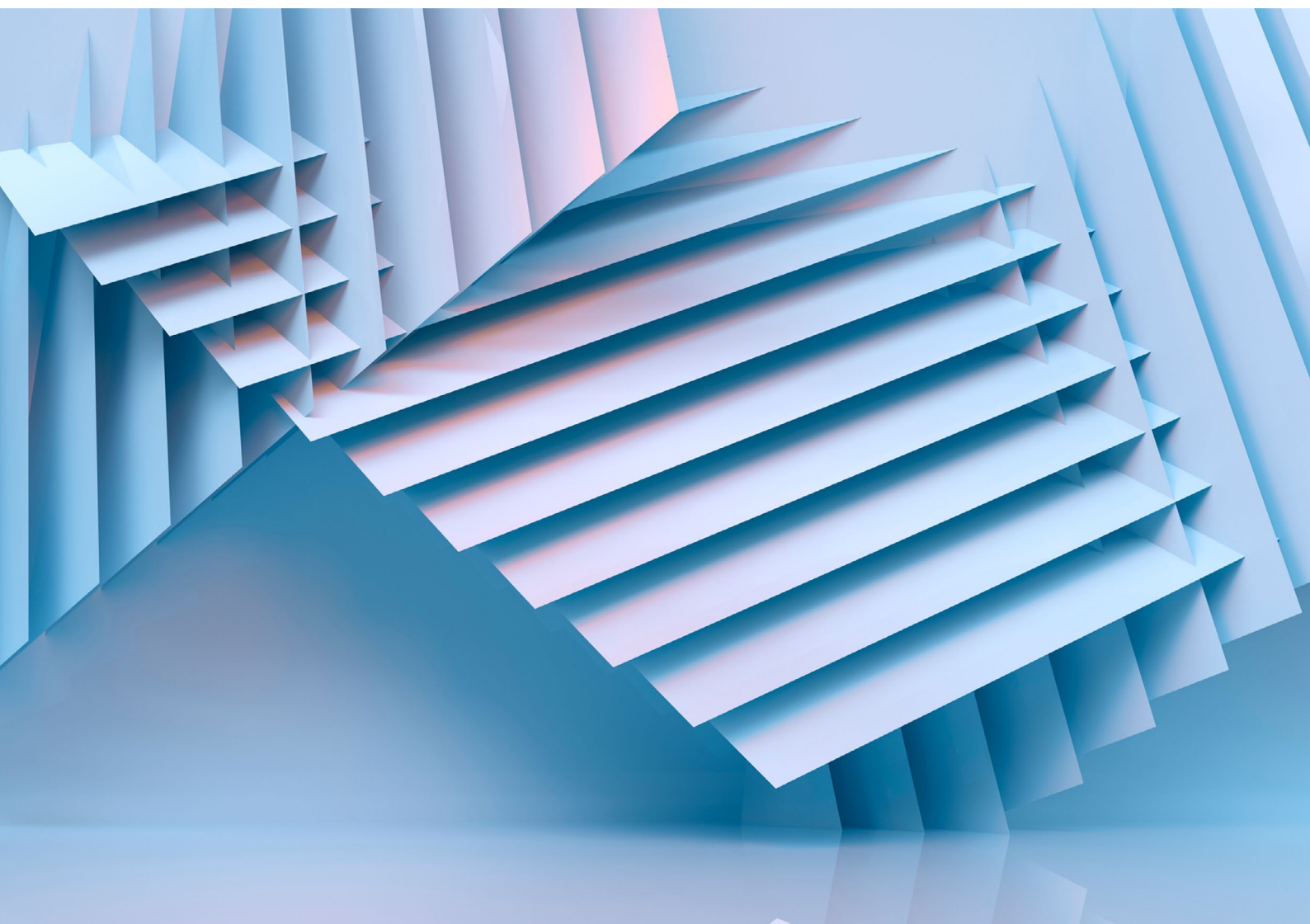


Plastic packaging – Determination of recycled content within polyethylene terephthalate (PET) virgin material and recyclate blended packaging materials produced from mechanical recycling methods – Specification and test methods

March 2022 Version 1



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Foreword

This BSI Flex was sponsored by SPRCOE Ltd. Its development was facilitated by BSI Standards Limited and it was released under licence from The British Standards Institution. It came into effect on 26th January 2022.

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Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

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0 Introduction

This standard provides a simple means of assessing the proportion of a sample that is recycled. It does not and cannot replace supply chain auditing, rather it offers screening methods to test whether the properties of a sample are consistent with its claimed level of recycle.

One application of this standard is to allow checks to determine whether liability to *The Plastic Packaging Tax (Descriptions of Products) Regulations 2021* might apply. This legislation mandates that a tax is levied where there is less than 30% of recycled content in plastic packaging. A method is therefore included which makes a probability-based assessment on whether the recycled content is more than or less than 30%.

1 Scope

This BSI Flex specifies requirements for determining recycled content that has been produced through mechanical recycling methods from plastic waste streams. This recycled content is contained within PET packaging products.

While this standard covers recycle polymers that have been used commercially and have been returned for re-use through waste collection, it does not cover regrind that material used during processing and recycled internally within a production facility for blending with virgin polymers. Where the standard is applied to packaging products, it covers rigid forms of packaging which includes translucent or transparent packaging.

In addition to plastic packaging products, the standard also specifies requirements for determining the recycled content within PET pellets created from waste streams for use as a raw material from which plastic packaging will be created.

This standard covers the criteria and testing for the levels of recycled content present in the applicable plastic pellets or the applicable packaging products, and reporting requirements.

The test methods covered in this standard indicate the presence and levels of recycled PET (rPET) present in PET packaging products through the following test methods:

- Thermal (DSC/TGA);
- Colorimetry; and
- UV-visible spectrometry.

The standard does not cover packaging materials produced from chemical recycling methods, nor does it cover coloured or opaque PET products or any other polymers. Further, the standard does not provide methods to determine the quality of the packaging, and/or its suitability for a specific purpose, such as containing food or drink.

The standard is for use by plastic packaging pellet and packaging manufacturers, importers and those wishing to determine the recycled content of PET plastic packaging. The standard might also be of interest to business customers of producers and importers of plastic packaging, and those with plastic packaging forming part of their supply chain. The standard might be beneficial to policy setters, consumers of goods containing plastic packaging and those with an interest in sustainability or environmental concerns.

2 Normative references

The following referenced documents are referred to in the text in such a way that some or all of their content constitutes provisions 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.

Standards publications

BS EN ISO 11357-1, *Plastics – Differential scanning calorimetry (DSC) – Part 1: General principles*

BS EN ISO 11357-3, *Plastics – Differential scanning calorimetry (DSC) – Part 3: Determination of temperature and enthalpy of melting and crystallization*

ISO/CIE 11664-1, *Colorimetry – Part 1: CIE standard colorimetric observers*

ISO 11664-2, *Colorimetry – Part 2: CIE standard illuminants*

ISO/CIE 11664-3, *Colorimetry – Part 3: CIE tristimulus values*

ISO/CIE 11664-4, *Colorimetry – Part 4: CIE 1976 L*a*b* colour space*