



Introduction

There is no doubt that companies now a days are always looking for optimization in their operations.

Printed products play a key role when it comes to efficient use of materials and sustainability.

Allied Print aware of the above, makes this printed material optimization guide, available to its customers.

This guide consists of a Verification Questionnaire and it is designed to provide advice and find opportunities in a broad set of vectors.

The implementation of this referred guide can be done internally by our customers organization or in a coordinated manner with the assistance of professionals from Allied Print. We always encourage our customers to book an assessment with us, in which we visit your facility and follow the steps and guide specified below.

Objective

The objective is to minimize materials usage, review and improve printing/finishing processes, reduction of waste generation and general environmental impact during the entire life cycle of the product.

By doing so, customer will be able to obtain significant savings that will be reflected in business profitability, gain support on sustainability goals achievement, and improve company's reputation as well.

Scope

This guide is focused on the following products:

- Booklets and User Manuals
- Folded Instructive Sheets
- Technical Data Sheets
- Labels
- Tags
- Decals
- Folding Cartons

As well as three layers of packaging to be used in the products mentioned above: primary; secondary (bundle); and terciary (transportation).



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 - 5. Optimization through compostability/biodegradability
 - 6. Others



A. Purposes of packaging and related printed materials

Packaging must fulfill important business roles:

- Protecting product on its travel from factories to the end consumers and reducing the amount of waste result from damage throughout the entire supply chain.
- Providing product information - often required by law - (including the instructional manual or technical literature that goes along with product) for easy and safe handling, as well as correct product identification and use.
- Providing a marketing tool to build the brand and push sales.
- Producing a positive impact on the logistic productivity and cost. Speed, accuracy and efficiency of order picking and delivery are determined by the identification, configuration, and user-friendliness of packages. Likewise, transportation and storage costs depend on the size and density of packages.

B. Fit for purpose

a) Fit for purpose

Maintaining fit to purpose is critical as the benefits gained from packaging optimization can be lost if changes lead to more waste in the supply chain, for example damaged, spoiled, or unsold product. Essential features to consider include:

- Convenience and ease of access, opening and transport by the end user.
- Attractive packaging to improve marketability. (There is no greater waste than a product that is never sold or used.)
- Protection for risks/damages exposure (dirt, dust, heat, humidity, odors, pests, sunlight, and vibrations).
- Prevention of leaks and losses (product spills).
- Protection of the product condition (during storage, distribution, and handling by the customer / consumer).
- Product information (providing the end user with information about handling, use and disposal).

Customer must balance reducing the environmental impact of their packaging with the need of ensuring that all the requirements of fitness for purpose are met.

b) Sub-packaging and over-packaging

Sub-packaging is often much worse for the environment than over-packaging.

- 20% over-packaging means that 20% of the resources required to produce the package are wasted and additional resources needed to store and distribute it will be spent.
- A sub-packaging that results in the product being spoiled or damaged, wastes 100% of the resources used to produce both the packaging itself and its content, and all the resources used to store and distribute it.

c) Resources usage efficiency and comprehensive approach

The final goal in optimization of packaging systems and related printed materials is to minimize resource usage and overall environment impact throughout the product life cycle.



Considering environmental matters into account, should not increase costs, but rather generate savings, if a comprehensive approach is used.

It makes no sense to base packaging choices on a single environmental parameter or process stage because this will often lead to unintended consequences in other parts of the supply chain.

A single focus on reducing weight of a primary packaging can have counterproductive effects, such as:

- An increase in product waste or an overall increase in packaging weight if secondary or tertiary packaging must be escalated to provide the same level of protection.
- Discourage the use of recycled paper and some plastics (because they may need to be thicker, and therefore heavier, to provide the same functionality); and

Similarly, the unintended consequences of focusing only on easily recyclable materials can be:

- More waste for final disposal, even if a high recycling rate is achieved.
- More vehicle movements to deliver the same amount of product if the packaging is bulkier.

Most commonly, it is not possible to optimize all environmental requirements when selecting a material or designing a package for a particular purpose. Effort should be focused on overall optimization rather than pursuing one environmental goal at the expense of the rest.



C. Verification questionnaire

0. General information

Customer	Date
Plant	Contact
Product	(SKU)
Packaging Description	
New /existent packaging	
Participants	
Notes	



	YES/NO	Notes
Convenience and fit for purpose		
1. Has the consumer's ability to access the product within the pack been considered in the design process?		
2. Does the level of information on the package ensure that the consumer is aware of its content and how to open it?		
3. Could an alternative design be used efficiently to minimize the need for tools such as a knife or scissors to open the package?		
4. Are the dimensions, weight, and other characteristics of the pack appropriate for handling, from an ergonomic point of view?		
5. Has the included folded manuals or instructions booklets, a user-friendly unfolding reading sequence?		
6. Are the size of the included manual or instructions booklet, consistent with the product type and dimensions?		
7. Does the package have handling, stacking, recyclability, do not litter, etc. warnings signs?		
8. Does the packaging have warranty seals or antitemper features?		
Production losses		
9. Is the packaging shape designed to minimize waste during production?		
Packaging elimination and minimization		
10. Does the customer / consumer allow more product to be packed in the same box or container?		
11. Does the product really need any packaging (for example, a simple label would suffice), considering that removing packaging could reduce the shelf life of some food products?		
12. Can some layers of packaging be removed (e.g. remove inner bag from cardboard box)?		
13. Can adhesive or tape be replaced by interlocking tabs?		



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14. Can the package information be printed on the package itself (eg inside the box) instead of on a separate booklet?		
Reduction of empty space and fillers		
15. Can the empty space (eg between the cardboard and the inner plastic packaging) be reduced?		
16. Could the use of fillers and padding be reduced by designing a smaller container?		
17. Can air pressure be used to protect the product (for example in a fragile package)?		
Downsizing and downweighing		
18. Could the use of a scaled product photo replace a plastic film window or cut-out window in a package?		
19. Is a double wall or hollow wall container needed specifically for strength / insulation purposes?		
20. Could a single wall corrugated box be used instead of a double wall box?		
21. Could a localized strengthen of a package lead to an overall reduction of material use?		
22. Can the thickness of any part of the packaging be reduced?		
23. Could the strength of the primary packaging be used to reduce or eliminate the need for secondary packaging or vice versa?		
24. Is it possible to reduce the use of material, by using cut-outs or die cuts?		
25. Is it possible provide stiffness by using flutes or ribs?		
26. Is the grade or quality of packaging material over specified?		
27. Are the inks, colors or prints being used, strictly necessary?		
28. Can the use of adhesives, non-water-based inks and tapes be reduced? Are they used in the most efficient way?		
29. Have label sizes been minimized?		
Reduction of energy use		
30. Can be used adhesives with a lower melting point?		
31. Does the use of alternative (water-based) inks, coatings or adhesives have any impact on energy use or drying times?		



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32. Can plastic film be eliminated or replaced with a lower sealing temperature film?		
Efficiency in transport/warehouse		
33. Does the customer use packaging materials on a regular basis so that a Stocking Agreement can be beneficial?		
34. Can the shape of the package be modified to improve the efficiency of the box / palletizing / transportation? (For example, the packages could fit together for a more efficient stacking).		
35. Can the package dimensions be changed to improve pallet utilization?		
36. Is the tertiary packaging design adequate for the efficient use of warehouse and rack systems?		
37. Are transport options such as pallet efficiency and truck height being used to the maximum? Are there efficiencies that can be achieved?		
38. Can empty packaging material be stored efficiently? (folded, stacked, etc.)		
Re-use		
39. Could the packaging be reusable internally for any other function (for example, wastepaper and cardboard can be used as packaging material)?		
40. Could the packaging be used by the consumer for any other function after its main use?		
41. Can discarded packaging be used elsewhere in the plant or by employees?		
42. Can discarded packaging be sold or given away for reuse (instead of recycling)?		
Returnable system		
43. Could a profitable returnable packaging system be established?		
44. Could a returnable packaging plan (eg for corrugated boxes) be established with suppliers?		
45. Could a returnable packaging plan be established with customers (eg for corrugated boxes)?		
46. Could packaging containers be sent back to the suppliers in empty vehicles on return trips?		
Recycled material content		
47. Could be considered / increased the use of recycled material?		
48. Can be specified recycled material containing postconsumer waste, and / or recycled scraps?		



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49. Has been fully considered the use of recycled material for food packaging?		
Use of recycled paper and cardboard		
50. If corrugated cardboard is used, does it contain a high percentage of recycled material? Could this be increased?		
51. When a smooth printing surface is required, can a recycled micro-corrugated cardboard be used?		
52. Does cardboard used contain a high percentage of recycled material?		
53. Would a virgin layer (eg to protect the product from recycled material) allow the use of cardboard with a higher percentage of recycled material?		
54. For food packaging, would a laminated cardboard allow the use of recycled cardboard?		
55. For food packaging, would a plastic inner bag allow the use of recycled cardboard (make sure this does not increase the environmental impact of the packaging used)?		
Use of Plastics		
56. Could any of the plastic components be replaced by cardboard?		
57. Can a blister be replaced with a smaller cardboard package with illustrations/photos or a cutout window?		
58. Can an all-cardboard design be used instead of a cardboard container with plastic/Styrofoam inserts?		
Recyclability		
59. Have the end markets for the materials been considered?		
60. Has proper packaging labeling been developed and implemented to encourage consumers to recycle or compost?		
Minimizing contamination		
61. Has the use of potential contaminants (inks, adhesives, coatings, and labels) been minimized?		
62. Can labels be replaced with information embossed / printed directly on the packaging?		
63. Is it possible to use fasteners easier to remove (for example, paper tape with natural adhesives instead of plastic tape), or some type of fasteners instead of tape		



(make sure this does not increase the impact environmental environment or contaminate the recycling stream)?		
64. On paper and board packaging, can pressure-sensitive and cold seal adhesives be avoided?		
65. How many separate or easily separable components that could end up as trash does the packaging item have and can they be reduced?		
66. Can plastic or aluminum laminates and UV varnishes be removed from paper packaging?		
Biodegradability		
67. Is it possible identify packages made of biodegradable material and separate them so they can be disposed as expected at the end of their life?		
68. Once collected, can biodegradable waste be kept uncontaminated to increase its value?		
69. Is there any residual product in the packaging? If so, is it biodegradable?		
Others		
70. Do the raw materials come from suppliers with proven environmental responsibility?		
71. Is the packaging material made from renewable sources?		

Sources

- Packaging Optimisation for SMEs
The Waste and Resources Action Programme, WARP UK
- A Packaging Optimisation Guide for Food & Drink businesses in Northern Ireland Invest Northern Ireland

