Ministry of Environment and Gender Equality
Environmental Protection Agency

Instructions

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Guidance on the determination and calculation of modulated fee following the Packaging Executive Order

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1 Background and purpose

The purpose of this guide is to provide a detailed understanding of the environmental modulation of fees for packaging, cf. the Packaging Order BEK no. 1146 of 29/09/2025 "Bekendtgørelsen om visse krav til emballager, udvidet producentansvar for emballage samt øvrigt affald der indsamles med emballageaffald" (The legislation is only available in Danish)". The document has been developed as an aid to companies and producer responsibility organisations in complying with the requirements regarding producers' financial fees and the obligations of producer responsibility organisations in this context.

The Danish Environmental Protection Agency will continuously revise the guidelines. Users of the guidelines are therefore encouraged to stay informed about any updates to the guidelines on the Danish Environmental Protection Agency's website.

1.1 Central definitions:

Definitions

Unit of packaging: a unit, including any integrated or separate components, which as a whole serves a packaging function, such as the containment, protection, handling, delivery, storage, transport or presentation of products, and includes independent units of grouped or transport packaging where they are discarded prior to the point of sale

Main component: a component which has the highest weight in the unit of packaging

Integral component: a packaging component, whether or not of the same material as, or distinct from, the main body of the packaging unit, that is integral to the packaging unit and its functioning, that does not need to be separated from the main body of the packaging unit in order to ensure the functionality of the packaging unit and that is typically discarded at the same time as the main body of the packaging unit, although not necessarily via the same disposal route

Separate component: a packaging component, whether or not from the same material as the main body of the packaging unit, that is distinct from the main body of the packaging unit, that needs to be disassembled completely and permanently from the main body of the packaging unit and that is typically discarded prior to and separately from the main body of the packaging unit, including packaging components that can be separated from each other simply through mechanical stress during transportation or sorting

Recycled plastic: recycled plastic means plastic that has been post-consumer plastic waste before recycling[1]

Contact-sensitive packaging: a packaging that is intended to be used for products falling within the scope of Regulations (EC) No 1831/2003 of the European Parliament and of the Council, (EC) No 1935/2004, (EC) No 767/2009 of the European Parliament and of the Council, (EC) No 1223/2009 of the European Parliament and of the Council, (EU) 2017/745, (EU) 2017/746, (EU) 2019/4 of the European Parliament and of the Council or (EU) 2019/6, or of Directives 2001/83/EC, 2002/46/EC of

[1] Definition from COMMISSION IMPLEMENTING DECISION (EU) 2023/2683of 30. November 2023 on rules for the application of Directive (EU) 2019/904 of the European Parliament and of the Council as regards the calculation, verification and reporting of data on the content of recycled plastic in single-use plastic bottles for drinks

the European Parliament and of the Council or 2008/68/EC, or for products as defined in Articles 1 and 2 of Commission Decision (EU) 2023/1809[2]

Mono-material: a mono-material means a material that only consists of one single type of material

Operational costs: costs of handling packaging waste. Pure administrative costs are not covered

Postconsumer recycled plastic waste: is plastic waste that comes from plastic products that have been marketed[3]

2 Get started

Are you unsure about how to get started with environmental modulation of your packaging? Then you can begin by answering the following questions:

a. *Is my packaging covered by environmental modulation?*
Packaging covered by producer responsibility for packaging is not always covered by the modulation fee. The relevant material subcategories are listed in section 3.1 of this guide. Please also note the possible exceptions to modulation described in §87 paragraph (3) of the Packaging Order.

b. *What is my packaging made of?*
The environmental modulation depends on the materials and components used in your packaging. The assessment is based on the packaging as a whole, including the components that are attached when the packaging becomes waste. The decision tree (in section 3.2, Figure 3), can help determine the number of packaging components, as well as which should be assessed together and which should be assessed as separate components.

c. *What design criteria apply to my packaging?*
Each material subcategory has a table showing which design criteria apply to the packaging (the main component and its integrated components) and subcomponents that are separated before the packaging becomes waste or during waste treatment (separate components). The design criteria for all subcategories are shown in the appendix. Guidance on how to read the table and how to understand the design criteria is provided in sections 3.4, 3.5 and 3.6. Guidance on how to document the criteria is provided in sections 3.7 and 3.8.

d. *What do I have to pay?*
The producer responsibility organisation calculates the fee for the various material subcategories based on, among other things, the operational waste management costs. However, it is the environmental modulation model that determines how this fee is to be distributed among the members of the producer responsibility organisation based on the packaging's environmental impact. See more in section 4.

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[2] Definition from Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/904, and repealing Directive 94/62/EC

[3] Definition from COMMISSION IMPLEMENTING DECISION (EU) 2023/2683 of 30 November 2023 on rules for the application of Directive (EU) 2019/904 of the European Parliament and of the Council as regards the calculation, verification and reporting of data on the content of recycled plastic in single-use plastic bottles for drinks

2.1 Exceptions to the environmental modulation of packaging

Not all packaging is covered by the environmental modulation.

The 10 material categories to be environmentally modulated are: Flexible plastic, Rigid plastic, Rigid PET, Foam plastic, Food and beverage cartons, Glass, Cardboard, Paper, Ferrous metals and Aluminium. For the other material categories, wood, textiles, porcelain, cork, ceramics and others – the operational economic fee to the producer responsibility organisations is calculated as the average cost of waste treatment.

Furthermore, § 87 paragraph (2) and (3) of the Packaging Order stipulate that there are a number of specific exemptions from the environmental modulation system. § 87(2) stipulates that a producer responsibility organisation shall not modulate a producer's financial fee if the producer makes available less than 8 tons of packaging during a calendar year. Paragraph 3 describes a number of exceptions for inner packaging and contact-sensitive packaging (see the Packaging Order for further details).

However, producers exempted under § 87 (2) and (3) has the option to request that their fee be environmentally modulated. If producers covered by these exemptions wish to have their fee environmentally modulated, they may still choose to be exempted from the requirement regarding recycled plastic content.

3 Material subcategories, levels and design criteria

3.1 What is a material subcategory?

Material subcategories are shown in Figure 1.

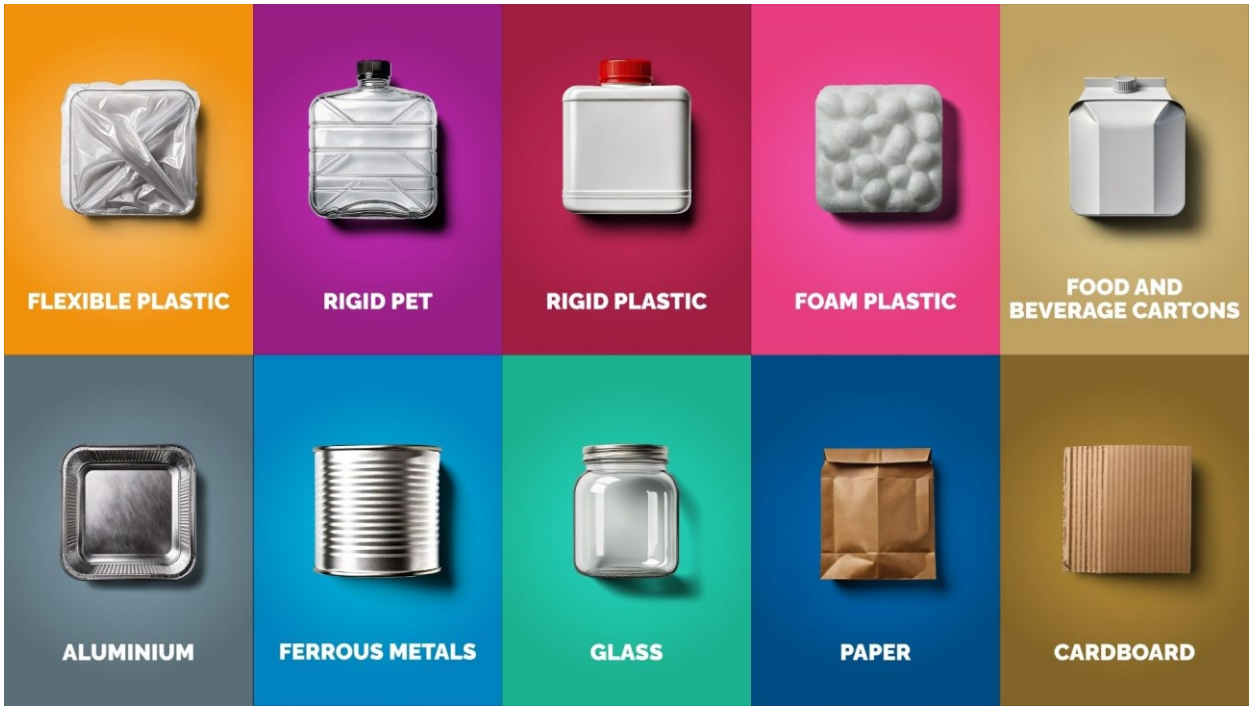

Figure 1 The 10 Material subcategories

In contrast to the material categories used in reporting to the DPA, packaging must be divided into material subcategories for the purpose of environmental modulation. The material subcategories are defined based on both the material type and the recycling stream in which the packaging is included. The categorisation into a specific material subcategory determines which design criteria the packaging must meet. At the same time, the modulation has economic significance, as waste treatment costs must be

balanced economically within each material subcategory. Therefore, the material subcategory also affects the fee that the producer must pay to the producer responsibility organisation.

Below is a non-exhaustive list of the types of packaging that fall under each material subcategory. If you have any questions, please contact the producer responsibility organisation.

1. **Flexible plastic**
   - Includes packaging with a predominant plastic content, made from flexible films, laminates and multi-layer materials. Flexible plastic can be made from a single type of plastic or composed of many different materials, such as PE (polyethylene), PP (polypropylene), PET (polyethylene terephthalate), PA (nylon), fibre-based materials, aluminium, etc.
   - Flexible plastic can be recognised by its 2D format or by the fact that the component changes shape after filling. Flexible plastic includes, for example, bags, foil, shrink wrap, sleeves, tape, labels, etc.

2. **Rigid plastic**
   - Includes packaging made from all types of rigid plastic, such as PE (polyethylene), PP (polypropylene), PS (polystyrene), etc. However, rigid PET (polyethylene terephthalate) is excluded. Rigid plastic can be made from a single type of plastic or composed of different types of materials.
   - Rigid plastic can be recognised by its 3D format and the fact that the component does not change shape after filling. Examples of rigid plastic include bottles, trays, lids, tubes, etc

3. **Rigid PET**
   - Includes packaging made of rigid PET (polyethylene terephthalate), as opposed to flexible PET, which belongs to the flexible plastic material category. For rigid PET, the dominant material is rigid PET, but the packaging may be composed of different materials.
   - Rigid plastic can be recognized by its 3D format and the fact that the component does not change shape after filling. Rigid PET includes bottles, trays, lids, tubes, etc.

4. **Foam plastic**
   - Includes packaging made from all types of foam plastic, for example for transport protection or insulation, such as EPS (expanded polystyrene), XPS (extruded polystyrene), EPP (expanded polypropylene), PUR (polyurethane) and similar materials. For foam plastic, the dominant material is foam plastic, but the packaging may be composed of different materials.

5. **Food and beverage cartons**
   - Includes food and beverage cartons that have contained food, such as milk cartons, juice cartons and cartons for peeled tomatoes or similar products. This includes closed packaging that is not commonly used as service packaging.

6. **Glass**
   - Includes glass packaging

7. **Cardboard**
   - Includes fibre-based packaging that is usually not flexible, such as cardboard, corrugated cardboard and similar materials manufactured in a cardboard production process. Cardboard typically weighs between 180 grams/m2 and 400 grams/m2. Paperboard typically weighs 400 grams/m2 and above.
     Also includes service packaging, such as paper cups and salad bowls, provided that the dominant material is paper.

8. **Paper**
    - Includes fibre-based packaging that is flexible, such as paper bags, sandwich paper, muffin cases and similar items manufactured in a paper production process. In some contexts, paper is also used in connection with non-flexible packaging. Paper typically weighs between 17 grams/m2 and 180 grams/m2.

9. **Ferrous metals**
    - Includes metal packaging with a predominant content of steel and other ferrous materials, such as food cans, drums, buckets and similar items.

10. **Aluminium**
    - Includes aluminium packaging with a predominant aluminium content, such as cans, foil, trays and similar items.

3.2 How is packaging categorized into a material subcategory?

A packaging unit (see Figure 2) consists of a main component and possible. separate components. The main component and separate components may have integrated components. Examples are given in section 3.2.1.

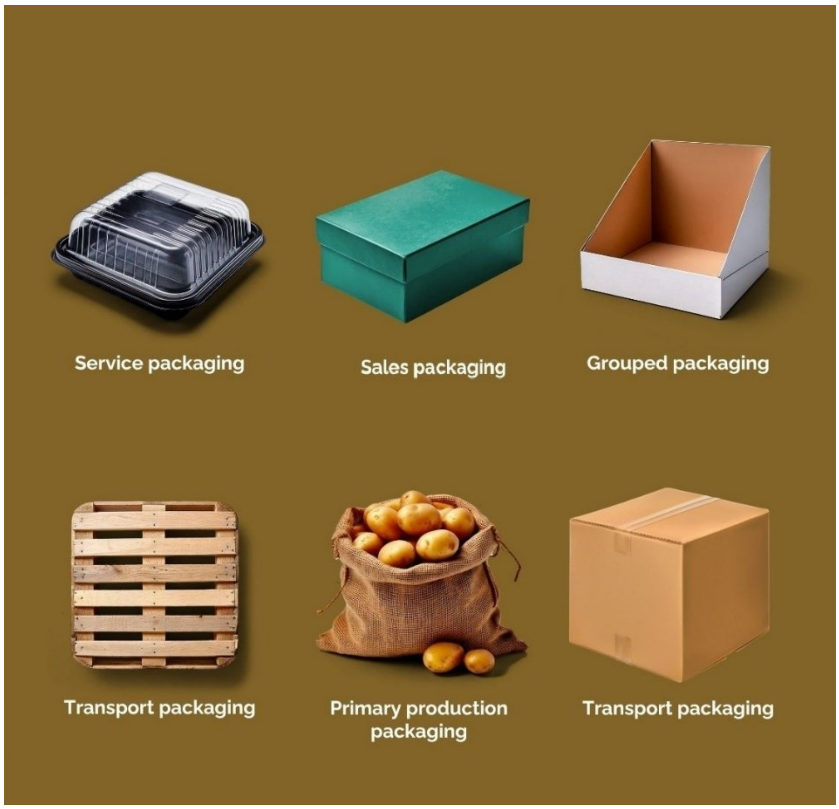

Figure 2 Examples of packaging units

A component is to be understood as the part of the packaging that can normally be separated from the packaging by hand or with simple tools, for example a lid, seal, label, etc. This is in contrast to a constituent, which forms part of the component, for example adhesive, ink, barrier, coating, etc.

When components are to be placed in a material subcategory, the main component and separate components are categorized independently of each other and on the basis of the dominant material in each component, based on weight. A separate component must be assessed as a main component. The weight of any integrated components is included in the weight of the main or separate component with which they are integrated. For example, a main component weighs 100g, of which 45g is rigid plastic and

55g is cardboard. In addition, the rigid plastic lid weighs 20g. If the lid is an integrated component, it counts towards the weight of the main component, and the entire packaging must therefore be categorized according to the design criteria applicable to rigid plastic.

If a separate component is not documented as separate, it changes status to an integrated component and is categorised in the same material subcategory as the main component and counts towards its weight.

An integrated component can change status to a separate component if it can be documented that, through simple mechanical impact during transport or sorting, it becomes separated from the component with which it is integrated. How this can be documented is described in Section 3.8.

In the event that there is no dominant material, the packaging is categorised based on the material that pays the highest fee in the producer responsibility organisation in question.

The decision tree in Figure 3 provides guidance on how a packaging unit can be divided into a main component and sub-components.

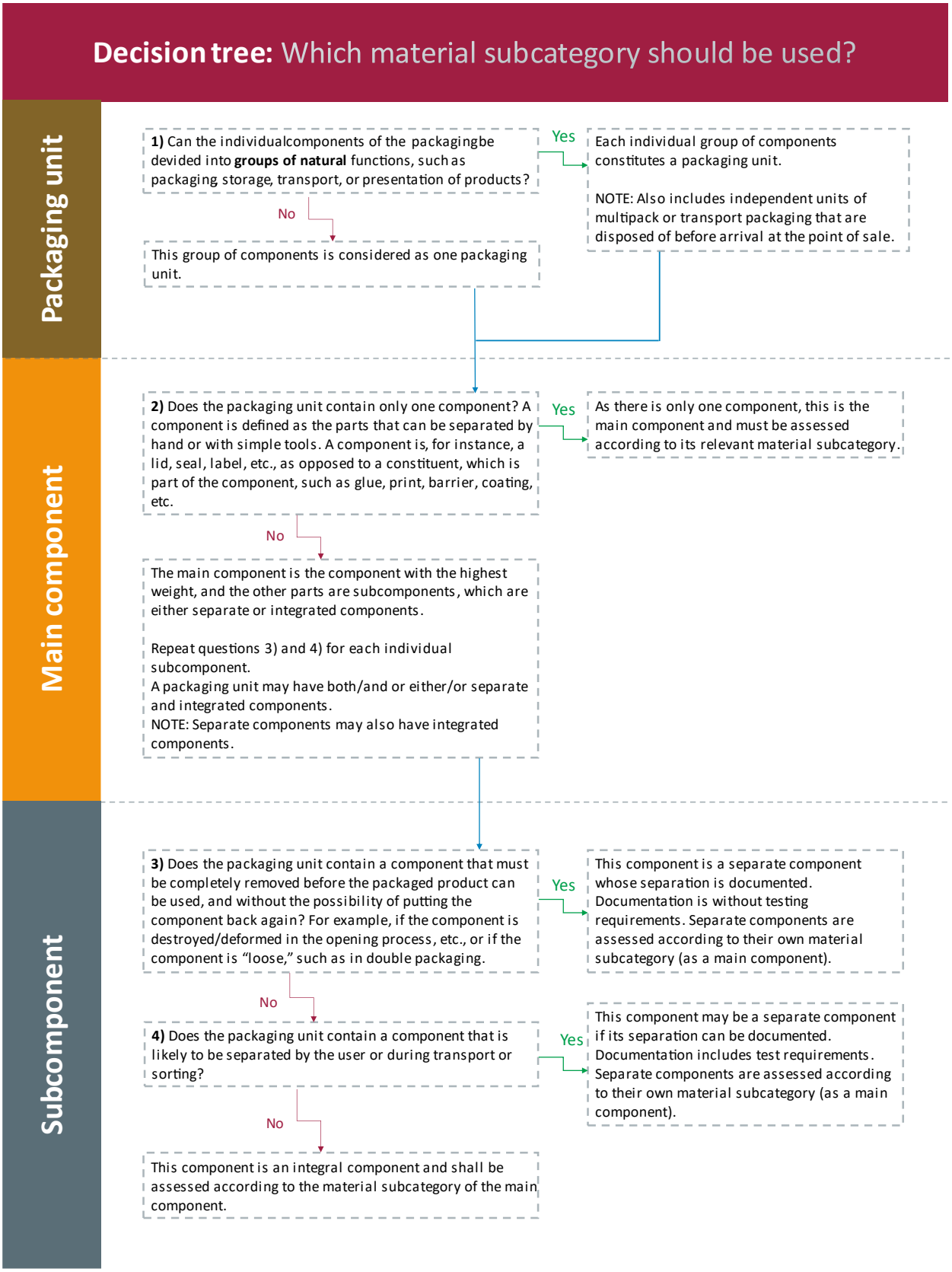

Figure 3 Decision tree for modulation between main component, separate component and integrated component. Note the exception for glass containers with metal screw cap, see Section 3.4.2.

3.2.1 Examples of using decision tree

Example 1
The example is illustrated in Figure 4.

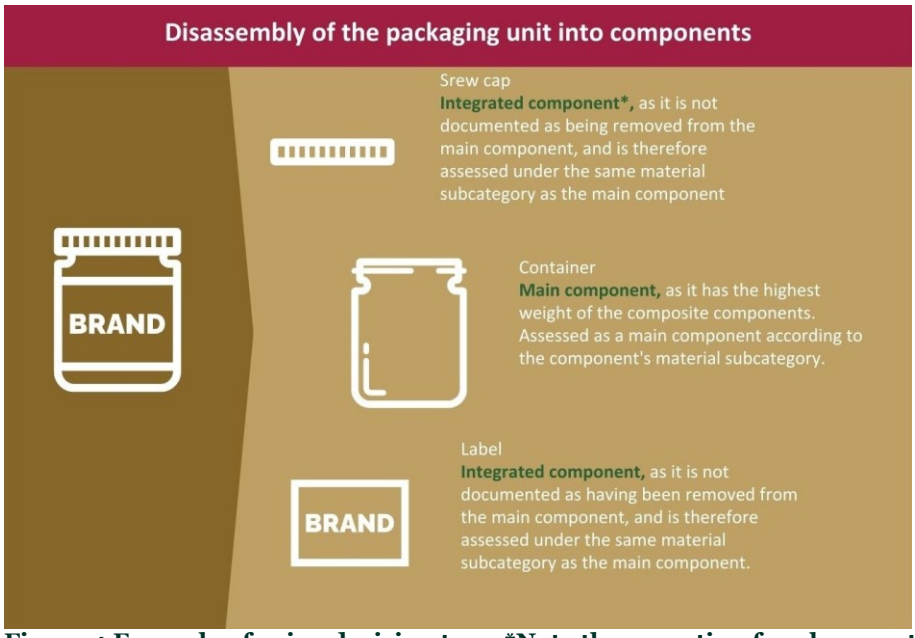

Figure 4 Example of using decision tree. *Note the exception for glass containers with metal screw cap, see Section 3.4.2.

The packaging unit:
The sales unit consists of a container with a screw cap and label, which form a natural assembly of components.

The main component:
The container has the highest weight of the assembly of components, so the container is the main component. This means that the lid and label are subcomponents.

Sub-components:
All components are de facto integrated components until they are documented as separate components. Guidance on how to document this is provided in section 3.8.
Lids are documented as separate components during sorting and thereby change status to a separate component. Note the exception for glass containers with metal lids, see 3.4.2. This means that the lid must be assessed according to the dominant material of the lid and assessed as a main component.
Labels are not assessed and therefore retain their status as integrated components. Labels are assessed as integrated components under the same material subcategory as the main component.

Example 2
The example is illustrated in Figure 5.

Figure 5 Example of using decision tree

The packaging unit:
The sales unit consists of a box, a tube, a foil seal and a screw cap, which form a natural assembly of components.

The main component:
The tube has the highest weight of the assembly of components with the box, foil seal and screw cap, so the tube is the main component. This means that the box, foil seal and screw cap are sub-components.

Sub-components:
All components are de facto integrated components until they are documented as separate components. Guidance on how to document this is provided in section 3.8.
The box is ”loose” as described in the decision tree in Figure 3 under subcomponents, point 3, and can therefore be documented as a separate component. The box must be assessed as a main component without integrated components.
The foil seal is documented without testing requirements, as it is assessed as being completely removed by the user without the possibility of being put back again.
The screw cap is not assessed and thus retains its status as an integrated component. The screw cap is assessed as an integrated component under the same material subcategory as the main component.

3.3 Levels under each material subcategory

Under each material subcategory, the packaging is divided into several levels based on the environmental impact of the packaging waste. The levels are labelled as green, yellow, and red. The green level categorizes packaging with the lowest environmental impact, the yellow level categorizes packaging with a medium environmental impact, and the red level categorizes packaging with the highest environmental impact.

Figure 6 below shows an overview of the number of levels under each material subcategory.

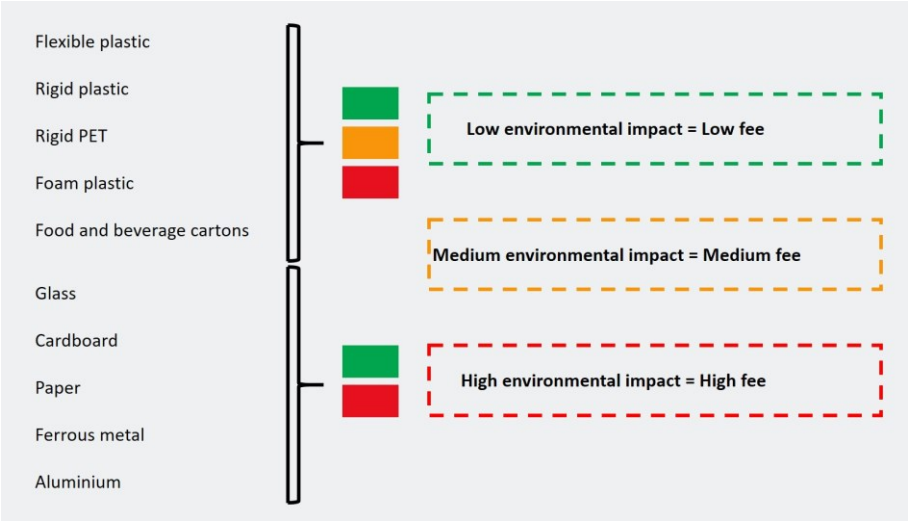

Figure 6 Levels for the 10 material subcategories

As depicted in Figure 6, there are three levels (green, yellow, red) for flexible plastic, rigid plastic, rigid PET, foam plastic and food and beverage cartons. There are two levels (green, red) for glass, paper, cardboard, ferrous metals, and aluminium.

3.3.1 How to categorize packaging in one of the levels green, yellow or red?

Packaging that is categorized in the material subcategories flexible plastic, rigid plastic, rigid PET, foam plastic and food and beverage cartons must be categorized as either green, yellow or red level. This is done as follows:

1. First, assess whether the packaging contains any design criteria specified at the red level. If the packaging contains even one of the criteria specified at the red level, it must be categorised in the red level. If the packaging does not contain any of the criteria at the red level, proceed to the green level.
2. If the packaging meets ALL the criteria at the green level, it is categorised in the green level. If there is just one criterion that the packaging does not meet at the green level, it cannot be categorized here, and you move on to look at the yellow level.
3. If the packaging meets ALL the criteria at the yellow level, it is categorised here. If there is just one criterion that the packaging does not meet at the yellow level, it is categorized t the red level.

Packaging categorized in the material subcategories: glass, cardboard, paper, ferrous metals and aluminium must be categorized as either green or red level. This is done as follows:

1. If the packaging meets ALL criteria at the green level, it is categorized as green level. If there is even one criterion that the packaging does not meet at the green level, it is categorised as red level.

If a design criterion cannot be documented, the packaging is categorised as red level.

The design criteria are mutually exclusive, but in order to understand a design criterion, it can sometimes be useful to view the criterion in relation to the same design criterion in the other levels. For example, if you look at the design criterion under ”other barriers” in the yellow level under the material subcategory flexible plastic, you need to look at the green and red levels to understand what ”other barriers” means.

It is also important to note whether the design criteria are separated by ”and” or ”or”. If “and” is used, all of the listed design criteria must be met. If ”or” is used, it is sufficient for one of the criteria to be met. The

word ”and/or” is used for criteria where it is up to the individual packaging whether both criteria can be met or only one is possible.

In some tables, a criterion is listed identically in both the green and yellow levels. This means that it is the design criteria in other topics that determine whether packaging is categorised at the green or yellow level.

3.4 How to read design criteria tables?

A design criterion is the requirement against which a given packaging must be measured in order to be placed at either the green, yellow or red level under a material subcategory. Section 5, Annexes 1-10 shows the tables for design criteria broken down by material subcategory.

Each table contains four main elements:

- A heading that refers to the material subcategory to which the design criteria apply.
- A subheading that indicates whether the table applies to the main component, integrated component or main component and integrated component
- A row of topics specifying which part of the component the design criterion applies to
- Two or three columns indicating the level to which the design criterion refers, i.e., green, yellow or red level

If a table with the subheading ”Main component” is found under a material subcategory, the design criteria in the table apply only to the main component of the packaging and not to the integrated components. In this case, there is a table further down the page with the subheading ”Integrated component”, where the design criteria only apply to the integrated components of the packaging and not to the main component. If the subheading states ”Main component and integrated component”, the design criteria apply to both. In this case, the integrated components must be assessed as part of the main component, and the mass of both the main component and the integrated component is included in any percentage distribution, such as for the design criterion of 95% fibre material by weight under the material subcategory cardboard. Separate components must meet the criteria set for a main component.

3.4.1 Examples of environmental modulation

Example 1

The example shows a rigid plastic tray made of PP with a PE seal. It is assumed that there is no documented separation of the components.
For the plastic tray, it can be documented that the main component consists of more than 95% PP by weight. The packaging therefore complies with the green level design criterion. The packaging's integrated component consists of PE and therefore does not meet the green level design criterion, which requires that the integrated component be made of the same material as the main component. However, according to the design criteria, the packaging's integrated component made of PE can meet the requirements for the yellow level.

If documentation can be provided for compliance with the remaining design criteria at either the green or yellow level, which are not shown in this figure, the packaging must be categorized at the yellow level, as it meets the criteria for this level in the table for integrated components.

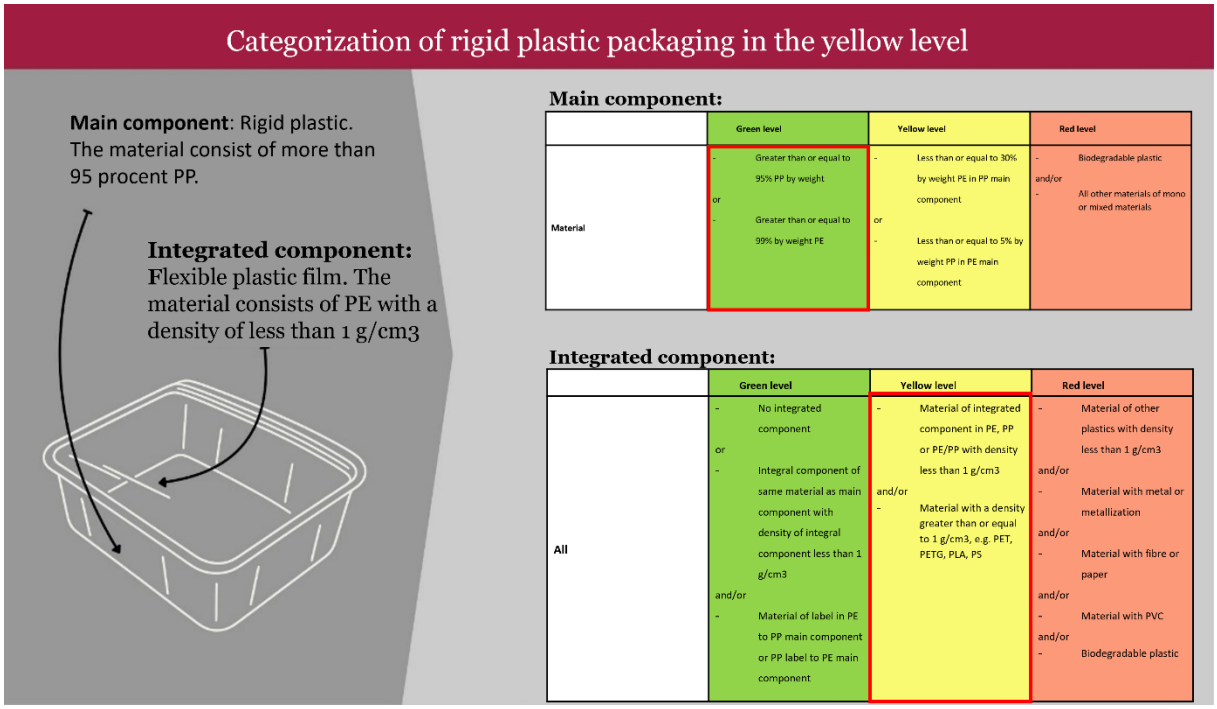

Figure 7 Example of modulation

Example 2

The example shows a cardboard box with tape and a flexible plastic label. It is assumed that there is no documented separation of the components. For the cardboard packaging, it can be documented that all design criteria at the green level are met. As the design criteria for the main component and integrated component are combined in one table, the integrated component is assessed as part of the main component. Since the packaging (main component and integrated component) still meets the requirement of at least 95% fibre material by weight, where the weight of the tape is not included in the calculation, it can be categorized at the green level even though it has a flexible plastic label.

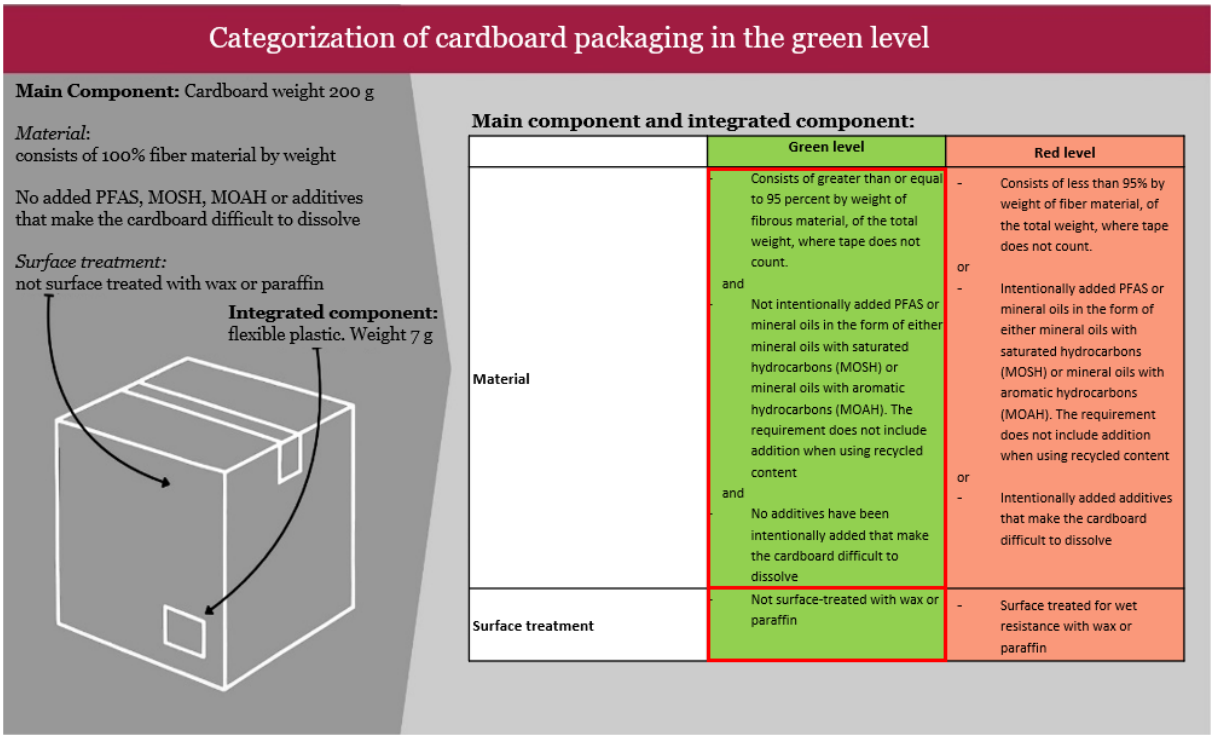

Figure 8 Example of modulation

3.4.2 Detailed explanation of the design criteria

For a number of the design criteria, there is a need to elaborate on what they entail. This is described below.

Material subcategories: flexible plastic, rigid plastic, rigid PET and foam plastic

Material:

- The design criterion applies exclusively to the polymer structure of the main component, excluding the barrier, where the weight percentage does not include other components such as adhesives, coatings, etc. Here, it is important to distinguish between material and barrier, where the definition of functionality can be fluid. In this context, PVC and PA, for example, are defined as barriers, and the design criteria for these are listed under the heading ”barrier” in the table.
- The design criterion for biodegradable plastic must, according to CEN/TR 15351:2007, definition 5.2.c.1, be understood as any plastic polymer that degrades as a result of cell-mediated phenomena (interpreted as biological processes).

Density or additives:

- The design criterion applies only to the material. The additives themselves may have a density that does not comply with the design criterion. It is the material of the component that must not have a density that deviates from the design criterion after the additives have been mixed with the plastic.

Colour or printing ink for labels or decoration:

- The design criterion “colour” refers to the coloration of the plastic, while the design criterion “printing ink” refers to colour that is applied, printed, etc. to a finished plastic component or layer. EuPIA exclusion policy of printing inks and related products[4] applicable to all packaging regardless of what the packaging is to be used for, food, non-food, etc

- The design criterion “Print ink coverage below 25 percent” must be calculated as a percentage of the surface area. It is calculated as the area of the direct print divided by the area of all surfaces of the packaging excluding the bottom and inner edges, multiplied by 100.
- For the flexible plastic material subcategory, design criteria have only been set for the “integrated component” regarding printing inks for labels and decoration of films. This means, for example, that there are no design criteria for other integrated components, such as labels, closure systems, etc.

Adhesives for multilayer materials:

- The design criterion “adhesives for multilayer materials”, which is set for the flexible plastic material subcategory, only applies to the amount of adhesive used in the multilayer material. For example, adhesives used on labels and tape are not covered. However, if labels or tape consist of a multi-layer material, the requirement will apply to the amount of adhesive used in the multi-layer material.

All:

- For the topic “all”, refer to the table heading “integrated component”, where design criteria apply to all types of integrated components, such as labels, lids, etc.

[4] EuPIA exclusion policy of printing inks and related products: https://www.eupia.org/our-commitment/eupia-exclusion-policy-for-printing-inks-and-related-products/

Material subcategory: Glass
Label:

- The design criterion "water-washable adhesive" means that the adhesive can be washed off the main component so that all the adhesive remains on the label without dissolving in the wash water.

Material subcategory: Cardboard and paper
Material:

- The design criterion for materials applies to all components of the main component and integrated components, i.e. adhesive, printing ink, etc.
- The design criterion "more than or equal to 95% by weight of fibre material" must be understood in relation to the total weight of the packaging (main component and integrated component). In this context, the fibre material must be understood as containing cellulose fibre, binders, fillers, water content, and coating. However, the latter must not be plastic.
- The design criterion "solubility" is assessed based on ISO standard 5263 or similar methods.

Material subcategory: Food and beverage carton
Laminates and barrier films:

- The design criterion applies exclusively to the polymer structure. The fibre part does not count.

3.5 The design criterion concerning recycled plastic content

The design criterion for recycled content consists of a requirement for a minimum of 20% recycled content from post-consumer recycled plastic in the green level for the material subcategories: flexible plastic, rigid plastic, rigid PET, and foam plastic for all packaging, except packaging for contact-sensitive products (see section 3.6).
Post-consumer recycled plastic waste is defined as plastic waste that comes from plastic products that have been marketed[5]. Recycled plastic is plastic that has been post-consumer plastic waste prior to recycling[6].

The basic calculation method is described in DS/EN 15343, where the percentage of recycled content in the product is the mass of recycled content in the product divided by the total mass, multiplied by 100. Below is shown the calculation formula used for the calculation of content of recycled plastic.

Calculation:

Percentage of post-consumer recycled content in packaging (main component and integrated component) = (mass of post-consumer recycled plastic in packaging / total mass of plastic in packaging) * 100

It is important to note that the calculation is based solely on the mass of plastic in the packaging (main component and integrated component).

The Packaging Regulation states that, by December 31, 2026, the Commission shall adopt implementing acts laying down the method for calculating and verifying the percentage of recycled content, as well as

[5] Definition from COMMISSION IMPLEMENTING DECISION (EU) 2023/2683 of 30 November 2023 laying down rules for the application of Directive (EU) 2019/904 of the European Parliament and of the Council as regards the calculation, verification, and reporting of data on the recycled plastic content of single-use plastic beverage bottles
[6] Definition from COMMISSION IMPLEMENTING DECISION (EU) 2023/2683 of 30 November 2023 laying down rules for the application of Directive (EU) 2019/904 of the European Parliament and of the Council as regards the calculation, verification, and reporting of data on the recycled plastic content of single-use plastic beverage bottles

certification and formats for technical documentation. Changes to how the calculation is performed can therefore be expected.

The concept of mass
Article 7 of the Packaging Regulation sets out the following parameters for calculation: recycled content must be determined per packaging type and format and must be calculated as an average per factory and year, where factory is understood as only one industrial facility where packaging is manufactured. This means that the industrial facility must be located within the same geographical area.
The Danish Environmental Protection Agency has the interpretation that the chain of custody model "mass balance rolling average" must be used as a minimum requirement, cf. ISO/DIS 22095. Thus, there may be variation in the precise content of recycled content within a given packaging type and format within a given period of one year. This can also be achieved with more precise mass calculations such as the "controlled blending" model.

The Danish Environmental Protection Agency requires documentation of the implementation of a management system. The system must ensure traceability of inputs (virgin and PCR material) and outputs (products, by-products, waste, etc.) at a customer-specific level per packaging type and format per year, as documentation of recycled content. There is freedom of choice regarding the method, but the system must be audited annually, for example as part of other audits that the company already conducts.

Applicable design criteria for recycled content
Design criteria for recycled content are limited to setting design requirements for "material" and "density" where this is specified as a criterion. This means that for the part of the packaging that is made from recycled plastic, compliance with all other design criteria in the tables for the material subcategory, e.g., barrier, printing ink, etc., found in the material as Non-Intentionally Added Substances (NIAS), does not need to be accounted for. No other substances or materials may be added to the recycled content without complying with the complete list of design criteria. The recycled content consists only of plastic and may not include fillers or other materials as part of the mass of the recycled plastic.
The input material from recycled content is expected to be quality assessed based on the specific use. For this assessment, it is advisable to use EN 18064-1:2025 Plastics – Quality recommendations and basis for specifications for the use of recycled plastics in products as a starting point.

Documentation for recycled content
When the design criterion must be documented, the input PCR material must be subject to third-party certification of post-consumer recycled plastic in accordance with DS/EN 15343. In this context, reference is made to DS/CEN/TR 18160:2025, which specifies how the definition of PCR should be understood. Certification of the input material of recycled plastic is necessary because it is not possible to measure the proportion of recycled content in the finished packaging.

In order to document compliance with the design criterion, the reprocessing company must be audited to verify the basis for calculation, cf. the above section on the concept of mass. Thus, the Danish Environmental Protection Agency does not require third-party certification of the reprocessing.

3.5.1 Example for calculating recycled content
Packaging must contain a minimum amount of recycled content to meet the green level criterion. The criterion is set for the total plastic weight, for example, the main component and integrated component or separate component and integrated component. If it is easier to ensure compliance, the minimum content can, as an alternative, also be verified for each individual component. See example in Table 1.

Table 1 Calculation of minimum recycled plastic content in packaging

Packaging	Component type	Weight of Component	Weight of plastic	Minimum PCR content for green level
PE bottle	Main component	7.00 g	7.00 g	1.80 g
PP screw cap	Integrated component	2.00 g	2.00 g	
Paper label	Integrated component	2.00 g	0 g	
PET/Alu/PE foil	Separate component	1.00 g	0.75 g	0.15 g

The mass balance for the running average can be calculated as shown in Table 2.

Table 2 Calculation of average recycled content in the bottle component for customer A

Customer A	Batch 1	Batch 2	Batch 3	Total per year
Input PCR plastic	1.75 tons	0	0.70 ton	2.45 ton
Input Virgin plastic	1.75 tons	2.20 ton	1.70 ton	5.65 ton
Product - bottle	3.00 tons	2.00 ton	2.00 ton	7.00 ton
PCR share – bottle	50%	0 %	25%	**28.57 %**
By-product	0.30 ton	0.10	0.10	0.50 ton
Waste	0.20 ton	0.10	0.30	0.60 ton

In this example, 1 million bottles per year are produced at a specific factory for customer A. The manufacturer has decided that all recycled content must come from the main component and none from the other integrated components. The customer chooses not to meet the recycled content requirements for the separate component, as the separate component cannot meet the criteria for the green level based on the other design criteria.

Table 3 Calculation of recycled content for customer A

Packaging Output	Weight of component	Weight of plastic	Weight of PCR	Content of PCR plastic
PE bottle	7.00 g	7.00 g	7.00*0,2857 = 2.00 g	= (2.00/9.00) * 100= **22,22%**
PP screw cap	2.00 g	2.00 g	0 g	
Paper label	2.00 g	0 g	0 g	
Total	11.00 g	9.00 g	2.00 g	

The calculation of compliance with the design criterion for the packaging for customer A is shown in Table 3. The result for customer A is stated as minimum 20% recycled PCR plastic and meets the design criterion for the green level for the main component and integrated component.

3.6 How to understand contact sensitive products

Products that fall under the definition of contact-sensitive products are exempt from meeting the design criterion for recycled content in the green level for the material subcategories: Flexible plastic, Rigid plastic and Foam plastic.

A contact-sensitive product is defined based on selected areas of application in legislation. This means that packaging is covered by the definition of a contact-sensitive product if the product for which the packaging is used is covered by this legislation. An explanation of whether a product is covered can therefore be found in this legislation.

A contact-sensitive product is defined based on the scope of application in the following legislation:
(EC) *1831/2003 on feed additives*
(EC) *1935/2004 on materials and articles intended to come into contact with food*
(EC) 767/2009 *on the placing on the market and use of feed*
(EC) 1223/2009 *on cosmetic products*
(EU) 2017/745 *on medical devices*
(EU) 2017/746 *on in vitro diagnostic medical devices*
(EU) 2019/4 *on the manufacture, placing on the market, and use of medicated feed*
(EU) 2019/6 *on veterinary medicinal products*
Directive 2001/83/EC *on the Community code relating to medicinal products for human use*
Directive 2002/46 EC *on the approximation of the laws of the Member States relating to food supplements*
Directive 2008/68/EC *on the inland transport of dangerous goods*
Products *defined in Articles 1 and 2 of Commission Decision (EU) 2023/1809 establishing EU Ecolabel criteria for absorbent hygiene products and reusable menstrual cups*

If you are unsure whether a product is covered, please contact the relevant authority responsible for the legislation in question.

The Danish Environmental Protection Agency assumes that the packaging components (main component and any integrated and separate components) that constitute sales packaging or service packaging within the specified product areas will be covered by the definition of contact-sensitive product.

Example
Considering packaging for the minerals calcium, phosphorus, and zinc, which are used in animal feed, the definition of a contact-sensitive product is assessed, i.e., the list of specified legislation is reviewed.
In this example, the minerals calcium, phosphorus, and zinc used in animal feed are considered to fall within the scope of REGULATION (EC) No 1831/2003 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 September 2003 on feed additives. Article 2(2)(a) of Regulation 1831/2003 defines feed additives as: “feed additives” means substances, micro-organisms, or preparations, other than feed material and premixtures, which are intentionally added to feed or water in order to perform, in particular, one or more of the functions mentioned in Article 5(3).

The packaging is exempt from the design criterion for recycled content, as “Regulation 1831/2003” appears in the list in the definition for contact-sensitive products for the minerals calcium, phosphorus, and zinc, which are used in animal feed, and can therefore be in the green level if all other design criteria are met.

3.7 Documentation for producer responsibility organization

According to §87 of the Packaging Order, producer responsibility organisations are obliged to ensure that the fees collected are modulated in accordance with the model for the environmentally modulated fee for packaging. This means that producer responsibility organisations must ensure that their members' packaging is correctly categorised in the relevant material subcategory and at the correct level. Companies should therefore contact their producer responsibility organisation if they are in doubt about which material subcategory and level their packaging should be categorised in.

It is up to the producer responsibility organisation to assess what documentation is necessary for the correct modulation of a member's packaging. In some cases, a declaration of conformity may be sufficient, in which members declare that they comply with a certain level under a material subcategory and that they can, upon request, provide the technical documentation to support this. In other cases, the producer responsibility organisation may consider that the member must provide technical specifications for the packaging. If a member is unable or unwilling to provide the documentation required by the producer responsibility organisation, the member's packaging will be categorised at the red level.

3.7.1 Self-monitoring

§ 91 of the Packaging Order requires producer responsibility organisations to carry out self-monitoring at least once a year, in order to ensure that the fees collected are modulated in accordance with the model for the environmentally modulated fee. The producer responsibility organisations must prepare a written description of the procedure and documentation for the implementation of the self-monitoring. The description of the procedure and documentation for the implementation of the self-monitoring must be made available to the Danish Environmental Protection Agency upon request.

The self-monitoring of producer responsibility organisations may, for example, comprise the following three elements: 1. a risk analysis, 2. self-monitoring procedures, and 3. documentation of self-monitoring performed.

Risk analysis
The producer responsibility organisation uses the risk analysis to identify the greatest risk of errors or misunderstandings performed by members when setting the modulation levels.

A good starting point for the analysis is to create an overview of how packaging of the members of each producer responsibility organisation is distributed across the material subcategories and levels. The overview should include relevant parameters that are considered to affect the accuracy of the modulation – for example, industry, company size, and geographical location. The producer responsibility organisation should also consider which material subcategories and levels the risk and significance of an incorrect modulation is greatest.

The risk analysis and the selected parameters should be continuously updated regarding new knowledge about incorrect modulation. Based on the risk analysis, critical control points are identified, which form the basis for the subsequent self-monitoring procedures.

Self-monitoring procedure
The self-monitoring procedure describes how the identified control points are handled. For example, the procedure may include a description of how the producer responsibility organisation conducts random checks. This include how selected members are required to present technical documentation.

The procedures must be drawn up in writing and be available for presentation to the Danish Environmental Protection Agency upon request.

Documentation of self-monitoring
The producer responsibility organisation must keep written documentation of self-monitoring carried out in accordance with the self-monitoring procedures. The documentation must be sufficiently detailed and traceable and should also form the basis for internal follow-up. The documentation must be available to the Danish Environmental Protection Agency upon request.

Examples of documentation related to a random sample may include:

1) Selection list. An overview of the members selected for the random sample
2) Checklist. A systematic review of each random sample element with notes and any deviations
3) Summary. A brief assessment of the results, including any deficient information and necessary follow-ups
4) Responsible person and date. Information about who performed the check, when it was performed, and signature or other approval

Declaration of conformity
A producer responsibility organisation may use declarations of conformity as documentation that a member complies with the relevant design criteria for modulation to either the green or yellow level. The

declaration of conformity serves as assurance that the member has complied with the design criteria and assessed compliance with the design criteria at the selected level. Please note that the declaration of conformity does not exempt the company with producer responsibility from being able to document the technical specifications of the packaging if requested.

For the design criterion concerning recycled content, the declaration of conformity should state who has verified the use of post-consumer recycled plastic in accordance with DS/EN 15343. The reason why certification of recycled content is necessary is because it is not possible to measure the proportion of recycled content in the finished packaging.

At the request of either the producer responsibility organisation or the Danish Environmental Protection Agency, which is the supervisory authority, the company with producer responsibility must be able to present the relevant documentation within a reasonable time. The assessment of "reasonable time" is based on the nature and scope of the documentation.

The declaration of conformity must contain all the information necessary to identify the company with producer responsibility and the relevant packaging. The content of the declaration of conformity may follow the EN ISO/IEC 17050-1 standard, which can also be used as a guide for completing a declaration of conformity.

Annex 8 to the Packaging Regulation, "EU Declaration of Conformity No. (*)...", can also be used as a starting point, and Annex 7 to the Packaging Regulation, "Conformity Assessment Procedure," can be used as a starting point for the conformity assessment procedure.

Technical documentation
As part of EU harmonization legislation, manufacturers are required to prepare technical documentation that documents product complies with applicable legislation. The identical technical documentation can be used as a basis for compliance with the relevant design criteria for the environmental fee of packaging. The necessary documentation information depends on the type of packaging and on what is considered necessary from a technical point of view to document that the product complies with the design criteria.

3.8 Use of tests

3.8.1 Documentation of separate component with and without test requirements

As shown in the decision tree in Figure 3, a packaging unit may contain separate components that must be assessed according to their own material subcategory. Before a component can be considered a separate component, it must be documented that the component is separated from the main component. Depending on how the component is separated from the main component, documentation may or may not include testing requirements.

Documentation without testing requirements
For certain components, the separation from the main component is so clear that the documentation of their status as a separate component can be done without testing. This applies to subcomponents that can be completely removed before the packaged product can be used, without the possibility of putting the component back again, and to subcomponents that are loose, i.e., without screw threads, welding/gluing, etc. to the main component. Examples of loose subcomponents could be a flip top lid of rigid plastic for sour cream tubs or liver pâté in an aluminium tray, or double packaging, such as boxes around a product, for example containing breakfast bags, cream tubs, tubes, etc.

These components can be documented as separate components without testing requirements by means of a prose description and, if necessary, a photo describing/showing how the subcomponent is loose or deformed and cannot be reassembled.

In this context, it is important to point out that instructions to the user on how to separate the packaging are not sufficient for a component to be documented as a separate component.

Similarly, traditional glass packaging with metal screw caps, such as preserving jars and glass beverage bottles, does not need to be documented with a test. Because glass and metal are typically sorted into separate streams during the recycling process, this specific type of packaging can be exempted from the testing requirement. In this case, the documentation must consist of a prose description and, if necessary, a photo describing/showing that the packaging is comparable to ordinary glass packaging of this type.

Documentation with test requirements
For all other components not mentioned in the previous section, the component's status as a separate component must be documented by means of a test.

A component can be assessed as a separate component if it can be documented by a test that the subcomponent is separated from the main component at one of the following stages:

- Separation by the consumer/user of the product
- Separation during transport
- Separation during sorting

Sorting is considered to be the stage in the waste treatment chain where packaging fractions are separated into different types of materials for further recycling, while recycling is considered to be the subsequent stage where the sorted materials are processed and converted into new raw materials or products.
It is important to note that if separation only takes place at the recycling facility, the component is not considered a separate component.

The documentation with test requirements must contain the following [7]:

- A description of the test protocol, who performed the test, where, and when
- A description of the test facility and a justification of how the conditions are representative of the sorting of Danish packaging waste
- All relevant information to identify the packaging in question and all components that have been tested
- A description of the sample, where and how it was taken, and how it was ensured that the sample was representative
- The results of the test

The sample
As described in the previous section, a random sample must be taken as part of the test to determine whether the component can be considered separate. The following applies to random samples at each of the different stages of the waste treatment chain:

- For testing user/consumer separation, as many individual samples as necessary shall be taken until 100 samples (main components) have been recovered.
- For separation tests during collection and transport, 100 samples must be marked and discarded together with other waste in the collection bin prior to collection and transport. The test applies to only one collection vehicle (3 trips). Collection and transport must take place under normal conditions. This waste must be kept separate until counting has taken place.
- For tests for separation during sorting, the sample must be taken at the sorting facility. Note that separation of the sample must be prevented during sampling and at appropriate intervals between sampling. As many individual samples as necessary must be taken until 100 samples (main components) have been recovered.

[7] The basis for this is the upcoming standard prEN 18120-3 Annex C.

Results
A component is considered a separate component if it is 70 percent separate from the main component under investigation.

Calculation:
% separated = (Number of main components without examined subcomponent) / (Number og main components without examined subcomponent + number of main components with examined subcomponent)

3.8.2 NIR-sortable

For the material subcategories flexible plastic, rigid plastic, rigid PET, and glass, it is possible to comply with the design criterion on colour by testing whether the packaging is NIR-sortable.

The Danish Environmental Protection Agency has chosen to use tests as documentation, as this makes it possible to comply with the design criterion more flexibly, while still fulfilling the purpose of the criterion.

Under the auspices of CEN, work is underway to develop a standard for NIR sorting tests for plastics. In the long run, it is also expected that a CEN standard will be developed for NIR sorting tests for other types of materials, such as glass. As the CEN-standards are not yet publicly available, documentation of compliance with the NIR sorting test should be based on current industry practice.

The documentation must contain a description of the test protocol, a description of the test facility, and a justification of why the conditions are representative of the sorting of Danish packaging waste, as well as all relevant information for identifying the packaging that has been tested. Finally, the documentation must also contain the results of the test.

When conducting the test, the RecyClass sorting evaluation protocol, which describes a method for testing plastic packaging, can be used as a starting point. The packaging is considered NIR-sortable if it can achieve a sorting efficiency of 70 percent. It is also possible to use similar testing methods.

4 The economics of the model

4.1 Producers' payment to the producer responsibility organization

The producer responsibility organization are responsible for categorising the members' marketed packaging into material subcategories and into the respective levels of green, yellow, and red. As illustrated in Figure 9, this division determines how much a producer must contribute to the producer responsibility organization. The producer responsibility organization gives each producer who markets one or more red-level packaging an additional cost of 35 percent of the individual producer's calculated operational costs for waste management of all of its packaging that falls under the red level.

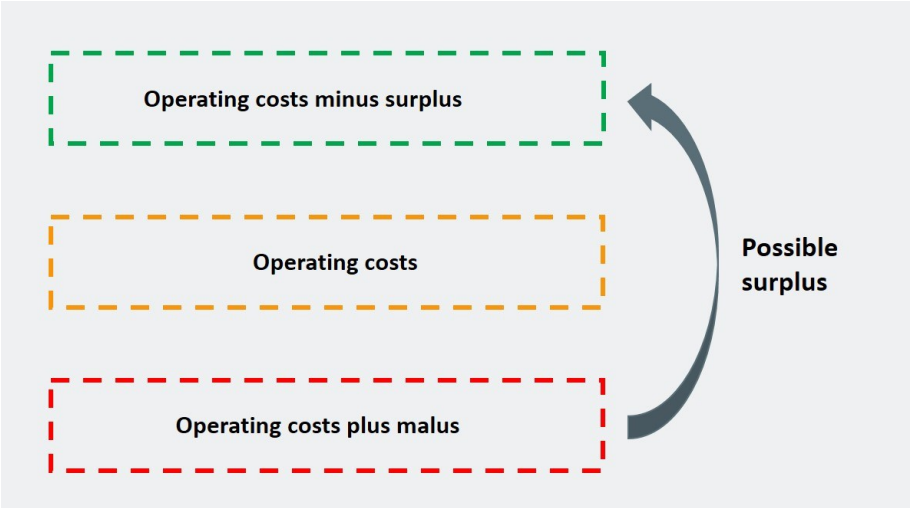

Figure 1 Economic model

The producer responsibility organisation uses the additional revenue from the extra cost charged in a given material subcategory to cover up to 80 percent of the operational costs for waste management of green level packaging within the same material subcategory. If there is a surplus under the individual material subcategories, the extra income is first allocated to packaging in the yellow level, then to the red level, with up to 80 percent of the operational costs covered at most.

The remaining operational costs for waste management of packaging in the green level are distributed according to the producers' share of marketed quantities within each material subcategory at this level. Packaging in the yellow level pays for its own calculated operational costs for waste management.

The producer's payment to the producer responsibility organisation will depend on how many tons of packaging the producer brings to the market in a given material subcategory, and also on whether the packaging is placed in the green, yellow, or red level. The same manufacturer may bring different types of packaging to the market under the same material subcategory, but at different levels. In this case, the producer's payment will depend on how many tons of packaging, for example, end up in the green and red levels, respectively. In practice, the producer responsibility organization, of which the producer is a member, could allow the additional cost and the reduced fee to offset each other, so that the producer receives only one total bill.

4.2 Examples of financial calculations

In the following section, three examples are provided on how the modulation of the producers' fee to the producer responsibility organisation can be calculated, considering different numbers of levels and distributions of marketed packaging under various levels. There is freedom of method for the producer responsibility organisation in how they will collect the fee in practice.

Please note that the price examples provided should not be taken at face value. It is the producer responsibility organisation that determine the average operational waste management cost applicable to their respective members.

A potential practical example could be:

Example 1

A producer responsibility organisation have 10 producers who collectively bring a total of 10 tons of cardboard packaging to the market. Five of these producers contribute 5 tons of cardboard packaging that falls under the red level, while the other five contribute 5 tons that fall under the green level. The producer responsibility organisation assumes the responsibility for waste management from the producers,

ensuring that the 10 tons of waste are appropriately managed. This is achieved by hiring a waste management company, which charges a total of DKK 13,170 to process the 10 tons of cardboard packaging. This results in an average waste management cost of DKK 1,317 per ton. The producer responsibility organisation is then responsible for distributing these total costs among the 10 producers who introduced the cardboard packaging to the market. According to Annex 14 of the Executive Order, producers in the high fee level must pay an additional 35 percent of their calculated operational costs for waste management for all of their packaging that falls under the red level. This means that the producers who fall under the higher fee level have to pay DKK 1,778 per ton. As a result, the total payment for the five producers in the red level amounts to DKK 8,890.

The remaining DKK 4,280 must then be distributed among the five producers who fall under the green level, meaning they each need to pay DKK 856 per ton.

Producer responsibility organisation:
A possible practical example for calculating the producer responsibility organisation would be:

- Step 1. For producers in the red level, the producer responsibility organisation charges the average waste management cost per ton plus an additional fee of 35 percent. For producers falling under the green level, the producer responsibility organisation charges a fee equal to the average waste management cost.

- Step 2. Once the producer responsibility organization has collected the fees, it can determine the surplus in the scheme, and then refund the surplus, distributed per ton, to the producers who have paid under the green level.

Example 2
A producer responsibility organization have 10 producers who collectively bring 250 tons of glass packaging to the market. In this example, the cost for handling a ton of glass packaging is DKK 1,748. This means that the producer responsibility organization must collect and distribute DKK 1,748 x 250, equating to DKK 437,000, according to the level system.

Out of the 10 producers, three place packaging on the market at the red level and seven place packaging on the market at the green level. For the three producers at the red level, the producer responsibility organization must charge the average waste management cost plus an additional 35 percent. This means that the cost for the three producers at the red level is DKK 2,360 per ton. The excess amount charged from the three producers at the red level is transferred to the group of seven producers at the green level. As a result, these producers are charged less than DKK 1,748, effectively "rewarding" them for meeting the criterion.

Calculation:
Red level price per marketed quantity (kg) = operational list price * 1.35

Table 4 Calculation of graduated price for producers in the red level

Producer	Marketed quantity (tons)	Operational list price (DKK)	Modulated fee for KO	Surplus for distribution (DKK)
1	14	24,472	33,037	8,565
2	12	20,976	28,317,6	7,342
3	37	64,676	87,313	22,637
Sum	63	110,124	148,667	38,543

As can be seen above, there is a profit of DKK 38,543. from the red level to be distributed to green level.

Table 5 Calculation of graduated price for producers in the green level

Producer	Marketed quantity (tons)	Operational list price (DKK)	Modulated fee to KO
4	5	8,740	7,709
5	7.5	13,110	11,564
6	8	13,984	12,335
7	50	87,400	77,094
8	33.5	58,558	51,653
9	48	83,904	74,011
10	35	61,180	53,966
Sum	187	326,876	288,333

As seen in table 4 and table 5, the sum of the modulated prices amounts to: 148,667 + 288,333 = 437,000 kr.

Modulated price/ton for green group is calculated using the following formula:
The sum of operational costs for green group (326,876 DKK) minus profit for distribution (38,543) = 288,333 divided by the sum of marketed quantities in green group (187 tons) = 1,542. This corresponds to the discount that green group must pay less per ton of marketed quantities.

Example 3
A producer responsibility organisation have 10 producers who collectively bring 3,00 ton of rigid plastic to the market. The cost for handling this material category in this example is DKK 4,364 per ton. This means that the producer responsibility organisation must collect and distribute DKK 4,364 x 300 ton, equating to DKK 1,309,200.

Out of the 10 producers, three introduce packaging to the market at the red level, two at the yellow level, and five at the green level. For the three producers at the red level, the producer responsibility organisation charges the standard cost plus an additional 35 percent. This means that the cost for these three producers in the red level will be DKK 5,891 per ton. The excess amount charged to these three producers is transferred to the group of five producers in the green level. As a result, these producers are charged less than DKK 4,364, effectively "rewarding" them for meeting the criterion. The remaining two producers in the yellow level must pay the average waste management cost of DKK 4,364 per ton.

Calculation:
Red level price per marketed quantity (ton) = operational list price * 1.35

Tabel 6 Calculation of price for producers in the red level

Producer	Marketed quantity (tons)	Operational list price (DKK)	Modulated fees for KO (DKK)	Surplus for distribution (DKK)
1	52	226.928	306.353	79.425
2	24	104.736	141.394	36.658
3	74	322.936	435.964	113.028
Sum	150	654.600	883.710	229.110

As seen above, there is a profit of DKK 229,110 from the red level to be distributed to the green level.
Yellow levels price per marketed quantity = operational list price

Table 7 Calculation of price for producers in the yellow level

Producer	Marketed quantity	Operational list price
4	33	144,012
5	22	96,008
SUM	55	240,020

Table 8 Calculation of price for producers in the green level

Producer	Marketed quantity (tons)	Operational list price (DKK)	Modulated fees for KO (DKK)
6	10	43,640	19,523
7	42	183,288	81,997
8	19	82,916	37,094
9	17	74,188	33,189
10	7	30,548	13,666
SUM	95	414,580	185,470

As seen in table 6, table 7 and table 8, the sum of the producers' payments amounts to: DKK 883,710 (red) + DKK 240,020 (yellow) + DKK 185,470 (green) = DKK 1,309,200 Modulated price/ton for green group is calculated using the following formula:

The sum of operational costs for the green level (DKK 414,580) minus the profit for distribution (229,110), divided by the total marketed quantity in the green level (95 ton), equals DKK 1,952 per ton.

5 Appendix: Tables for Design criteria

5.1 Appendix 1: Design requirements for flexible plastics

Main component:

	Green level	Yellow level	Red level
Material	- Greater than or equal to 90% by weight PP single or multi-layer material or - More than or equal to 95% by weight PE single or multi-layer material	- Blend of PE and PP with more than or equal to 90% by weight PE and/or PP	- Biodegradable plastic and/or - All other materials, e.g. mono-PS, multi-layer foils with mixed materials, e.g. PET, PVC, PS, paper
Density	- Density of PE or PP of less than or equal to 1 g/cm3	- Density of PE or PP of less than or equal to 1 g/cm3	- Density of material of more than 1 g/cm3
Colour	- Undyed or - Added colour without carbon black or - Colour that is NIR-sortable	- Undyed or - Added colour without carbon black or - Colour that is NIR-sortable	- Added colour with carbon black content or - Colour that is not NIR-sortable
Barrier	- No barrier Or one or more of the following: - PVOH - SiOx - AlOx - Acrylic - Metallization (0.02-0.05 µm) - EVOH without binder or with compatible binder with less than or equal to 5% by weight of the entire main component	- Other barriers with less than or equal to 5% by weight of the entire main component	- Material with PVC or PVdC and/or - Other barrier with more than 5% by weight of the entire main component
Adhesives for multilayer materials	- Greater than or equal to 90% by weight PP single or multi-layer material or - More than or equal to 95% by weight PE single or multi-layer material	- Blend of PE and PP with more than or equal to 90% by weight PE/PP	- Biodegradable plastic and/or - All other materials, e.g. mono-PS, multi-layer foils with mixed materials, e.g. PET, PVC, PS, paper

Main component and integrated component:

	Green level	Yellow level	Red level
Printing ink for label and foil decoration	- No printing and/or - Printing ink follows EuPIA's list*	- No printing and/or - Printing ink follows EuPIA's list*	- Ink that does not follow EuPIA's list*
Recycled content from post-consumer recycled plastic	- More than or equal to 20 percent by weight of recycled plastic of the total weight of the packaging, excluding contact-sensitive products	- Less than 20 percent by weight of recycled plastic of the total weight of the packaging, excluding contact-sensitive products or - None	

* EuPIA exclusion policy of printing inks and related products: https://www.eupia.org/our-commitment/eupia-exclusion-policy-for-printing-inks-and-related-products/

5.2 Appendix 2: Design requirements for Rigid plastic

Main component:

	Green level	Yellow level	Red level
Material	- Greater than or equal to 95% PP by weight or - Greater than or equal to 99% by weight PE	- Less than or equal to 30% by weight PE in PP main component or - Less than or equal to 5% by weight PP in PE main component	- Biodegradable plastic and/or -All other materials of mono or mixed materials
Density	- Density of PP or PE of less than or equal to 0.97 g/cm3	- Density of PP or PE of less than or equal to 0.97 g/cm3	- Density of material greater than 0.97 g/cm3
Colour	- Undyed or - Added colour without carbon black content or - Colour that is NIR-sortable	- Undyed or - Added colour without carbon black content or - Colour that is NIR-sortable -	- Added colour with carbon black content or - Colour that is not NIR-sortable
Barrier	- No barrier Or one or more of the following: - AlOx - SiOx - EVOH without binder or with compatible binder, less than or equal to 6% by weight of the entire main component	- Other barriers than specified in "green" or "red" and/or -EVOH with compatible binder, of more than 6% by weight of the entire main component	One or more of the following: - ON - PVC - PVdC -EVOH with non-compatible binder

Integrated component:

	Green level	Yellow level	Red level
All	- No integrated component or - Integral component of same material as main component with density of integral component less than 1 g/cm3 and/or - Material of label in PE to PP main component or PP label to PE main component	- Material of integrated component in PE, PP or PE/PP with density less than 1 g/cm3 and/or -Material with a density greater than or equal to 1 g/cm3, e.g. PET, PETG, PLA, PS	- Material of other plastics with density less than 1 g/cm3 and/or - Material with metal or metallization and/or - Material with fibre or paper and/or - Material with PVC and/or -Biodegradable plastic

Main component and integrated component:

	Green level	Yellow level	Red level
Recycled content from post-consumer recycled plastic	-More than or equal to 20 percent by weight of recycled plastic of the total weight of the packaging, excluding contact-sensitive products	- Less than 20 percent by weight of recycled plastic of the total weight of the packaging, excluding contact-sensitive products or -None	

5.3 Appendix 3: Design requirements for foam plastic

Main component:

	Green level	Yellow level	Red level
Material	- More than or equal to 95% by weight EPS, mono EPS possibly. coated with PS or - More than or equal to 95% by weight EPP, mono EPP possibly. coated with PP	- More than or equal to 90% by weight EPS possibly coated with PS or - More than or equal to 90% by weight EPP possibly. coated with PP	- Other foamed materials, mixture or monomaterials e.g. XPS, PUR: PVC and/or -Biodegradable plastics
Additives	- No additives or - Stabilizers and/or - Antioxidants and/or - Lubricants and/or - Peroxides	- No additives or - Stabilizers and/or - Antioxidants and/or - Lubricants and/or - Peroxides	- Mineral fillers and/or - Other additives, e.g. flame retardant, plasticiser and/or - Content that provides bio/oxo/photodegradable properties
Colour	- Undyed or - EPS in white, and EPS may have added graphite (gray colour) or - EPP coloured white, grey, black	- Other colours	
Print colour and degree of coverage	- No added colour or - Printing ink follows EuPIA's list* and/or - Laser marking and/or - Printing ink below 25 percent coverage of outer surface	-Printing ink below 50 percent coverage of outer surface	- Ink that does not follow EuPIA's list* and/or -Printing ink equal to or greater than 50 percent coverage of outer surface

*EuPIA exclusion policy of printing inks and related products: https://www.eupia.org/our-commitment/eupia-exclusion-policy-for-printing-inks-and-related-products/

Integrated component:

	Green level	Yellow level	Red level
All	- No integrated component or - Material is same as main component: EPS (PS) or EPP (PP)	- No integrated component or - Material same as main component: EPS (PS) or EPP (PP) and/or - Label in PP	-Other materials

Main component and integrated component:

	Green level	Yellow level	Red level
Recycled content from post-consumer recycled plastic	-More than or equal to 20 percent by weight of recycled plastic of the total weight of the packaging, excluding contact-sensitive products	- Less than 20 percent by weight of recycled plastic of the total weight of the packaging, excluding contact-sensitive products or - None	

5.4 Appendix 4: Design requirements for Rigid PET

Main component:

	Green level	Yellow level	Red level
Material	-More than or equal to 98% PET by weight	- Greater than or equal to 95% PET by weight or -PET/PE with less than or equal to 10% PE by weight	- PET with other materials, e.g. PVC, PS, aluminium, PP, PETG, PET-GAG, expanded PET and/or -Material that is biodegradable
Additives	- No additives or - Content of silicone surface treatment and/or - Content of anti-blocking master batch and/or - Content of master batch for impact strength modification and/or - Contents of nucleation master batch to control crystal formation	-Content of other additives, e.g. UV stabilizer, AA blockers, optical whitening; oxygen scavengers etc.	-Content that provides bio-, oxo- or photo-degradable properties and/or - Content of nanocomposite
Colour	- Undyed or - Added colour without carbon black or - Colour that is NIR-sortable	- Undyed or - Added colour without carbon black or - Colour that is NIR-sortable	- Added colour with carbon black or - Fluorescent colour or - Metallic colour or -Colour that is not NIR-sortable
Barrier	- No barrier or - Material with SiOx and/or -Material with PET based barrier	- Material with a different barrier than specified in green or red level and/or - Material with oxygen scavenger	- Material with EVOH and/or -Material with PA

Integrated component:

	Green level	Yellow level	Red level
All	- No integrated components or - Lids and other components made of rigid PET and/or - Flexible plastic of PE or PP with a density below 1 g/cm3	- Material with a mixture of PE and PP and/or - Material of flexible PET and/or - Material of foam PET and/or - PET multi-material with and without barrier, e.g. PET/EVOH/PE and/or - Pads made of bubble wrap or absorbent paper	- Other materials with a density greater than or equal to 1 g/cm3 and/or - Material with fibre or paper and/or - Material with metal layer or metallization and/or - Material with silicone and/or - Material with PVC and/or - Material which is biodegradable plastic

Main component and integrated component

	Green level	Yellow level	Red level
Recycled content from post-consumer recycled plastic	- More than or equal to 20 percent by weight of recycled plastic of the total weight of the packaging	- Less than 20 percent by weight of recycled plastic of the total weight of the packaging or - None	

5.5 Appendix 5: Design requirements for Glass

Main component:

	Green level	Red level
Material	- Does not contain ceramics, stone, porcelain, crystal glass, lead glass, quartz, borosilicate glass	- Contains ceramics, stone, porcelain, crystal glass, lead glass, quartz, borosilicate glass
Colour and decoration	- No metallization of glass and - Light transmission greater than or equal to: 10.00 percent at wavelength 400 nm to 780 nm, measured at the darkest point on the glass or - Colour that is NIR-sortable	- Has metallization of glass and/or Light transmittance of less than 10.00 percent at wavelength 400 nm to 780 nm, measured at the darkest point on the glass or - Colour that is not NIR-sortable
Adhesive	- No glue on main component or the integrated component or - Adhesives is water washable	- Adhesives is not water washable

Integrated component:

	Green level	Red level
Label	- No label/sleeve or similar or - A plastic, bast or textile sleeve attached that covers less than or equal to 75% percent of the outer surface of the packaging without a lid, except for product information purposes where specified in other legislation and - The sleeve is shrunk so that the foil does not go under the bottom of the bottle and/or - The label made of fibres or plastic label covers less than or equal to 50 percent of the outer surface of the packaging without a lid, except when specified for product information purposes in other legislation	- Attached a sleeve of plastic, bast or textile that takes up more than 75% percent of the outer surface of the packaging without a lid, except by reference to product information considerations, where it is specified in other legislation and/or - The sleeve is shrunk so that the foil goes under the bottom of the bottle and/or - The fibre or plastic label takes up more than 50 percent of the outer surface of the package without the lid, except when referring to product information considerations where specified in other legislation

5.6 Appendix 6: Design requirements for Cardboard

Main component and integrated component:

	Green level	Red level
Material	- Consists of greater than or equal to 95 percent by weight of fibrous material, of the total weight, where tape does not count. and - Not intentionally added PFAS or mineral oils in the form of either mineral oils with saturated hydrocarbons (MOSH) or mineral oils with aromatic hydrocarbons (MOAH). The requirement does not include addition when using recycled content and - No additives have been intentionally added that make the cardboard difficult to dissolve	- Consists of less than 95% by weight of fiber material, of the total weight, where tape does not count. or - Intentionally added PFAS or mineral oils in the form of either mineral oils with saturated hydrocarbons (MOSH) or mineral oils with aromatic hydrocarbons (MOAH). The requirement does not include addition when using recycled content or - Intentionally added additives that make the cardboard difficult to dissolve
Surface treatment	- Not surface-treated with wax or paraffin	- Surface treated for wet resistance with wax or paraffin

5.7 Appendix 7: Design requirements for Paper

Main component and integrated component:

	Green level	Red level
Material	- Consists of greater than or equal to 95 percent by weight of fibre material, of the total weight, where tape does not count. and - Not intentionally added PFAS or mineral oils in the form of either mineral oils with saturated hydrocarbons (MOSH) or mineral oils with aromatic hydrocarbons (MOAH). The requirement does not include addition when using recycled content and - No additives have been intentionally added that make the paper difficult to dissolve	- Consists of less than 95 percent by weight of fibre material, of the total weight, where tape does not count. or - Intentionally added PFAS or mineral oils in the form of either mineral oils with saturated hydrocarbons (MOSH) or mineral oils with aromatic hydrocarbons (MOAH). The requirement does not include addition when using recycled content or - Intentionally added additives that make the paper difficult to dissolve
Surface treatment	- Not surface treated with wax or paraffin	-Surface treated for wet resistance with wax or paraffin

5.8 Appendix 8: Design requirements for Food and beverage cartons

Main component and integrated component:

	Green level	Yellow level	Red level
Printing inks	- No printing or - Printing ink follows EuPIA´s list*	- No printing or - Printing ink follows EuPIA´s list*	- Printing ink does not follow EuPIA´s list*
Laminates and barrier films	- Laminates and barrier films of plastic contains more than or equal to 90% PE by weight and - Laminates and barrier films of plastic contain less than or equal to 5% PET by weight and - Laminates and barrier films do not contain biodegradable plastic	- Laminates and barrier films of plastic contains more than or equal to 80% PE by weight and - Laminates and barrier films of plastic contain less than or equal to 5% PET by weight and - Laminates and barrier films do not contain biodegradable plastic	- Laminates and barrier films of plastic contain less than 80% PE by weight or - Laminates and barrier films contain more than 5% PET by weight or - Laminates and barrier films contain biodegradable plastic
Cap/lid/closure	- No or - The material is the same as the main component and - Does not contain biodegradable plastic	- Contains greater than or equal to 80% by weight of PE or PP for integral component and - Does not contain biodegradable plastic	- Contains less than 80% by weight PE or PP for integrated component or - Contains biodegradable plastic

* EuPIA exclusion policy of printing inks and related products: https://www.eupia.org/our-commitment/eupia-exclusion-policy-for-printing-inks-and-related-products/

5.9 Appendix 9: Design requirements for Ferrous metals

Main component and integrated component:

	Green level	Red level
Material	- Consists of more than or equal to 90% by weight of ferrous metals, of the total weight and - Does not contain aluminium or aluminium alloy	- Consists of less than 90% by weight of ferrous metals, of the total weight or - Contains aluminium or aluminium alloy

5.10 Appendix 10: Design requirements for Aluminium

Main component:

	Green level	Red level
Format	- Is not an aerosol container	- Is an aerosol container

Main component and integrated component:

	Green level	Red level
Material	- For thick-walled (rigid) aluminium packaging (use of aluminium sheets with a thickness >200 micron) the following applies: the packaging consists of more than or equal to 90 percent aluminium by weight, of the total weight or - For thin-walled (semi-rigid) aluminium packaging (use of aluminium foil with a thickness > 60 micron and < 200 micron) applies: Does the packaging consist of more than or equal to 85% aluminium by weight, of the total weight or - For flexible aluminium foil packaging (use of aluminium foil with a thickness ≤ 60 micron applies: Does the packaging consist of more than or equal to 79% aluminium by weight, of the total weight and - Does not contain ferrous metals or alloy of ferrous metals	- For thick-walled (rigid) aluminium packaging (use of aluminium sheets with a thickness >200 micron) the following applies: the packaging consists of less than 90 percent by weight of aluminium, of the total weight or - For thin-walled (semi-rigid) aluminium packaging (use of aluminium foil with a thickness > 60 micron and < 200 micron) applies: Does the packaging consist of less than 85 percent by weight of aluminium, of the total weight or - For flexible aluminium foil packaging (use of aluminium foil with a thickness ≤ 60 micron applies: Does the packaging consist of less than 79% aluminium by weight, of the total weight or - Contains ferrous metals or alloys of ferrous metals