BS EN 18064-2:2025

BSI Standards Publication

Plastics — Quality recommendations and basis for specifications for application of plastic recyclates in products

Part 2: Polyethylene (PE)

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National foreword

This British Standard is the UK implementation of EN 18064-2:2025.

The UK participation in its preparation was entrusted to Technical Committee PRI/89, Plastics - Environmental Aspects.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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English Version

Plastics - Quality recommendations and basis for specifications for application of plastic recyclates in products - Part 2: Polyethylene (PE)

Plastiques - Recommandations qualité et base de spécification pour l'application des recyclats de plastiques dans les produits - Partie 2 : Polyéthylène (PE)

Kunststoffe - Qualitätsempfehlungen und Grundlagen für Spezifikationen für die Verwendung von Kunststoffrezyklaten in Produkten - Teil 2: Polyethylen (PE)

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

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Full document details: BS EN 18064-2:2025

Contents

Page

European foreword 3
Introduction 5
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviations 7
3.1 Terms and definitions 7
3.2 Abbreviations 8
4 Categorization of polyethylene (PE) applications and requirements 8
5 Selection of properties for polyethylene (PE) recyclates 8
6 Typical range for characteristics of product families 8
7 Designation of polyethylene (PE) recyclates 8
Annex A (informative) Designatory properties polyethylene recyclates 9
Annex B (informative) Typical values for product families 16
Bibliography 26

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Document Sharing Hub
Full document details: BS EN 18064-2:2025

European foreword

This document (EN 18064-2:2025) 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of an identical text or by endorsement, at the latest by January 2026, and conflicting national standards shall be withdrawn at the latest by January 2026.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 is part of CEN publications on plastics recycling, listed as follows:

— EN 15342, *Plastics — Recycled plastics — Characterization of polystyrene (PS) recyclates*

— EN 15343, *Plastics — Recycled Plastics — Plastics recycling traceability and assessment of conformity and recycled content*

— EN 15344, *Plastics — Recycled plastics — Characterization of Polyethylene (PE) recyclates*

— EN 15345, *Plastics — Recycled plastics — Characterization of Polypropylene (PP) recyclates*

— EN 15346, *Plastics — Recycled plastics — Characterization of poly(vinyl chloride) (PVC) recyclates*

— EN 15347 (all parts), *Plastics — Sorted plastics wastes*

— EN 15348, *Plastics — Recycled plastics — Characterization of poly(ethylene terephthalate) (PET) recyclates*

— EN 18064 (all parts), *Plastics —Quality recommendations and basis for specifications for application of plastic recyclates in products*

— EN 18065, *Plastics —Recycled plastics — Classification of recycled plastics based on Data Quality Levels for use and (digital) trading*

— EN 18067, *Plastics — Recycled plastics — Characterization of Acrylonitrile-Butadiene-Styrene (ABS) recyclates*

— CEN/TR 15353, *Plastics — Recycled plastics — Guidelines for the development of standards for recycled plastics*

— CEN/TR 18160, *Plastics recycling — Classification of plastic recyclates as postconsumer recyclates (PCR) and postindustrial recyclates (PIR)*

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This document is part of the EN 18064 series, currently consisting of all parts as listed below. This series of standards consists of a general part 1, and material specific parts.

EN 18064, *Plastics — Quality recommendations and basis for specifications for application of plastic recyclates in products*, is currently composed with the following parts:

— *Part 1: General aspects*

— *Part 2: Polyethylene (PE)*

— *Part 3: Polypropylene (PP)*

— *Part 4: Poly(ethylene terephthalate) (PET)*

— *Part 5: Poly(vinyl chloride) (PVC)*

— *Part 6: Polystyrene (PS)*

— *Part 7: Acrylonitrile-butadiene-styrene (ABS)*

NOTE Part 6 for PS also includes EPS and XPS.

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

This part is supported by other standards on test methods to which references are made throughout this document.

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.

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Full document details: BS EN 18064-2:2025

Introduction

This standards series is answering to the European Standardization Request M/584[1]. European standardization deliverable(s) on quality assessment of plastic recyclates for use in products are expected for: recycled polyethylene (rPE), recycled polypropylene (rPP), recycled polyethylene terephthalate (rPET), recycled polyvinyl chloride (rPVC), recycled polystyrene (rPS) (including recycled expanded polystyrene (rEPS) and recycled extruded polystyrene (rXPS)), recycled acrylonitrile-butadiene-styrene (rABS).

How to use this standards series?

The characteristics are generic and cover the properties the converter needs at the entry of the converting operation. The intention is that this standard series supports the establishment of first contact with possible suppliers that could deliver this recyclate with or without compounding. The designation system is intended to make a callout for the desired recyclate. After first contact, the specifications will be agreed between recycler and converter. This is not part of this standards series.

This series is not intended for use as a specification system, and hence cannot be used as a means to guaranty a certain recyclate quality to a buyer of plastic recyclates. Characteristics are specified in the Annex B of the polymer specific parts of this series, which provides typical values or a range as applicable.

The EN 18064 series can be used by:

— producers of specific products for material selection of recyclates to be used in their products;

— recyclers to produce recyclates that are suitable for certain product families/production technologies.

The EN 18064 series covers:

Part 1: description of purpose of this series of standards and designation system

Parts 2-7: Polymer specific parts, with two informative annexes as follows:

— In the Annexes A, designatory properties are given;

— In the Annexes B, product families are specified in combination with the (most) relevant converting technologies. In these Annexes B, typical values are provided for the characteristics.

The purpose of the demand driven approach is to give customers guidance to choose the recyclates that will be adequate to use in the product of choice that is going to be manufactured.

[1] M/584 COMMISSION IMPLEMENTING DECISION of 1.8.2022 on a standardisation request to the European Committee for Standardisation and the European Committee for Electrotechnical Standardisation as regards plastics recycling and recycled plastics in support of the European Strategy for Plastics in a Circular Economy

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Full document details: BS EN 18064-2:2025

EN 18064 series may be used in conjunction with:

— EN 18065, *Plastics — Recycled plastics — Classification of recycled plastics based on Data Quality Levels for use and (digital) trading*.

These standards (EN 18064, Part 1 through Part 7) are aligned with ISO/TC 61 material standards:

— EN ISO 10350-1 identifies specific test procedures for the acquisition and presentation of comparable data for certain basic properties of plastics;

— EN ISO polymer specific standards for the preparation of test specimens and determination of properties (see normative references of the polymer specific parts EN 18064, Part 2 through 7).

The EN ISO material standards for polymers provides the designation system (see Part 1 of the EN ISO material standards-moulding and extrusion materials). For recycling, appropriate additional test methods should be taken up from the relevant EN or ISO material standard.

NOTE 1 The relevant EN standards could be e.g. EN 15342, EN 15344, EN 15345, EN 15346, EN 15348 and EN 18067.

NOTE 2 The basis of the designation system is described in the ISO/IEC Directives Part 2 (2021), C.3"Designation system." This designation system was designed for virgin polymers. The designation system described in this document is applicable for recyclates is based on that system.

NOTE 3 EC regulations and Directives can also apply.

NOTE 4 Regarding packaging in food contact, see also European legislation e.g. EC 2023/2006 (GMP), 1935/2004, 10/2011 and 2022/1616 as amended.

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Full document details: BS EN 18064-2:2025

1 Scope

This document provides characteristics and typical values for polyethylene (PE) recyclates intended for groups of defined applications (the product families).

The characteristics and typical values for the different product families are derived from the performance requirements of the products belonging to that family, including requirements for product manufacturing processes where applicable.

This document applies to plastic recyclates intended to be used for the manufacturing of (intermediate) products.

This document is intended to be used in conjunction with part 1 of this standard series, which describes the designation system for plastic recyclates. The designation system allows comparison between recycled and virgin material at the level of the polymer's defined designatory properties.

NOTE 1 Examples of designations of plastic recyclates are given in Annex A.

NOTE 2 The selection of properties for a product family is based on EN ISO 10350-1, extended with specific properties related to plastic recyclates.

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.

CEN/TR 15353, *Plastics - Recycled plastics - Guidelines for the development of standards for recycled plastics*

EN 15344:2025, *Plastics - Recycled plastics - Characterization of Polyethylene (PE) recyclates*

EN 17615, *Plastics - Environmental Aspects - Vocabulary*

EN 18064-1, *Plastics - Quality recommendations and basis for specifications for application of plastic recyclates in products - Part 1: General aspects*

EN ISO 472, *Plastics - Vocabulary (ISO 472)*

EN ISO 1043-1, *Plastics - Symbols and abbreviated terms - Part 1: Basic polymers and their special characteristics (ISO 1043-1)*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 472, EN 17615 and CEN/TR 15353, and the following 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/

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Full document details: BS EN 18064-2:2025

3.1.1
typical value
indicative value intended for first contact, e. g. between convertor and recycler

Note 1 to entry: Final values to be agreed e.g. between convertor and recycler.

3.2 Abbreviations

For the purposes of this document, abbreviated terms related to recyclates given in EN ISO 1043-1, EN 18064-1 and EN 15344 apply.

4 Categorization of polyethylene (PE) applications and requirements

The product families in combination with the relevant converting technologies are given in the dedicated annexes. In here description is given of the intended use(s) of these product families (for example impact resistant application), and for which products can these be used (containers, sheet materials, …).

5 Selection of properties for polyethylene (PE) recyclates

The mandatory characteristics are given in EN 15344.

Characteristics per product family in combination with the relevant production technologies are given in Annex B (Table B.1 for HDPE and Table B.2 for LDPE and LLDPE).

NOTE 1 Next to mandatory characteristics from EN 15344, this can include the optional characteristics given in EN 15344, EN ISO 17855-2 and EN ISO 10350-1.

NOTE 2 High density polyethylene (HDPE), low density polyethylene (LDPE), linear low density polyethylene (LLDPE),

6 Typical range for characteristics of product families

The typical characteristics are specified in Annex B, Tables B.1 and B.2, which provide typical values (min./max. values or a range as applicable) for the product family specific characteristics in combination with the relevant production technologies. This information is intended to be used for material selection by buyers of recyclate.

NOTE This part is not intended for use as a specification system, and hence cannot be used as a means to guarantee a certain recyclate quality to a buyer of plastic recyclate.

7 Designation of polyethylene (PE) recyclates

The principle for this designation system is given in EN 18064-1, ISO/IEC directive parts 2, 2021 and Annex A.

This designation provides a code describing how to declare characteristics and related typical values for recyclate materials, intended to be used for a defined category group (product family), enabling effective communication between supplier and purchaser of recyclate materials, based on the intended use (product family in combination with the relevant production technologies).

Annex A provides designatory properties of polyethylene recyclates given in EN ISO 17855-1.

Under A.2.7 examples of designation of a polyethylene thermoplastic material are given.

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