UPSIDE
CREATIVE
SOLUTIONS

ECO DESIGN GUIDELINES FOR PACKAGING

MARCH 2021

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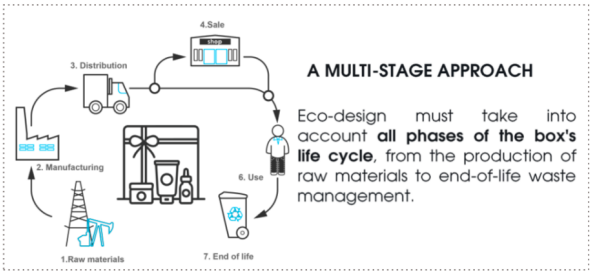
1. KEY PRINCIPE OF ECO DESIGN

The four key principles of eco design: packaging is of course at the heart of the approach, but eco design involves **integrating the entire product system: products and their content, packaging systems, accessories, merchandising** (service items, glorifiers, etc...)

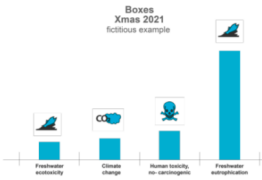


A MULTI-STAGE APPROACH

Eco-design must take into account **all phases of the box's life cycle**, from the production of raw materials to end-of-life waste management.

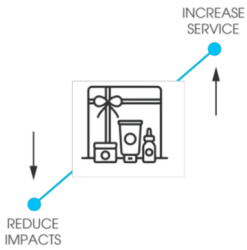
A SYSTEMIC APPROACH

The product is of course at the heart of the approach, but the **packaging system and associated products** (consumables) are also taken into consideration.



A MULTI-CRITERIA APPROACH

The approach considers the multiple environmental impacts generated by the packaging (for example climate change or resources depletion ...), with the aim of addressing **priority issues** and **avoiding possible impact shifts.**



THE CONCEPT OF SERVICE PROVIDED

Eco-design aims to reduce the environmental impacts while **preserving** or **increasing** the **level of service provided to the final user.**

2. ECO DESIGN GUIDELINES

2.1 MATERIALS

HOW TO REDUCE IMPACT OF THE MATERIALS

Choose lighter material & avoid metallic elements

- Reduce paper weight & material, thickness to a minimum, while guaranteening robustness of the packaging: eg honeycomb
- Consider alveolar materials
- Avoid use metal parts in the box such as claps, decorative elements
- Do not use magnets & replace with alternative closing systems (such as stickers, tape)
- Do not ballast the box at least without metals

Avoid Plastic

- 100% cardboard box
- Eliminate the plastic sleeve and change it in cardboard sleeve
- Eliminate traditional plastic blister or fixing part and change it to paper or cardboard fixing part or pulp tray solution
- At least, favor the use of plastic with a high percentage of recycled content and recyclable

Choose exemplary materials from exemplary suppliers

- Choose recycled material references, if possible post – consumer: eg FSC, Recycled (FSC mixed or FSC 100%) certified for cellulosic elements
- Prefer unbleached papers or papers bleached without use of chlorine (TFC) or without use of gaseous or elemental chlorine (PCF)
- Favour supplier located near assembly centers to limit upstream transportation, using local sources whenever possible
- Choose suppliers with ISO 14001, FSC, ISO 26000 certification

Optimize cushion system

- Minimize amount of cushioning
- Use single material cushioning if possible compatible with the main material of the box for recycling
- Choose recycled materials if possible post consumer or bio sourced materials for cushioning
- Combine cushioning & packaging to optimize overall weight

2.2 DESIGN

HOW TO REDUCE IMPACT OF THE DESIGN (whatever the materials are)

Simplify & Lighten design

- Minimize volume, weight & thickness of the box & eventual cushioning
- Eliminate unnecessary components & overpackaging
- Optimize empty spaces in the box
- Avoid use of plastic window & thermoformed shims
- Reduce material thickness
- Use of less dense or alveolar materials
- Work on the center of gravity & the aesthetics of the boxes to avoid the need of ballast

Rethinks existing formats

- Hollow the box to reduce the total weight, working on the rate of offcuts to limit them
- Adjust the box to the dimensions of the products contained
- Protect only fragile areas for example, bottom of the product to ensure the stability of the box
- Consider and "origami" sealing system that limits use of glue: tab, lid, label sealing
- Define optimal dimensions of the boxes to improve palletization

2.3 DECORATION

HOW TO REDUCE IMPACT OF THE DECORATIONS

Limit unnecessary layers & decorated surfaces

- Assume "raw" aspect of material chosen to limit additional decoration
- Consider use of colored cardboard to avoid additional printing
- Limit use of glitter or hologram decors (use glossy decors without metals, multi -color effect)
- Use white as a color in its own right & play contrast to reduce ink coverage
- Identify less exposed areas (underneath at the back with regulatory information) to reduce overall inking
- Do not ink the technical parts (assembly areas, intended to be glued)
- Ensure printing processes that use less ink (offset) on less absorbent substrates

Use less impactful decoration processes & limit impact of printing

- Favour printing rather than hot-stamping, without gilding at least
- Avoid use of metallic inks and prefer metal effect inks without metallic pigments
- Avoid lamination processes with polyurethane
- Prefer embossing over flocking (glues may penalize recyclability)
- Prefer vegetal inks (water based or vegetable oil based) to mineral inks
- Reduce inking rate & number of colors
- Lighten slightly backgrounds loaded with ink, use gradients by playing on typo size or colors

2.4 RECYLCLING

MATERIALS ARE RECYCLABEL IF .....

Flexible packaging is recycled if :

- Packaging is not combined with any barrier/ adhesive/stains (metallic pigment inks, dyes, various plastic, metals, textiles, glass, wood)
- Packaging is not associated with any elements made of wood, metal, glass, plastics, PS, EPS, PVC, pure flexible acrylic glue, metal pigment inks, ceramic, cork, porcelain, crystal
- For the other associated elements, if they are made of LDPE, HDPE, or bio based HDPE, PP or OPP plastic they will be recycled

Rigid plastic packaging made of PET, PE, and PP is recycled if:

- Packaging is made of monoresin or complex PET with a density > 1, the packaging made of PE and PP with a density <1
- Packaging is not associated with any element: single material packaging
- Others plastics are not recycled

Cardboard packaging is recycled if:

- Packaging is made of more than 50% fibrous material and without disruptive substances (PA, polyester, textile, glass, ceramic, crystal porcelain...)
- Other non- fibrous materials associated will be excluded from recycling

2.5 RECYLCLING

HOW TO ENCOURAGE IT

Give instructions to encourage sorting and collection
Promote materials that are easily identifiable as recycling by users and that have a recycling system that is widespread in different countries

Avoid Metalic inks, varnishes, gilding and film coating

Limiting inks quantities & choose inks without bleeding and with low migration to facilitate recyclability

Favour certain colors to facilitate recycling (avoid black plastic)

Encourage use of dark coloring solution validated by COTREP (Technical Committee for the Recyclability of Plastic Packaging)

Optimize glues and adhesives

Choose glues & adhesives that can be eliminated or at least hydro dispersive, avoiding in fragmentable or insoluble glues, in order to improve quality of recycled products and limit impact on process water

Prefer mono material as much as possible

At least, if different materials are used, they must be able to separate easily (lids, cushioning etc.)

Limit quantities of materials that will not be recycled in recycling steam identified by the majority material

Avoid use of biodegradable or compostable materials

Packaging are not intended to end up in the nature and therefore to biodegrade or compost: Avoid misleading the user about potential end of life of the product

“Compostable” or “biodegradable” materials are generally compostable under specific industrial conditions (few domestic solutions)

Integration of these materials into current recycling streams can disrupt recycling

2.6 REUSE

HOW TO ENCOURAGE IT

Promote reuse of the box

- Packaging should be designated to be "useful & reuse" (e.g. jewelry boxes)
- Think about shape & graphics so to allow reuse
- Reusable packaging should not be oversized. Ideally, it has the same environmental impacts compared to disposable packaging
- Reusable packaging must still take in to account the constraints of existing recycling channels
- Avoid the use of magnets and other metals parts even in reusable designs

Create Pedagogic Pack

- Provide end of life instructions to promote collection and sorting
- Encourage more responsibility behavior, particularly in the use of the product
- Use this communication surface to encourage users to reuse or recycle the packaging