

INTEGRATED DEPOSIT AND REFUND SYSTEM (SDR)

TECHNICAL SPECIFICATIONS

PLASTIC BOTTLES



This document sets out the **technical specifications applicable to plastic beverage bottles falling within the scope of the Deposit and Refund System (SDR)**.

Pursuant to Article 30-L of Decree-Law 152-D/2017 of 11 December, as currently worded, the technical specifications of the SDR are defined by the Portuguese Environment Agency, I.P. (APA, I.P.) and the Directorate-General for the Economy (DGE), upon proposal by the SDR management bodies, and must ensure the compatibility of such packaging with the aforementioned system and the proper channelling of waste from such packaging for recycling.

Under the terms of the licence granted for the management of an integrated deposit and refund system, the technical specifications applicable to beverage containers covered by the system, including any updates and adaptations to technical progress, are published on the websites of APA, I.P. and the DGE, as well as on the Licensee's website.

SDR PORTUGAL



SDR TECHNICAL SPECIFICATIONS

- PLASTIC BOTTLES

ACCEPTANCE CRITERIA

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Introduction

The specifications set out below apply exclusively to beverage bottles placed on the domestic market whose main material (bottle body) is PLASTIC.

The implementation of the SDR must comply with the framework established by Regulation (EU) 2025/40 of 19 December 2024 on packaging and packaging waste, applicable from 12 August 2026, in particular with regard to the recyclability of packaging and the harmonised standards to be defined under this Regulation.

Notwithstanding the need for revision in line with future harmonised standards, the SDR model prioritises high-quality recycling with a view to producing recycled material for use in new beverage bottles. The material of choice for use in beverage packaging covered by the SDR should be PET¹, as it is currently the only polymer compatible with *bottle-to-bottle* recycling processes across multiple and successive recycling cycles. For this reason, the recyclability criteria aim to ensure the maximisation of the flow of materials compatible with this overarching objective of the SDR model, as well as to prevent the presence of contaminants that would hinder this objective.

However, other types of plastic used in beverage bottles with specific characteristics will be accepted. Packagers wishing to place beverages on the market in 'Other Plastics' packaging must submit a request for prior assessment by SDR Portugal to verify their compatibility with the parameters of the automatic collection points.

For a better understanding of this document, we recommend consulting the “[SDR Glossary](#)”, available at [SDRPortugal.pt](#), which contains definitions of technical terms, as well as abbreviations and acronyms used throughout the text.

1 Bottle Shape



Ideally, to ensure correct acceptance at reverse vending machines (RVMs), bottles should be cylindrical and symmetrical in shape.

The shape of the bottle must allow it to remain balanced and stable when placed on a horizontal surface. In the case of bottles that wobble or tilt, with the base or top raised, tests must be carried out to confirm their suitability for use in automatic collection and counting equipment (in particular reverse vending machines and automatic counting machines).

Rectangular-shaped bottles may be accepted provided that tests on reverse vending machines (RVMs) demonstrate that they do not pose any acceptance issues.

¹ Polyethylene terephthalate.

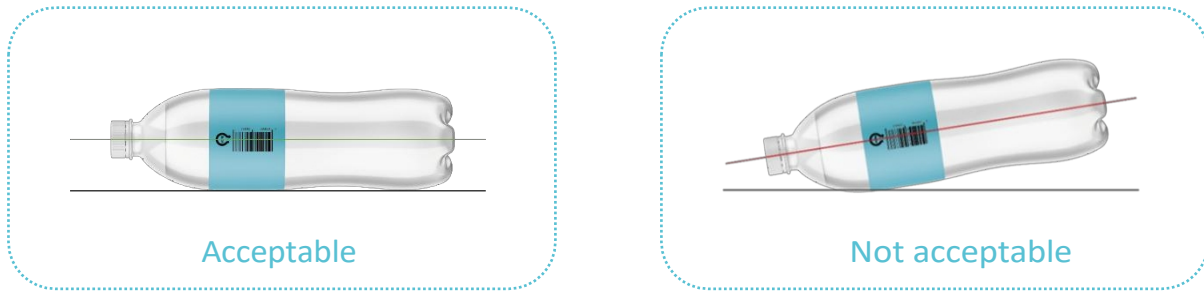


Figure 1 – Examples of bottle behaviour in a horizontal position

2 Dimensions



Plastic bottles must have the recommended dimensions within the ranges shown in the table below.

Table 1 – Recommended dimensions for beverage bottles compatible with reverse vending machines

Dimensions	Minimum	Maximum
Outer diameter	50 mm	120 mm
Bottle height with cap	85 mm	360 mm
Height to diameter ratio	Height > Diameter	

Plastic bottles smaller than the recommended minimum dimensions may also be accepted by automatic collection and counting equipment (namely reverse vending machines and automatic counting machines).

Any exclusion of such packaging from the SDR on the grounds of technical unfeasibility must be demonstrated and may only be considered for packaging with a capacity of less than 0.1 L, provided that such non-feasibility remains duly demonstrated, as provided for in the last paragraph of Article 50(4) of Regulation (EU) 2025/40 of 19 December 2024 on packaging and packaging waste.



3 Materials

In line with the principles of the circular economy, packers must ensure that the packaging materials used are compatible with high-quality recycling².

Recyclability requirements are defined in accordance with the technological solutions available on the domestic market (preferably) and the EU market, taking into account the need to ensure that packaging accepted into the SDR is free from materials that hinder recycling and/or compromise the quality of the recycled material produced; these requirements are subject to periodic review, depending on changes in the system's technical conditions and the available recycling solutions.

The recyclability criteria set out in *the guidelines* published by the EPBP (*European PET Bottle Platform*)³ and by Recyclclass⁴ are adopted, without prejudice to the need for revision based on future harmonised standards for the recyclability of packaging materials issued by the European Commission.

The following tables set out the recyclability criteria for PET bottles and for bottles made of other plastics.

Packaging that fully complies with the recommendations set out in the green column will be classified as **“Accepted”**.





Packaging that displays one or more characteristics listed in the yellow and red columns will be classified as **“Accepted with a penalty”** and **“Accepted with a more severe penalty”**, respectively, and will be subject to a differentiated financial contribution in accordance with the financial contribution calculation model, approved by the Directorate-General for the Economy (DGE), which should reflect the environmental impact of the materials and the loss of value of the recycled material obtained.

² In accordance with the concept of “high-quality recycling” established in Regulation (EU) 2025/40 on Packaging and Packaging Waste

³ <https://www.epbp.org/design-guidelines/products>

⁴ <https://recyclclass.eu/recyclability/design-for-recycling-guidelines/>

Table 2 - Recyclability criteria for PET bottles

	 Accept	 Accept with penalty	 Accept with a more severe penalty
Body material	PET (polyethylene terephthalate), a polymer corresponding to  symbol.	---	Not eligible under the system's current technical conditions: PLA, PVC, PS, PETG, PC, PBT.
Colour	Colourless transparent or light blue transparent (PET CLB) ⁵ .	Transparent in other colours (coloured PET).	Black, opaque, metallic or fluorescent.
Barrier	PET CLB: <ul style="list-style-type: none"> single-layer with SiOx plasma coating. 	PET CLB: <ul style="list-style-type: none"> single-layer <ul style="list-style-type: none"> carbon plasma, mixture of PET and PTN. multilayer <ul style="list-style-type: none"> 3-layer structure up to 5% by weight of Nylon-MXD6, without bonding layers, multilayer PGA. 	PET CLB: <ul style="list-style-type: none"> single-layer <ul style="list-style-type: none"> blend of PET and Nylon-MXD6, EVOH. multilayer <ul style="list-style-type: none"> a 3-layer structure containing more than 5% by weight of Nylon-MXD6 or with bonding layers 5-layer structure of Nylon-MXD6.
	---	Coloured PET: <ul style="list-style-type: none"> single layer <ul style="list-style-type: none"> SiOx plasma, carbon plasma, mixture of PET and PTN mixture of PET and Nylon-MXD6 multilayer <ul style="list-style-type: none"> 3-layer structure up to 6% by weight of Nylon-MXD6, multilayer PGA, EVOH up to 3% EVOH without bonding layers. 	Coloured PET: <ul style="list-style-type: none"> multilayer <ul style="list-style-type: none"> more than 6% by weight of Nylon-MXD6, more than 3% by weight of EVOH or with bonding layers.
Additives	---	UV stabilisers, acetaldehyde blockers, optical brighteners, oxygen scavengers.	Additives not approved by EPBP and Recyclclass (bio/oxo/photodegradable compounds, nanocomposites, organosilicon compounds).
Caps	PE and PP, with a density of less than 1 g/cm ³ .	---	Metal or other material with a density greater than 1 g/cm ³ .
Seals / Valves	PE, PP, PE+EVA, TPO with a density of less than 1 g/cm ³ , TPS with a density of less than 0.95 g/cm ³ .	PET foam with a density of less than 0.95 g/cm ³ .	Materials with a density greater than 1 g/cm ³ (e.g. PVC, silicone, metal or other).
Labels / Sleeves	PE, PP, OPP, with a density of less than 1 g/cm ³ .	PET foam, EPS, lightly metallised with a density of less than 0.95 g/cm ³ , Paper without fibre loss.	Metal or other material with a density greater than 1 g/cm ³ (e.g. PVC, PS, PET, PETG, PLA), PETG foam. Any material occupying more than two-thirds of the bottle's surface area ⁶ .
Adhesives	Non-soluble or reactivable adhesives that allow labels/sleeves/tags to	Soluble adhesives that allow labels/sleeves/tags to be removed in washing solutions at 80°C.	Other adhesives (which do not allow labels/sleeves/tags to detach or which remain stuck to the

⁵ Limits for colour parameters: L*>89, b*>-3 – as established based on data from deposit schemes operating in Europe – Recyclclass (2024) – Technical Review 15 July (<https://recyclclass.eu/wp-content/uploads/2024/07/Technical-Review-Colour-definition-PET-bottles-VF.pdf>).

⁶ Until 31/12/2026, on an exceptional basis, this criterion will be included in the yellow list

	■ Accepted	☑ Accepted with penalty	☒ Accepted with a more severe penalty
	stand out in washing solutions at 60–80°C.		PET or those requiring temperatures above 80°C).
Inks	Inks that are not soluble in the washing solutions used in the recycling process and which are not subject to a proposed exclusion by the European Printing Inks Association (EuPIA) ⁽⁷⁾ , Direct or laser printing for batch and expiry date identification.	---	Inks soluble in the washing solutions used in the recycling process, inks subject to a proposed exclusion by EuPIA, inks containing hazardous compounds (e.g. carbon black), metals or PVC.
Other	Detachable components with a density of less than 1 g/cm ³ .	---	Materials with a density greater than 1 g/cm ³ , non-detachable components.

Table 3 - Recyclability criteria for Other Plastics bottles (under development)

	■ Accepted	☑ Accepted with penalty	☒ Accepted with a more severe penalty
	To be assessed in accordance with the polymer table corresponding to the main material (bottle body) available on the RecyClass website.	Assess according to the polymer table corresponding to the main material (bottle body) available on the RecyClass website.	To be assessed according to the polymer table corresponding to the main material (bottle body) available on the RecyClass website.

4 Compactability



Bottles containing materials with excessive resistance to compaction and which, according to the results of packaging acceptance tests, may be likely to cause disruptions to the operation of reverse vending machines, will be rejected.

5 Labels supplementary to the original labelling



In exceptional circumstances, packers may mark packaging with additional labels—made of paper or plastic—to supplement the original labelling, in accordance with the rules set out in the document attached to the Packer’s Manual, “SDR Technical Specifications – Marking”, available at SDRPortugal.pt. The labels are also subject to compliance with recyclability criteria, in particular regarding the density of the material and the adhesives and inks used.

⁷ <https://www.eupia.org/our-commitment/eupia-exclusion-policy-for-printing-inks-and-related-products/>