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COMPOSITE PACKAGING

OPAKOWANIA WIELOMATERIAŁOWE

ABSTRACT: Directive (EU) 2018/852 has modified the definition of composite packaging: packaging made of two or more layers of different materials which cannot be separated by hand and form a single integral unit, consisting of an inner receptacle and an outer enclosure, that is filled, stored, transported and emptied as such. Since January 2022, a change has been introduced in Poland regarding the classification of packaging waste as a recycled mass.

Key words: packaging, composite packaging, packaging waste

STRESZCZENIE: Dyrektywa (UE) 2018/852 wprowadziła modyfikację definicji opakowania wielomateriałowego: opakowanie wykonane co najmniej z dwóch warstw różnych materiałów, które nie mogą być ręcznie oddzielone i tworzą jedną integralną całość składającą się z przestrzeni wewnętrznej i powłoki zewnętrznej, którą napęlnia się, przechowuje, transportuje i opróżnia w takiej formie. W Polsce od stycznia 2022 roku wprowadzona została również zmiana dotycząca zaliczania odpadów opakowaniowych do masy poddanej recyklingowi.

Słowa kluczowe: opakowania, opakowania wielomateriałowe, odpady opakowaniowe

DEFINITION

In Polish legislation, composite packaging is defined in the Act on management of packaging and packaging waste [1]. Until the end of 2021, the conception of „composite packaging” was understood as packaging made of at least two different materials which cannot be separated by hand or by simple mechanical methods. The mentioned definition derived from legal acts of the European Union (Commission Decision 97/129/EC [2], Commission Decision 97/138/EC) [3], published before 2018 to the packaging Directive [4].

In 2018, Directive (EU) 2018/852 [5] was established and introduced modification of the definition of composite packaging, aiming at its detailed specification: *Composite packaging shall mean packaging made of two or more layers of different materials which cannot be separated by hand and form a single integral unit, consisting of an inner receptacle and an outer enclosure, that is filled, stored, transported and emptied as such.*

The discussed definition, as being the translation of the provisions contained in Directive (EU) 2018/852 was intro-

duced to the Act on management of packaging and packaging and is obligatory since January, 1, 2022: *Composite packaging is understood as packaging made of at least two different materials which cannot be separated by hand and form a single integral unit consisting of inner receptacle and an outer enclosure that is filled, stored, transported and emptied as such.*

The phrases such as receptacle and enclosure, as being employed in the translation, may suggest stiff packaging in spite of the fact that many types of composite packaging are flexible. It seems that the translation does not fully reflect the contents of the original document, which specifies that the layers of packaging material constitute the integral unit, consisting of inner space serving for its filling with the contents and the outer space constituting a barrier.

Modification of the conception of composite packaging dating to 2018 has not changed the classification, functioning for many years. The category of composite packaging includes flexible as well as stiff packaging, having the layers made of different packaging materials.



PIC. 1. BAGS MADE OF LAMINATES

TYPES OF COMPOSITE PACKAGING

The packaging materials are those ones considered in Annexes 1 – 6 to the Decision of the European Commission 97/129/EC of 28 January 1997 on establishing the identification system for packaging materials, i.e.:

- plastics, with classification into particular polymers,
- paper and paperboard (solid fibreboard and corrugated board),
- glass with division into colourless, green and brown glass,
- metals: steel and aluminium,
- wood and wood-derived materials,
- textile materials of natural origin (cotton, jute).

Annex 7 to the Decision includes packaging made with the participation of the mentioned above materials and considers them as composites.

In Polish legislation, the combinations of different packaging materials in composite packaging are specified in the regulation concerning the patterns of labelling of packaging [6] and binding since January 2015.

The basic groups of composite packaging include as follows:

- a) packaging made of laminates, obtained by the combination of plastic films and layer of paper, board, aluminium foil, e.g.: LDPE/paper, LDPE/board, PET/Al/LDPE, PET/paper/Al/LDPE, LDPE/texture/Al/LDPE etc., and, also laminates made with the participation of metallised films e.g.: BOPP/BOPPmet, PETmet/PE.

The examples of composite packaging made of flexible laminates are given in Pic. 1.

- b) Coated and laminated paperboard packaging

In relation to the products intended for longer shelf-life period (e.g. UHT treatment), aseptic packaging with the following material composition (Fig. 1) is applied:

- 75% of mass is paper,
- 20% PE-LD,
- 5% aluminium (foil of 6.5 μ thickness).

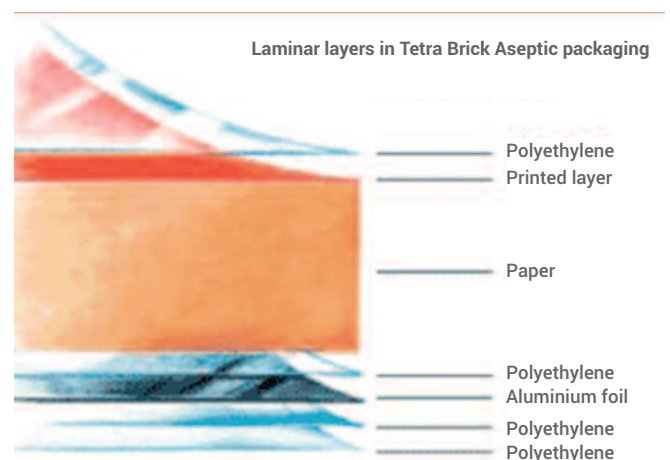


FIG. 1. LAYERS IN LAMINATE

In respect of the pasteurized products that require storage under refrigeration conditions, the packaging made of the following material composition is applied (Pic. 3):

- 80% of mass is paper,
- 20% PE-LD.

- c) Packaging of blister pak and skin pak type which are composed of plastic film layer in combination with layer of paperboard or aluminium film which cannot be separated by hand



PIC. 3. COATED AND LAMINATED PAPERBOARD PACKAGING FOR LIQUID FOOD

Packaging of blister type consists of rigid layer made of plastics (in a form of shaped container) combined with a layer of cardboard or aluminium. On the other hand, packaging of skin pak type is composed of flexible layer of foil, formed on the packaged products by a vacuum method, in combination with the cardboard layer (Pic. 4).

CLASSIFICATION OF PACKAGING WASTE, RESULTING FROM COMPOSITED PACKAGING AS A RECYCLED MASS

Since January, 1, 2022 the regulation on detailed conditions of treating the packaging waste as a recycled mass [7] has

become binding in Poland. The packaging waste generated from composite packaging materials or other packaging, consisting of more than one material are included to the mass of the packaging waste subjected to recycling in respect of mass of each material contained in the mentioned packaging. The condition for treatment of the packaging waste derived from the composite packaging, or other packaging made of more than one material as the mass of packaging waste subjected to recycling, lies in the fact that the mass of each of the remaining materials contained in the mentioned packaging does not exceed 5% of the total mass of the discussed packaging.



PIC. 4. THE EXAMPLES OF COMPOSITE PACKAGING OF BLISTER AND SKIN TYPE WHERE THE LAYERS MADE OF DIFFERENT MATERIALS CANNOT BE SEPARATED

The above mentioned regulation was published in connection with the changes which occurred in 2018 and 2019 [8, 9] in the Commission Decision 2005/270/EC [10] establishing the formats relating to the database system pursuant to Directive 94/62/EC. The mentioned decision modified the formats of the data transfer in conformity with art. 12 of Directive 94/62/EC as well as the principles of calculating, verifying and reporting in respect of the data concerning achieving the targeted recycling levels by the Member States of the European Union. For the purpose of calculation and verification of achieving the targets of Directive 94/62/EC, the composite packaging and other packaging consisting of more than one material shall be calculated and reported in relation to each material, contained in the packaging. The Member States may waive the mentioned requirement if a given material constitutes a small part of packaging unit and, in each case no more than 5% of the total mass of unitary packaging.

SUMMING UP

Modification of the idea of composite packaging dating back to 2018 has not changed the present classification. It has stressed that the layers of different materials in the composite packaging constitute a form of integral unit that is filled, stored, transported and emptied. In the definition, there has been also more precise definition of the inner layers – as a sort of container to be filled with the contents, and the outer layer – as a protection, creating a closing barrier. In the definition, the minimum percentage content of material which could become the basis for elimination of a packaging from the composite packaging as well as the size /surface of the layers (inner and outer) in the composite packaging, has not been precisely defined. The definition of the composite packaging cannot be fully applied in relation to the elements of packaging, characterized by multiplicity of materials.

The introduction of 5-% threshold in the discussed regulation on the matter of detailed conditions for classification of the packaging waste in the recycled mass may be wrong (niewłaściwie) understood by the entrepreneurs and recovery-dealing organizations as approval of additional materials in the packaging. The

package, as containing a dominating material and other packaging materials not exceeding 5% of mass, would be therefore classified as packaging made of dominating material. <<

REFERENCES

- [1] Act of 13 June 2013 on management of packaging and packaging waste (Official Journal of Laws of 2020 item 1114, 2361, of 2021 item 2151) (Poland)
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- [3] Commission Decision 97/138/EC of 3 February 1997 establishing the formats relating to the database system pursuant to European Parliament and Council Directive 94/62/EC on packaging and packaging waste (Official J. of Laws L 052, 22.02. 97)
- [4] Directive of European Parliament and of Council 94/62/EC of 20 December 1994 on packaging and packaging waste (Official J. of Laws L EC L 365 of 31.12. 1994 with amendments)
- [5] Directive of European Parliament and of Council (EC) 2018/852 of 30 May 2018 amending Directive 94/64/EC on packaging and packaging waste (Official J. of EU L 150/141, 14.6. 2018)
- [6] Regulation of the Minister of Environment of 3 September 2014 on patterns of packaging labelling (Official J. of Laws 2014, item 1298) (Poland)
- [7] Regulation of the Minister of Climate and Environment of 17 December 2021 on detailed conditions for classification of the mass of packaging as subjected to recycling (official J. of Laws 2021 item 2365) (Poland)
- [8] Commission Implementing Decision (EU) 2018/896 of 19 June 2018 (Official J. of Laws L 160/6, 25.6. 2018)
- [9] Commission Implementing Decision (EU) 2019/665 of 17 April 2019 (official J. of Laws L 112/26, 26.4. 2001)
- [10] Commission Decision 2005/270/EU of 22 March 2005 establishing the formats relating to the database pursuant to the European Parliament and Council Directive 94/62/EC on packaging and packaging waste (Official J. of Laws L 86/6, 5.4. 2005)

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