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# Design 4 Recycling

The better we sort, the more we recycle

Fostplus

# Introduction

- Goal: putting forward a recycling solution for 100% of the household packaging placed on the Belgian market.
- Take account of the current collection and sorting facilities in Belgium and the possibilities in terms of sustainable recycling channels available at the moment. This document will be adapted in the future when new collection, sorting or recycling opportunities come up.
- Fost Plus organizes Design for Recycling (D4R) workshops to advise on recyclability of packaging materials and the alternatives available on the market to make a packaging type or group recyclable. Furthermore, a packaging diagnostic in cooperation with Valipac can be organized on site.
- Questions concerning D4R can be sent via this form, where you will receive a tailor-made answer from one of our D4R experts.
- With the eco-modulation of Green Dot fees, packaging materials that are easy to collect, sort and recycle pay a lower Green Dot rate than packaging materials that are difficult to sort and recycle. Dissuasive fees apply to packaging that cannot be recycled or that interfere with the sorting and/or recycling process.

# Current collection, sorting and recycling streams in Belgium

The better we sort, the more we recycle

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# Belgium recycling streams

[Link to sorting instructions for consumers]

Paper/cardboard

Transp. colourless glass

Transp. coloured glass

PE films

Other plastic films

Steel

Aluminium

Drink cartons

Small aluminium

Residual


Transp. clear PET bottles

Transp. blue PET bottles

Transp. coloured PET bottles

Opaque PET bottles

Transp. PET trays

Opaque PET trays

Rigid PE

Rigid PP

Rigid PS

Mixed PO rigid

2021 2023 2025

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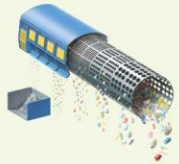
PLASTIC PACKAGING, METAL PACKAGING, DRINKS CARTONS

# THE SORTING PROCESS OF PMD

## 1 BAG OPENER

Rips open the blue bags and puts their contents on the convyor belt (the bags themselves will be sorted later on).

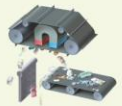


## 2 DRUM SIEVE

First sorting step, based on the size of materials. After this, small steel and aluminium packaging are sorted.

Small steel

(Will end up in the Steel stream)



MAGNET

Small aluminium

EDDY CURRENT SEPARATOR

## 3 WINDSIFTER

Sucks up films, plastic bags, the blue bags themselves, etc. from the sorting belt. With an optical separator, these films are then separated into PE films and other films.

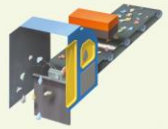
Other films

PE films

Steel

## 4 MAGNET

Attracts steel, so that tin cans, etc. are pulled out of the material stream.



## 5 OPTICAL SEPARATOR

Recognises drinks cartons through near-infrared technologie and takes them out of the material stream with pressed air.

Drinks cartons

Aluminium

## 6 EDDY CURRENT SEPARATOR

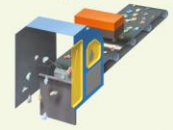
Generates a magnetic field that can separate aluminium drinking cans, spray cans, etc.

## 7 BALLISTIC SEPARATOR

Separates flat, lightweight materials from solid ones. That way, remaining films are sorted, that have not yet been separated by the wind sifter.

Other films

PE films



## 8 SERIES OF OPTICAL SEPARATORS

Seperate the last remaining streams: the 9 streams of rigid plastics. First by type of material, then by colour.

PET clear

PET blue

PET coloured



PET opaque

PET trays

PE

PP

PS

MPO

PE films

Other films

Steel

Drinks cartons

Aluminium

Small aluminium

Residue

## 9 MANUAL CHECK

Quality control per sorted stream, to extract the last impurities.

## 10 BALING PRESS

Presses the sorted materials into bales, ready for transport.

# D4R: General rules

# Give preference to mono materials

Avoid packaging composed of several layers of different, inseparable materials

Make the packaging recyclable

Give preference to single-material packaging (e.g. plastic only or cardboard only)


Improve the quality of the recycled material

Give preference to monomaterial packaging (e.g. MDOPE/LDPE, mono PP or mono APET)

# Avoid plastic packaging colored with carbon black

Carbon black pigments can be present in black or dark plastic packaging. They do not allow the packaging to be correctly sorted by Near Infrared (NIR) polymer detectors in Belgian sorting centers. Therefore, most of this packaging ends up in the bales of residue going to incineration.

**What are recyclable alternatives?**

- Choose non-coloured packaging (natural colour of the packaging).
- Avoid black or dark colours containing carbon black for packaging made of plastic, prefer NIR-detectable colors.
- If this is not possible, give preference to colours that cover as little of the packaging surface as possible.
- If carbon black is present only on an internal layer of a plastic packaging, it usually doesn't hinder NIR detection. In doubt, contact our experts via this form.
- Find a dedicated FAQ on dark plastic packaging containing carbon black on this page.

# Paper/cardboard

- For the moment minimum 85% fibre content and maximum one side covered with a liner (water accessibility needs to be guaranteed for recycling) **or** assessed as recyclable according to the 4evergreen protocol
- Packaging needs to be clean to be sorted with the paper & cardboard (sorting rules)

# Paper/cardboard combined with plastic

Pull tab with perforations

Separation plastic laminated film from cardboard (ex. 1)

If possible, foresee an option to separate the different layers

Separation plastic laminated film from cardboard (ex. 2)

On-pack communication

*Please note that in reality many consumers will not separate the different elements*

# Drinks cartons

- For drinks cartons, give preference to the simplest shapes with as few additional components as possible (smallest possible plastic lids and bodies, for example).

# Biodegradable or compostable plastics

- Avoid the use of biodegradable or compostable plastic materials in packaging. There is currently no sorting solution enabling them to be recycled. They may not be put in the organic fractions collected from households, either.

- Find a dedicated FAQ on this page: https://www.fostplus.be/en/members/sustainable-packaging#FAQ

# Labels and sleeves

- Use sleeves or labels that cover a maximum of 70% of the packaging surface (container ≥ 50cl) or 50% (container < 50cl).
- If a full sleeve is necessary, add perforations that tear easily and add clear, visible messages encouraging consumers to separate the sleeve from the bottle or container.

  *Please note that in reality, many consumers will not remove the sleeve.*
- Use labels that can easily be removed from the packaging and that do not break up into tiny pieces during washing.

# Barriers, glues and adhesives, inks and pigments

- Use the right quantity of barrier necessary to protect the product
- Avoid using barrier substances containing chloride derivatives (PVC, PVDC) and aluminium layers sandwiched between the other layers of the packaging.
- Give preference to barrier materials such as SiOx, AlOx or EVOH at less than 5% of the weight of the packaging
- Fost Plus has become a supporter of Recyclass since 1/1/23
- For advise on glues, barriers, inks, combination of labels/sleeves/banderolles or other add-ons with packaging materials we mostly refer to Recyclass D4R guidelines: https://recyclass.eu/.
- You can send your questions via this form to receive tailor-made answers on your specific questions.

# Glass Packaging

## Color and opacity

- Opacity is a problem for recycling
- Black glass bottles colored in the mass are obstructive packaging, thus they are applied the highest Green Dot fee, see dedicated FAQ about obstructive packaging : https://www.fostplus.be/en/members/services#FAQ.

**D4R advice**

- The less opaque the better
- No quantitative threshold (yet)
- In doubt, contact FERVER

Hazy transparent bottles, transparent colored bottles or transparent colorless bottles are recycled

# Glass Packaging

## Labels & sleeves

- Avoid metallized labels
- The adhesive must be **water washable**
- Avoid full-body sleeves, especially if they cover the bottom of the bottle
- Avoid PVC sleeves

## Closures

**Avoid tethered closures in a different material** such as twist-off ceramic closures, or closures that don't require being removed to consume the product.

# Glass Packaging

## Tamper-proof additions to closures

- Avoid aluminium that is stuck on the glass which is difficult to remove during recycling, and can lead to metal inclusions in the recycled glass creating visual and mechanical issues

- Prefer paper, alu without glue or plastic that can be removed during the crushing or washing steps

# Link with Green Dot fees

- The Green Dot fees are calculated in such a way that each type of recycled packaging material covers the cost of its recycling chain. This means that a lower Green Dot fee applies for packaging materials that are easy to collect, sort and recycle than for packaging materials that are difficult to sort and recycle.
- In addition, for packaging that cannot be recycled or that disrupt the sorting and/or recycling process, discouraging rates are applied.
- More info: https://www.fostplus.be/en/members/green-dot-rates

# Design for Recycling after 2030

**From 2030, the recyclability of packaging in the EU will be defined in the delegated acts of the Packaging and Packaging Waste Regulation (PPWR).**

**Therefore, some of the current recommendations above may change.**

**While the delegated acts have not been published yet, Fost Plus will try to share the latest information about PPWR on this page.**

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