiene rubber

[SOURCE: EN ISO 1043-1:2011 Clause 4.1 – Table 1]

3.1.2

additive

substance which is used to process or to modify end use of plastics

Note 1 to entry: Substances are normally included in carrier matrix.

[SOURCE: EN 17615:2022, 3.4, modified - Note 2, 3 and 4 to entry have been removed]

3.1.3

commingled plastic

mixed plastic

mixture of materials or products consisting of different types of plastics

[SOURCE: EN 17615:2022, 3.58]

3.1.4**compound**

<plastics> formulation in the form of granulates, pellets, powder or flakes, prepared for processing into a finished product, consisting of a polymer and all the necessary additives, such as stabilizers, plasticizers, fillers, pigments, etc., that are required for the intended application

[SOURCE: EN ISO 472:2013, 2.222]

3.1.5**dismantling**

process whereby a product is taken apart in such a way that some parts can be reused, although the product (and the parts not intended to be reused) can no longer be reassembled and made operational

Note 1 to entry: "Parts" means any element of a product, as defined by the product's type designation [See Regulation (EU) 2018/1139, Article 3 Definition (4)].

[SOURCE: EN 17615:2022, 3.90]

3.1.6**plastic**

material which contains as an essential ingredient a polymer and which at some stage in its processing into finished products can be shaped by flow

Note 1 to entry: Elastomeric materials, which also are shaped by flow, are not considered plastics.

Note 2 to entry: Additives or other substances may have been added and which can function as a main structural component of final product.

[SOURCE: EN 17615:2022, 3.184, modified - removed references to other terms]

3.1.7**polymer**

large molecule, synthetic or natural, characterized by the sequence of one or more types of monomer units which are covalently bound to each other

[SOURCE: EN 17615:2022, 3.190]

3.1.8**polymer blend****alloy**

two or more *polymers* (3.1.4) blended to create an alloy

[SOURCE: EN ISO 11469:2016, 5.1.3]

3.1.9**polypropylene****PP**

plastic based on a homopolymer of propene or a copolymer of propene and other α -olefins, or a mixture of both, in which propene is the predominant monomer

[SOURCE: EN ISO 472:2013, 2.555]

3.1.10**polystyrene****PS**

plastic based homopolymer of styrene or a copolymer of styrene and other monomers, the styrene being the predominant monomer