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Method for the assessment of environmental schemes for printed products

Version 1 - 2024

Background

Compared to the market of other products, the market for printed products is characterised by a wealth of ecolabelling schemes and environmental certifications available. This phenomenon is the result of a long-term environmental development in the European printing industry, which began in the mid-90s and has continued ever since.

The environmental schemes currently available on the market for printed products are a mix of schemes with different scopes, strategic approaches and functioning. There are also public (official) schemes and private schemes. This makes it difficult for both print buyers and printers to navigate among these different schemes and select the appropriate one(s) which will best reflect the environmental performance of the printed product.

With the large variety of schemes, there is a strong incentive for companies to engage in some kind of race for labels to cover all the environmental demands of customers and society, leading to strategically inappropriate environmental choices, by either prioritising less relevant schemes or multiplying schemes with sometimes overlapping environmental parameters.

With the increased focus on the environmental performance of products for marketing purposes, the market of ecolabels and generally of environmental schemes has become a lucrative market with high commercial interests. There is a strong interest for our industry to allow for the assessment of available environmental schemes in order to provide clarity and transparency as well as to avoid greenwashing and misleading environmental claims on printed products.

Purpose and scope

The purpose of this document is to support both printing companies and their customers in their strategic selection of environmental schemes related to printed products. Being able to assess the different schemes will allow companies to make informed environmental decisions and communicate them in a transparent way.

This will also provide elements for substantiating green claims related to printed products and avoid greenwashing in the industry.

This document defines the environmental parameters following a life-cycle approach, that are relevant to consider when assessing the environmental performance of printed products. For the defined environmental parameters, a classification is established to weigh each parameter in the overall assessment. In addition to the Life Cycle Assessment related environmental parameters, it is considered relevant to include environmental parameters in relation to the content of chemical

substances in the printed products as well as consumption of organic solvents and emissions of volatile organic solvents (VOC). Both environmental parameters – chemical substances and VOC emissions - are included because of their relevance for health and societal focus.

The document does not aim to tell whether an environmental scheme is good or bad, better or worse than another, but it aims at providing a tool to assess whether the scheme is appropriate according to defined parameters that are relevant for the environmental performance of a printed product.

Definitions

Scheme/Environmental scheme:
Generic terminology for ecolabels, environmental certification schemes and environmental standards or criteria.

Printed products:
Generic terminology for graphic products that have undergone a printing process.

Life Cycle Assessment (LCA):
Process of evaluating the effects that a product has on the environment over the entire period of its life.

A. Definition of the significant environmental parameters

A.1. The environmental scheme is specific to the product or activities covered by the scope

It is of decisive importance for the environmental performance of a printed product whether an environmental scheme includes criteria that are specific to the product or the activities that the scope of the scheme covers. Only if the scheme is specific, effective requirements can be set for the parameters that are most environmentally relevant for the product or activities.

A.2. The requirements of the scheme are weighted according to the relevance in the product life cycle

To ensure that a scheme sets requirements for the most environmentally relevant conditions in the manufacturing of printed products, it is crucial that the requirements of the scheme are weighted in relation to the environmental importance of the various criteria throughout the product life cycle.

The user of this Assessment may consider it relevant that the assessed scheme only sets requirements for individual activities or processes in the manufacturing of printed products when these are individually relevant in an LCA (Life Cycle Assessment) context. For example, schemes may only relate to raw materials or to specific services involved in the manufacturing of printed products.

A.3. Production and consumption of paper

LCA studies on printed products[1] show that the production of paper is by far the most significant environmental impact due to the high energy consumption during the production process. This has a decisive impact on the overall climate impact of the product[2]. The importance of paper production is directly linked to the fact that paper or other substrates make up most of the raw materials in the production of most printed products.

With regard to optimising the environmental performance of a printed product, the following environmental parameters should be considered:

a. The amount of energy consumed in the production of paper at the paper mill = Energy efficiency.
b. The amount of paper consumed and paper waste produced in the production of the printed product at the printing company = Material efficiency (Paper waste percentage).

A.4. Energy efficiency in printing

One of the largest LCA studies carried out for printed products shows that after the production and consumption of the paper, the energy consumption during printing is the most important environmental parameter due to the climate impact of the energy consumption[3].

[1] Bvdm Climate Initiative (https://www.bvdm-online.de/bvdm/branchenportal/umwelt-nachhaltigkeit/klimainitiative) and ClimateCalc (https://www.climatecalc.eu/)
[2] Working Report, 24/2006, Ecolabelling of printed matter - part II (https://www2.mst.dk/udgiv/publications/2006/87-7052-173-5/html/helepubl_eng.htm)
[3] Working Report, 24/2006, Ecolabelling of printed matter - part II (https://www2.mst.dk/udgiv/publications/2006/87-7052-173-5/html/helepubl_eng.htm)

When optimising the environmental performance of a printed product, it is therefore crucial to set requirements for the energy consumption when manufacturing the printed product and thus the energy efficiency of the printing company.

A.5. Biodiversity in forest management

The inclusion of the consequences for the land areas in the LCA studies (indirect land use change) shows that biodiversity can have a significant impact on the overall environmental impact when biomass-based material is used in the substrates.[4]

When optimising the environmental performance of a printed product, the scheme should set requirements on documenting that the materials used originate from land areas where requirements are set for biodiversity and use of the land areas.

A.6. Recyclability properties of the product

One of the largest LCA studies carried out for printed products shows that recycling a printed product after end-of-life has a significant impact on the environmental performance of the printed product.[5]

When optimising the environmental performance of a printed product, the scheme should set requirements ensuring that the product is designed and produced to be processed into raw materials for the manufacturing of new products at as high a level as possible.

A.7. Requirements for chemical substances

The use of chemical substances in printed products (i.e. in inks, adhesives…) can potentially lead to occupational health and safety exposure of employees during the manufacturing of the product. In addition, the use of chemical substances may result in health effects on the end-user using the product. The chemical substances included in the product can also have an influence on the extent to which the printed product can be reused for the manufacturing of new products after its end of use. It is therefore appropriate that product-relevant requirements are set for the chemical substances used during the printing process.

A.8. Requirements for emissions of VOC

Production of printed products takes place to some extent by using organic solvents emitting volatile organic compounds (VOC). The use of organic solvents may result in occupational exposure of employees during the manufacturing of the product. In addition, emissions of VOCs can affect the air environment and public health in general, when VOCs are not controlled. It is therefore relevant that requirements are set for the consumption of organic solvents and emission of VOCs when manufacturing printed products.

[4] Publishing Printing and reproduction of recorded media" from Exiobase v.3.3.13b2, with use of Stepwise2006 v1.06 the environmental assessment method.
[5] Working Report, 24/2006, Ecolabelling of printed matter - part II (https://www2.mst.dk/udgiv/publications/2006/87-7052-173-5/html/helepubl_eng.htm)

B. Criteria for classification of environmental parameters

The classification of the environmental parameters is based on four levels applicable to each environmental parameter based on the following criteria:

High	Represents best practice in relation to requirements for the individual environmental parameter. A classification at this level basically requires absolute requirement limits set at a level that ensures performance at a high environmental level.
Medium	Represents a performance that is at a lower level than best practice, but where the requirements are still environmentally relevant and are set at a relevant level. This includes, among other things, requirements where limits have been set for the individual parameters, but where the limits are not absolute (e.g., the possibility to earn points for an overall score of performance).
Low	Represents a performance where there is limited documented environmental impact of the requirements that are being made. This also includes absolute limits set for parameters or at levels that are not of environmental relevance. Self-assessments and environmental management without requirements for reporting or continuous improvement are generally classified as Low.
None	Represents a performance where no requirements have been defined or there is no documented environmental effect of the requirements.

C. Classification of environmental parameters

Below, a classification has been made of the significant environmental parameters defined in section A according to the criteria described in section B.

C.1. The scheme is specific to the product or activities covered by the scope

High	The scheme is specific to the manufacturing of printed products.
Medium	The scheme is specific to the activities covered by the scope of the certification when the activities cover only part of the life cycle of printed products. It is a prerequisite for a medium classification that the covered activities are environmentally relevant to the production of printed products seen in an LCA context with a primary focus on either biodiversity, material efficiency, energy efficiency or recycling properties.
Low	The scheme primarily covers activities that are not environmentally relevant to the manufacturing of printed products according to an LCA approach.
None	The scheme is generic and covers several different product types.

C.2. The requirements of the scheme are weighted according to the relevance in the product life cycle

High	The scheme is life cycle based and the requirements are weighted in the most important areas in relation to the relevance in the product life cycle, where requirements are set for the following parameters: Biodiversity, material efficiency, energy efficiency and recycling properties.
Medium	The scheme is life cycle based, but the requirements are not fully weighted in relation to the relevance in the product life cycle. The classification is medium if parameters other than biodiversity, material efficiency, energy efficiency and recycling properties are given a proportionately greater importance in the form of requirements or the possibility of earning points. The classification is also medium if the standard only includes requirements for three of these parameters.
Low	The scheme is life cycle based but is only weighted to a limited extent in relation to the relevance in the product life cycle. The classification is low if parameters other than biodiversity, material efficiency, energy efficiency and recycling properties are given a proportionately greater importance in the form of requirements or the possibility of earning points. The classification is also low if the standard only includes requirements for one or two of these parameters.
None	The scheme is not life cycle based or does not include requirements in relation to any of the following parameters: Biodiversity, material efficiency, energy efficiency and recycling properties.

C.3.a Production and consumption of paper – Energy efficiency in paper production

High	Absolute limits have been set for energy efficiency at a level relevant to paper production.
Medium	Limits have been set for energy efficiency, at a level relevant to paper production, but the limits are not absolute (e.g., possibility to earn points for an overall score of performance).
Low	Requirements have been set for energy efficiency at a level that does not seem relevant for paper production.
None	There are no established requirements for energy efficiency in paper production.

C.3.b Production and consumption of paper – Material efficiency in printing

High	Absolute limits have been set for material efficiency at a level relevant for graphic production.
Medium	Limits have been set for material efficiency at a level relevant for graphic production, but the limits are not absolute (e.g., possibility to earn points for an overall score of performance).
Low	Requirements have been set for material efficiency at a level that does not seem relevant for graphic production.
None	There are no established requirements for material efficiency in graphic production.

C.4. Energy efficiency in printing

High	Absolute limits have been set for energy efficiency at a level relevant for graphic production.
Medium	Limits have been set for energy efficiency at a level relevant for graphic production, but the limits are not absolute (e.g., possibility to earn points for an overall score of performance).
Low	Requirements have been set for energy efficiency at a level that does not seem relevant for graphic production.
None	There are no established requirements for energy efficiency in graphic production.

C.5. Biodiversity in forest management

High	There is a requirement that all wood-based substrate is covered by a chain of custody certification, which documents that the material originates from recycling or well-managed forestry or other controlled sources where requirements are made for biodiversity via forest standards.
Medium	There is a requirement that at least 70% of the wood-based substrate is covered by a chain of custody certification, which documents that the material originates from recycling or well-managed forestry or other controlled sources where requirements are made for biodiversity via forest standards.
Low	There is a requirement that less than 70% of the wood-based substrate is covered by a chain of custody certification, which documents that the material originates from recycling or well-managed forestry or other controlled sources where demands are made for biodiversity via forest standards.
None	There are no requirements for biodiversity in the standard.

C.6. Recyclability properties of the product

High	There are absolute requirements for the recyclability properties of the product in the form of product-relevant tests that document the recyclability properties.
Medium	Requirements have been set for the recyclability properties of the product in the form of product-relevant tests that document the recyclability properties, but the requirements are not absolute (e.g., possibility to earn points for an overall score of performance).
Low	There are requirements for the design of the product that are relevant to the product's recyclability properties in practice.
None	There are no requirements in the form of product-relevant tests that document the recyclability properties or design requirements that are relevant to the product's recyclability properties in practice.

C.7. Requirements for chemical substances in the product

High	The scheme contains requirements for chemical substances in the product that correspond to the requirements of the REACH Regulation (EC) No 1907/2006) as well as requirements for a maximum content of 0.1% of chemical substances on the Candidate List in accordance with Article 59(10) of the REACH Regulation. In addition, there must be product-specific requirements for the content of chemical substances in the printed product that are stricter than the requirements in the REACH regulation.
Medium	The scheme contains requirements for chemical substances in the product that correspond to the requirements of the REACH Regulation (EC) No 1907/2006) as well as requirements for a maximum content of 0.1% of chemical substances on the Candidate List in accordance with Article 59(10) of the REACH Regulation. In addition, there must be other requirements for the content of chemical substances that are stricter than the requirements in the REACH regulation.
Low	The scheme contains requirements for chemical substances in the product that correspond to the requirements of the REACH Regulation (EC) No 1907/2006) as well as requirements for a maximum content of 0.1% of chemical substances on the Candidate List in accordance with Article 59(10) of the REACH Regulation.
None	The scheme does not contain any requirements for chemical substances in the product or the scheme contains requirements for chemical substances in the product that correspond to the requirements of the REACH Regulation (EC) No 1907/2006).

C.8. Requirements for consumption and emission of VOC

High	Absolute limits have been set for consumption of organic solvents and emissions of VOC at a level relevant for graphic production.
Medium	Limits have been set for consumption of organic solvents and emissions of VOC at a level relevant for graphic production, but the limits are not absolute (e.g., possibility to earn points for an overall score of performance).
Low	Requirements have been set for consumption of organic solvents and emissions of VOC at a level that does not seem relevant for graphic production.
None	There are no established requirements for consumption and emission of VOC in graphic production.