Snapshot on Packaging Recycling in SA & Design for Recycling Guidelines

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Who we are

- Packaging SA is a NPC & represents the interests of its members
- Converters represents 70% of the turnover of packaging produced in South Africa
- Other members include
  - raw material suppliers to the packaging industry,
  - brand owners and retailers
  - PRO’s and
  - other affiliated organizations.

Total Collected Packaging Materials 2017

Collected Packaging Materials – ‘000 Tons 2017			
Packaging Material	**Packaging and Paper Waste Collected Tons**	**Total Industry Tons (including imports, excluding exports)**	**Collected Percentage**
Glass	330.7	758.8	43.6%
Metal	138.9	183.8	75.8%
Paper (Pack & Print)	1282.1	1950.7	65.7%
Plastic Packaging	395.1	867.8	45.5%
Total	2 146.8	3760.6	57.1%

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Design for Recycling

for packaging and paper
in South Africa

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Disclaimer

The information contained in this document is for general guidance only. Any details given are intended as a general recommendation based on the best of our knowledge at the time of publication. It does not necessarily guarantee compliance with the different recycling schemes.

This is by no means a comprehensive list. Users are therefore advised to make their own enquiries to check for specific and up-to-date information. A good starting point would be the material organisations affiliated to RAG.

While every effort has been made to ensure the accuracy of the contents of this publication, Packaging SA can accept no responsibility or liability for any errors or omissions.

Opinions expressed and recommendations provided herein are offered for the purpose of guidance only and should not be considered as legal advice.

The contents of this guide are free to copy without modification. Ensure that you are working with the most recent version.

To access the most recent copies go to: www.packagingsa.co.za

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Introduction

- Adapted from the 2009 publication by Recoup in the UK ‘Plastics packaging:Recyclability by design.”
- Recoup’s permission obtained
  - Adapted to include all materials in the packaging and paper industries, not just plastics.
- Text has been amended for South African relevance
  - Some European solutions are not relevant to us currently
- Extensive consultation: Recycling industry
  - To maximize the value of recyclate

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Roadmap

- Reference book targetted at packaging designers, sustainability managers, line convertors, printers and students.
- Generally the first choice the designer makes is what material is to be used for the primary container or product

  - i.e. should it be glass, paper, metal or plastic and if the latter, what polymer type
- Once this has been decided
  - Go to the index and click on the guideline table for the container or product one has selected (e.g. PET bottle or PE-HD tray.)
  - This takes one to a chart which will define what combinations of labels etc. will work with the material of choice to optimise recycling.

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Current issues

- **Climate change and sustainability -** two of the biggest issues facing society today
- To reduce the *environmental impact* of products and services through their whole life cycle - Increasingly important for companies
- Companies failing to address environmental performance in product design and development will find it increasingly difficult to *compete* in the global market.
- Globally: *product stewardship* or EPR- has become the requirement for producers.
- The Waste Act makes this a *legal* requirement for all

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Waste Act

The Waste Act was promulgated in South Africa in 2008.

It defines the waste hierarchy which is:

The Minister does have the power to declare any waste which may be problematic a priority waste. In this instance the Minister will decide what to do with it. The material could be banned, a minimum recycling level regulated or a deposit enforced on the container etc.

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DEA Packaging Guidelines

- DEA in the process of developing guidelines
- Engaging with PSA
- Working committee established
- Will use PSA guidelines as the benchmark
- Will be legislated

Rationale for the Guidelines

- Discarded packaging can be visible litter, particularly in the developing world
- Political pressure continues to be applied to packaging in the form of legislation worldwide
- Recycling is seen by many as the most important recovery route and therefore one which should take precedence
- Following these guidelines will at a minimum provide an important contribution to help you ensure
  - That your packaging is compliant with relevant legislation/agreements,
  - Recycling costs are minimized and that
  - Societal expectations and your company practices are matched in the area of packaging recycling.

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Rationale for the Guidelines

- Demanding societal expectations on business
- With the growing awareness of the importance of sustainable development, the environmental impact associated with companies is under ever more scrutiny.
- Packaging has a negative perception with consumers and environmentalists.
- Perceived to be a waste of resources and a significant contributor to the growing levels of waste, particularly litter
- In both cases the perception is not factual as packaging saves far more than it wastes
- In SA P&P accounts for < 6% of general waste to landfill.

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Considerations during development

- It is recognised that the recycling of packaging is not always the most environmental or economically sound option and thus the intention is not necessarily to make every piece of packaging recyclable
- Equally this document does not attempt to imply in any way which packaging is superior from an environmental perspective. It just helps to design for optimal recycling
- Packaging is an essential component of the final product and thus should contribute to an overall reduction in the environmental impact of the total product offering.
- It should not therefore be considered or measured as a separate entity.

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Importance of recycling

There are four main reasons why we should increase our recycling rates of all materials (not just packaging) in SA

- Job creation.
  - The mechanical activity of recycling itself is not a big job creator.
  - Collection of waste and separation into the waste steams is estimated to create employment for some 80 000 people in SA .
- Products made from recycled material have a considerably lower carbon footprint than those produced from virgin materials.
  - Using paper as an example, recycling extends the pivotal carbon storage role that paper plays.
- Saves scarce resources enabling use of raw material that would otherwise be landfilled.
- Extends the lives of landfill.

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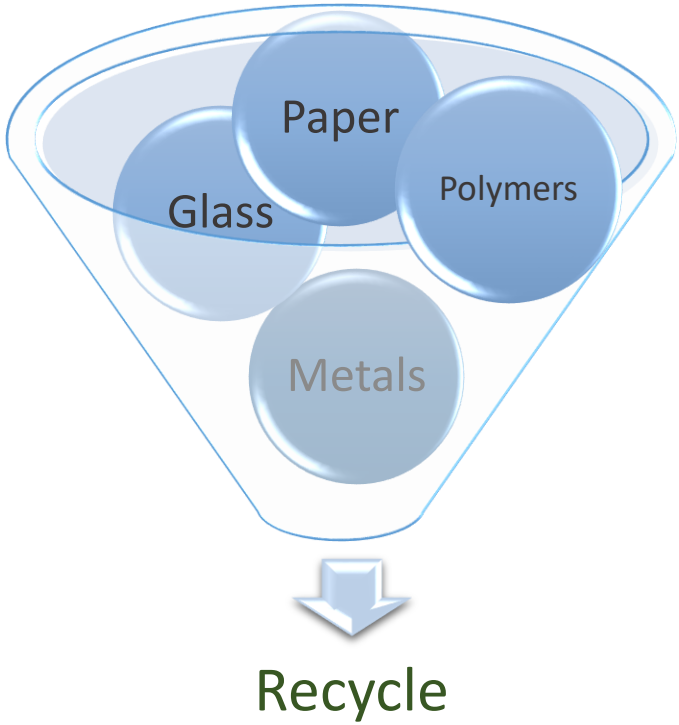
Recycled Content

- Some believe the solution is to regulate a high recycled content into packaging.
- This is neither practical nor possible. There are practical limits to recycling for most packaging materials
- The ideal is thus to optimise the recycled content in a package and then actively support the development of other products for the used packaging where this makes sense.



Packaging guidelines-principles

- In an ideal world, use of mono materials or mixed materials of the same type is the preferred choice from a recycler's point of view
- Accepted that to provide technical properties needed and to satisfy user needs
  - Sometimes a combination of different types of material is required
  - The impact of these on the recycling of the primary material is covered in section four of the document
- For food contact applications
  - Additional specific requirements of traceability,
  - This guarantees the use of qualified processes and producer responsibility for recyclates would
  - Ensure that specifiers use only food -approved additives to maintain the potential for the recyclate to be subsequently used in food applications

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Key Design Message

- For existing packaging
  - Need to review one's current portfolio against these recycling guidelines
  - Highlight any aspects where the design could be improved and
  - Implement changes as soon as possible, as the opportunity arises

- For new packaging
  - Need to integrate these guidelines into the design process at the start, to minimize costs and maximize the opportunity for compliance

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Cost Implications

- Adoption of good eco-design practice should not result in an on-cost
  - Provided that these aspects are considered along with the many other business factors at the start of the design process.
- Conversely if environmental factors are only considered at the end of the design process, then
  - Any changes necessary are likely to be costly in terms of both money and project delays. In short it may cost if you don’t.

Packaging guidelines

- The guidelines have been compiled to help *maximize the opportunity* for packaging and paper to be mechanically recycled without unnecessarily restricting material choice and to help maximize the value of the post-use material.
- It is recognised that in certain instances it is desirable to use *multilayer materials* for barrier properties etc. Many of these are currently not recyclable. It is important that the efforts of the Multilayer forum are continued to develop markets for this used packaging.
- *Matrices summarizing* material compatibilities are provided within each material specific guideline in section four.

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Product residues

- Product residue in discarded packs which are both an unnecessary waste and a contaminant for the recycler, should be minimised as far as possible.
- To help ensure packs are emptied, packaging designers should consider what good design features can be incorporated to aid the emptying of packs.
  - Design the pack with a wide neck.
  - Avoid sharp corners where product residue has a tendency to collect.
  - Consider using a pack that can be stood inverted to ease emptying.
  - Investigate use of non-stick additives in the pack or product or smooth surfaces to reduce the cling of contents to the container to ease emptying.Such additives should not however affect the ultimate recyclability of the pack.

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Colour

- Impacts on almost all packaging and paper recycling but the effects differ: Covere in section four according to each material

Labels

- Use of a label or sleeve offers the opportunity to colour and decorate the surface of the container to a very high percentage whilst avoiding colour contamination of the main material. This helps maximize the value of the recycled material. Covered in detail in section 4.
- Compatibility of the label with the package: is very important and is covered under each material stream.

Other components

- There may be requests from retailers for RFID's (Radio Frequency Identification Devices) to be applied to packaging. Whilst these tags offer potential logistics and other benefits, they are in general undesirable from a recycling perspective at present as the adhesives and /or metals can reduce efficiencies and/or contaminate the recycling stream.

Glues

Adhesives

Ink

Seals

Attachments -metal

Residual content

Lamination polycoat wax

Wet strength additives

Sleeves

Printing

Labels

Other

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Material specific guidelines

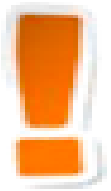
- These are general guidelines that apply to all materials used for packaging.
- These material specific guidelines complement the general guidelines and should be used in conjunction with them where appropriate.
- In the unlikely event that the general and specific guidelines appear contradictory, the material specific guidelines should take precedence.
- The compatibility matrices contained in the material specific guidelines are divided into three columns, namely:
- **YES | CONDITIONAL | NO**

YES

Generally the materials used in the packaging are compatible with or separable from the main material and is acceptable in industrialised recycling processes in large volumes and the recyclate thus has the highest value it can get.

It is collected nationally.

In certain circumstances the authors are aware of new market development. We have included these developments (which will in the next 12 months, result in a material increase in national demand for the recyclate) in the green section. If that does not materialise the guidelines will be amended.



CONDITIONAL

Use of material could cause recycling issues if used in large volumes. Under certain specific conditions the material may be recyclable, but this would need to be confirmed with the appropriate recycling organisations and/or recyclers.

In this instance the inclusion of the material will reduce the value of the used packaging or paper as further separation processes may be necessary.

NO

Material is generally not compatible with or separable from the main material in current industrialised recycling processes and will therefore cause severe recycling issues / cause rejection of recyclate if present even at low volumes.

It may currently be exported in small quantities.

Material specific guidelines

- The guidelines allow you to maximize the opportunity for your packs to be mechanically recycled in SA
- If you select the green option you can mark your packaging as fully recyclable.
- Accepting these guidelines at the start of the design phase will ensure unnecessary difficulties are avoided and hence unwanted project delays and associated on - costs prevented.

Wrap up

- The design of packaging is a complex process and is often a key element of product change/ new product introduction. If environmental and regulatory assessments are included with the wide range of inputs that have to be taken into account at the start of a project they can become part of the process of maximising the product opportunity.
- Where environmental considerations are an afterthought issues are invariably more difficult to resolve and can lead to significant on-costs and serious time delays.
- It is recommended that companies adopt a new product innovation process that automatically includes an environmental assessment.

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