



THE GOLDEN DESIGN RULES FOR PLASTIC PACKAGING



Canadian Guidance

Version 1 - To be reviewed and updated periodically

Disclaimer: This document was produced by the Canada Plastics Pact, not The Consumer Goods Forum. All information provided in the document is for guidance only and may vary across packaging applications. Companies are recommended not to rely solely on the information in this document to make packaging design decisions or on voluntarily signing up to the Golden Design Rules.

What is Canadian Guidance to the Golden Design Rules from The Consumer Goods Forum?

This Canadian Guidance was developed through broad consultation in Canada from May-Dec 2021 with resin makers, converters, producers, retailers, waste management firms, recyclers and non-profit associations and NGOs across the plastics packaging ecosystem. This work was led by the **Redesigning Packaging for Circularity Working Group of the Canada Plastics Pact**, with close coordination with [The Consumer Goods Forum Plastic Waste Coalition of Action](#). The specific aim was to “sit atop” the Golden Design Rules (rather than modifying those rules) to maximize their impact and relevance in the Canadian context. Alongside the GDRs and the technical guidance, this document serves as a guide for Canadian companies that are aligning packaging design and/or making voluntary commitments to the GDRs. This document is presented as **Version 1**, intended to be reviewed and updated periodically.

Identifying possible **exceptions** where...

- a) The existing GDR isn't solving a problem
- b) The existing GDR will cause a problem

AND

Clarifying these for a Canadian context, particularly where they call for regional design guidelines.



While ensuring the principles of the GDRs are adhered:

- 1) Simplification
- 2) Harmonization
- 3) Increasing material value
- 4) Lowering management costs
- 5) Focusing on areas of control by brands

There are 3 documents in the full “GDR package” for Canada

Summary 9 Golden Design Rules -

Global document published on
the CGF website and on the

[Canadian GDR website](#)



“Fact Pack” of technical guidance

Global document published on

the [Canadian GDR website](#)



Canadian Guidance

This document, also published on

the [Canadian GDR website](#)



THE FULL SET OF 9 GOLDEN DESIGN RULES

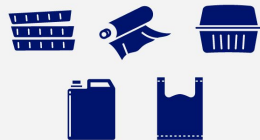
1 INCREASE RECYCLING VALUE IN PET BOTTLES

Eliminate pigments and use recycling-friendly labels



2 REMOVE PROBLEMATIC ELEMENTS

Eliminate the use of carbon black, PVC and PVDC, EPS and PS, PETG in rigids, and oxo-degradables



3 ELIMINATE EXCESS HEADSPACE

Ensure a maximum of 30% headspace in flexible packaging



4 REDUCE PLASTIC OVERWRAPS

Eliminate unnecessary overwraps



5 INCREASE RECYCLING VALUE IN PET TRAYS

Use clear, mono-material PET and recycling-friendly labels and sleeves



6 INCREASE RECYCLING VALUE IN FLEXIBLE PACKAGING

Use mono-material plastic for flexible packaging



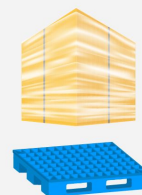
7 INCREASE RECYCLING VALUE IN RIGID HDPE AND PP

Use recycling-friendly labels, sleeves and closures



8 REDUCE VIRGIN PLASTIC IN B2B PACKAGING

Eliminate unnecessary plastic, use recycled content or switch to reuse models



9 USE ON-PACK RECYCLING INSTRUCTIONS

Guide consumers with recycling or reuse instructions on packaging



THESE TIMEBOUND (LATEST 2025) DESIGN CHANGES WILL TACKLE KEY SYSTEM OBJECTIVES

Objective

Ⓐ Eliminate problematic or unnecessary packaging

Ⓑ Increase recycling value for packaging types that are recycled at scale in today's recycling system

Ⓒ Increase recycling value in future recycling system(s) for packaging types not recycled at scale today¹

Ⓓ Improve environmental performance of B2B packaging

Ⓔ Improve consumer communications

Golden Design Rules

Eliminate problematic elements from plastic packaging

Eliminate excess headspace

Reduce plastic overwraps

Increase recycling value in PET

Increase recycling value in rigid HDPE and PP

Increase recycling value in PET trays

Increase recycling value in consumer flexible packaging

Reduce virgin plastic in B2B packaging

Use on-pack recycling instructions

¹ For packaging formats / applications not recycled at scale today, Golden Design Rules have been developed to increase the value of materials and reduce contamination in potential future recycling system(s). As these systems are not yet established at scale, following such Golden Design Rules does not necessarily mean the packaging is defined as recyclable as per EMF definition or other internationally accepted definitions of recyclability.

How this document is structured

Each rule is presented as written in the GDR Summary document (from The Consumer Goods Forum Plastic Waste Coalition of Action), and then followed by the Canadian Guidance and any rationale and/or scope of application.

COMMITMENT*: GOLDEN DESIGN RULE 1

Ⓑ Increase recycling value for packaging types that are recycled at scale in today's recycling system

① Increase recycling value in PET

- a) Use transparent and uncoloured PET (preferred), or transparent blue or green in all PET bottles¹
- b) Ensure material choice, adhesive choice and size of sleeve or label is not problematic for recycling²

* These are voluntary independent commitments by individual companies

Notes: 1) With a minimum L value of 40; 2) Including phase out of PETG and PLA labels/sleeves, non-water soluble/dispersible adhesives and sleeves that cover more than 75% of bottle (unless proven not to limit the recyclability of the product)

CANADIAN GUIDANCE: Increase recycling value in PET

Guidance

- Only use liners and barrier layers that are aligned with [APR Design Guide](#) and the remainder of the Golden Design Rules (i.e. oxo-degradables).
- For closures, ensure material choice, liners and seals are not problematic for recycling.¹
- Eliminate full bottle sleeves unless PET [aligned with GDR 2 on PET-G].

Rationale

- Seeing more liners/barriers on the market in packaging (in particular nylon) that are detrimental to the recycling process. Added guidance makes clear what is and isn't acceptable to increase recycling value in PET.
- Ensuring guidance on closures is consistent with Golden Design Rule #7.

1 Including phase out of silicone valves, and PVC and silicone seals; PS and PVC; and steel and aluminium caps. Closures should not lead to the misdetection of the packaging and misdirection to waste.

2 COMMITMENT*: GOLDEN DESIGN RULE 2

Ⓐ Eliminate problematic or unnecessary packaging

② Remove
problematic
elements from
plastic

- a) No undetectable¹ carbon black
- b) No PVC or PVDC
- c) No EPS or PS
- d) No PETG in rigid plastic packaging
- e) No oxo-degradable

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2

CANADIAN GUIDANCE: Remove problematic elements from plastic packaging

a

no undetectable carbon black

Guidance

- To align with this rule, move to additive colourant that makes black detectable by existing automated sorting technology in Canada.
- Evolution of EPR programs is changing sorting technology in the years ahead. This will be observed and **this guidance updated accordingly by the end of 2023.**

Future considerations

- Longer-term, the adoption of Digimarc or similar type onpack digital watermarking could dramatically change sorting technology to increase capture of plastics for recycling (again to be assessed in future versions of this guidance).

Rationale

- While black pigmented plastics are desirable for some recyclers with strong end markets, sorting undetectable black involves large costs for MRFs, generating a mixed grade of plastic limiting ability to maximize value of stream.

2

CANADIAN GUIDANCE: Remove problematic elements from plastic packaging

c

no eps or ps

Guidance

- Considerable investment in collection and recycling technologies for PS is underway, and the handling of non-curbside applications, such as restaurant containers, is evolving (particularly in Quebec). **Should the collection/recycling performance of this be proven at-scale between now and end of 2023**, the Canadian guidance could have an exception to this rule.
- Where there is a viable alternative, should aim to remove EPS or PS from packaging portfolio in alignment with this golden design rule. This should be done with some assessment of net environmental impact (LCA or other).

Rationale

- Current recycling system economics are not favourable for PS (1.5-2X net cost vs. other rigids), and there are considerable collection challenges.
- At the same time, there are some applications with poor alternatives, and investments in PS collection/recycling technologies have not had the chance to prove themselves out at-scale.

2

CANADIAN GUIDANCE: Remove problematic elements from plastic packaging

e

no oxo-degradable

Guidance

- Oxo-degradable packaging **should not** be confused with certified compostable packaging¹, as their biodegradation takes too long and plastic fragments can remain in the compost. Canadian packaging should be designed to **remove any oxo-degradable plastics** consistent with [recommendations from the Ellen MacArthur Foundation](#).

Rationale

- There is some confusion in the market between oxo-degradables and certified compostables, the latter which are consistent with circular economy principles in specific applications.

1 Businesses would be advised to focus on recyclable plastics (#1, #2, #4, and #5), where applications warrant, while a national consensus on certified compostable plastics and infrastructure is being established.

2

CANADIAN GUIDANCE: Remove problematic elements from plastic packaging

f

limit the use of additives **NEW for Canada**

Guidance

- **Limit all additives** other than those proven to be non-problematic¹

Rationale

- Additives increase complication in extracting valuable resins for recycling (for example in changing the density of certain resins and therefore the sink/float separation process), and some can even serve to render otherwise recyclable materials non-recyclable.

Scope of application

- This rule applies to all packaging for the consumer market

¹ Non-problematic only if they comply with resin-specific [APR Design Guidance](#) or have received [APR Critical Guidance Recognition](#).

3 COMMITMENT*: GOLDEN DESIGN RULE 3

Ⓐ Eliminate problematic or unnecessary packaging

3 Eliminate excess headspace

Eliminate excess headspace for all flexible pack types, such that the maximum headspace is 30% or less across the following product categories:

Cleaning products, confectionary, dry groceries, frozen foods & ice-cream, health & wellness, personal & baby care, pet food, produce & fresh food, shelf stable foods, water & beverages

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CANADIAN GUIDANCE: Eliminate excess headspace

Guidance

- **Eliminate excess headspace for all flexible pack types, such that the maximum headspace is 30% or less across the product categories in the global Golden Design Rule.**
- **Ensure alignment with Canadian regulations on Headspace (“Slack-fill”):**
 - The Consumer Packaging and Labelling Act, Safe Food for Canadians Act, and Food and Drugs Act, each prohibit pre-packaged products from being sold, advertised or imported into Canada that have been manufactured, constructed, filled or displayed in such a manner **that a consumer might reasonably be misled with respect to the quantity of the product.**
 - If the product justifiably requires extra space within the container and a statement explaining the purpose of the extra space is **declared on the label.**
 - Both the Competition Bureau and the Canadian Food Inspection Agency (CFIA) enforce regulations related to slack-fill. Fines range from \$5,000 - \$250,000 with potential for imprisonment for up to three years.
- **Rigid packaging headspace** is an issue that is not covered in the Golden Design Rules, but **should be minimized** as much as possible. Future versions of this Canadian guidance will propose detailed methodology for measuring and minimizing headspace in rigid packaging.

Rationale

- Unnecessary headspace is essentially ‘packaging air’, which is as true for rigid packaging as for flexible packaging.
- By eliminating excess headspace the absolute amount of plastic being placed on the market is reduced (along with demand for virgin plastic).
- Cost savings in packaging material and transportation can also be achieved.

4 COMMITMENT*: GOLDEN DESIGN RULE 4

Ⓐ Eliminate problematic or unnecessary packaging

④

Reduce
plastic
overwraps

Reduce plastic overwraps by only using them when “necessary” (as defined by the developed guideline)

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CANADIAN GUIDANCE: Reduce plastic overwraps

Guidance

- Design and materials for overwraps should be consistent with all other Golden Design Rules, in particular Golden Design Rule 6 “Increase recycling value in flexible consumer packaging”, and [APR Design Guidance](#).
- Technical guidelines on when overwraps are necessary provided in the full Golden Design Rules technical guidance document, along with guidance on identifying alternatives.

Rationale

- Overwraps are flexible packaging that come along with all of the challenges of sorting and recycling. As such, they should be consistent with the same design rules of other flexible packaging.

5 COMMITMENT*: GOLDEN DESIGN RULE 5

© Increase recycling value in future recycling system(s) for packaging types not recycled at scale today

Increase recycling value for PET thermoformed trays and other pet thermoformed packaging

5

For PET thermoformed trays and other PET thermoformed packaging:

1. Regional design guidelines to fit with existing recycling programs¹ shall be met wherever possible.
2. For packaging that is not accepted by existing recycling programs, and where there is a clear pathway for a future recycling system by 2025², the following requirements apply:
 - a) Use transparent and uncoloured (preferred), or transparent blue or green PET³
 - b) Ensure material choice, adhesive choice, inks and size of sleeve or label is not problematic for recycling⁴
 - c) Use only mono-material PET⁵
 - d) Use minimal or moderate direct printing⁶
 - e) Ensure material choice and adhesive choice of lidding films, inserts or other components is not problematic for recycling⁷

¹Recycling programs can differ significantly in development in different regions, so companies are recommended to check regional advice or guidelines such as those provided by APR in the US. Signatories should use the exceptions reporting process to record cases where they have followed regional design guidelines instead of the Golden Design Rules.

²As accepted by industry associations and multi-stakeholder value-chain initiatives such as RecyClass/PetCore and Plastics Pacts and targeting recycling rates of >30%.

³With an L-value of 40; Do not use fillers that affect clarity; coatings should not lead to misdetection of the packaging and misdirection to waste.

⁴Including phase out of paper labels and PETG, PVC and PLA labels/sleeves, and non-water soluble/dispersible adhesives. Labels/sleeves should not lead to misdetection of the packaging and misdirection to waste.

⁵Including minimum 95% PET content with an intrinsic viscosity that is suitable for the recycling program in region. Do not use materials that have a negative impact on rPET clarity.

⁶E.g. production date or expiry date; Where additional printing is necessary, use of labels is preferred. If this is not possible, use only inks that do not bleed.

⁷Lidding films, inserts and other components should not lead to the misdetection of the main packaging, and if using non-PET polymers, density should be <1g/cm³.

CANADIAN GUIDANCE: Increase recycling value for PET thermoformed trays and other PET thermoformed packaging

Guidance

- There are no regional design guidelines for the Canadian recycling system as referenced by this rule.

Future considerations

- **Crystallizable PET (cPET) should be evaluated in 2023** based on how sortation technology and systems evolve.

Added context

- Infrastructure investments, using newly available technology (enabled through new Extended Producer Responsibility regulations across Canada in the coming years), to sort bottles from thermoforms at MRFs will increase material value.

6 COMMITMENT*: GOLDEN DESIGN RULE 6

© Increase recycling value in future recycling system(s) for packaging types not recycled at scale today

6 Increase recycling value in flexible consumer packaging

For flexible consumer packaging made mostly from plastic¹:

1. Regional design guidelines to fit with existing recycling programs² shall be met wherever possible.
2. For packaging that is not accepted by existing recycling programs, and where there is a clear pathway for a future recycling system by 2025³, the following requirements apply:
 - a) Maximize polyolefin content:
 - Preferably >90% mono PE, or >90% mono PP
 - Minimum either >80% mono PE, >80% mono PP or >80% mixed polyolefins
 - b) Density <1 g/cm³
 - c) Each barrier layer should not exceed 5% of the total packaging structure weight ⁴
 - d) No PVC, PVDC, fibres, aluminium foil, PET

¹ 'Mostly from plastic' defined as packaging which is > 50% plastic (based on EU recognised definition of a 'predominant' material). This rule does not cover compostable plastic packaging that meets accepted certification standards for compostability.

² Recycling programs are at different stages of development in different regions, so companies are recommended to check regional advice or guidelines such as those provided by APR in the US. Signatories should use the exceptions reporting process to record cases where they have followed regional design guidelines instead of the Golden Design Rules.

³ As accepted by industry associations and multi-stakeholder value-chain initiatives such as CEFLEX and Plastics Pacts and targeting recycling rates of > 30%.

⁴ Only use barrier layers and barrier coatings proven not to limit the recyclability of the packaging. AlOx, SiOx, EVOH and PVOH are recommended. Excess outer metallization (as a barrier or for decoration) could lead to misdetection of the packaging and misdirection to waste.

CANADIAN GUIDANCE: Increase recycling value in flexible consumer packaging

Guidance

- Based on criteria from the Competition Bureau Canada, only HDPE/LDPE non-laminated films and bags exceed 50% access to recycling in Canada. As such, those are preferred wherever possible for packaging design choices.
- Rather than all polyolefin content, design choices should strongly preference PE in the Canadian market (vs PP or mixed polyolefins):
 - Preferably >95% mono PE
 - Minimum >90% mono PE
- Only use barriers and additives in accordance with [APR Design Guide on PE films](#).
- This rule states that for a packaging types where there is not a clear pathway to a recycling system by 2025, this rule is not required to be followed--there may be limited instances where this is the case in Canada (e.g. PVC meat tray overwrap). However, this should not limit R&D in packaging alternatives, nor the development of advanced recycling technologies. The Canada Plastics Pact commits to revisiting the technology landscape in 2023 and updating this guidance accordingly.

Rationale

- Existing recycling programs across Canada have limited acceptance of flexible pouch packaging.
- Based on information from recyclers in the North American market, anything >10% non-PE greatly reduces value today, and it's unclear that will change before 2025.
- Innovations are going to be required for some food service items, and alternatives are only in early R&D.
- Advanced recycling may allow different material specifications (e.g. metalization of films).

7 COMMITMENT*: GOLDEN DESIGN RULE 7

Ⓑ Increase recycling value for packaging types that are recycled at scale in today's recycling system

7 Increase recycling value in rigid hdpe and pp

For all rigid HDPE and PP packaging:

- a) For all labels, ensure material choice, adhesive choice, inks and size is not problematic for recycling ¹
- b) Use minimal or moderate direct printing ²
- c) For closures, ensure material choice, liners and seals are not problematic for recycling ³
- d) Do not use fillers that increase the density of the packaging to $>1\text{g/cm}^3$

¹ Including phase out of paper labels, and PET, PETG, PLA and PVC labels/sleeves; and non-water soluble/dispersible adhesives. Labels/sleeves should not lead to misdetection of the packaging and misdirection to waste. For in-mould labelling use only polyolefins.

² E.g. production or expiry date. Where additional printing is necessary, use of labels is preferred. If this is not possible, use only inks that do not bleed or which are proven not to limit recyclability.

³ Including phase out of silicone valves, and PVC and silicone seals; PS and PVC; and steel and aluminium caps. Closures should not lead to the misdetection of the packaging and misdirection to waste.

7

CANADIAN GUIDANCE: Increase recycling value in rigid HDPE and PP

No specific Canadian guidance.

8 COMMITMENT*: GOLDEN DESIGN RULE 8

Ⓢ Improve environmental performance of B2B packaging

8 Reduce virgin plastic use in business-to-business plastic packaging

Reduce the use of virgin plastic in business-business (B2B) plastic packaging¹ in a way that is environmentally beneficial by:

- a) Eliminating unnecessary plastic (defined as unnecessary if it can be removed without compromising supply chain/operational efficiencies)
- b) Using post-consumer recycled content (where plastic is necessary)
- c) Switching to reuse models or alternative materials

¹ The intended scope of this rule is to cover all plastic packaging that does not reach the consumer, as distinct from rule 4 on overwraps. This means all packaging that does not end up either in the household waste stream or is disposed of by consumers during consumption outside the home

CANADIAN GUIDANCE: Reduce virgin plastic use in business-to-business plastic packaging

Guidance

- In alignment with the waste hierarchy, companies should first consider if the packaging can be eliminated altogether (i.e. reduction at source).
- Where plastic is necessary, reuse models should be used. These are already used at scale for this segment of packaging.
- Where plastic is being used, recycled content should be maximized (subject to food safety guidelines).
- To determine if an alternative is environmentally net-beneficial, LCA data may be necessary. Companies should look at GHG emissions impact as well as other environmental factors. Health and safety considerations of alternatives should also be considered.

(Adapted from global FAQ on this rule.)

Rationale

- In contemplating changes, businesses should take care to understand the net impact of reuse or alternative materials choices in order to maximize environmental benefit.



Use On-pack recycling instructions

- Include recycling or reuse instructions on consumer plastic packaging¹

¹ Instructions should reflect the local conditions. Companies should continue to work at the local level to determine the most accurate way to reflect this in each country

CANADIAN GUIDANCE: Use on-pack recycling instructions

Guidance

- While there is variability in recycling system acceptance in Canada for some materials, and so on-pack recycling instructions may be less useful in some cases today, this situation is improving quickly with the introduction of Extended Producer Responsibility regulations and increased harmonization across the country. In addition, on-pack labelling initiatives are maturing and becoming more standardized. Companies should consider these developments when choosing how and when to implement this rule.
- The Canada Plastics Pact commits to reviewing existing and emerging on-pack labelling for effectiveness and uptake by the end of 2022, and will update this guidance accordingly.

Rationale

- There is variability across provinces (or even within a province) on what is accepted by recycling systems, resulting in many labels needing to say “check with local recycling program” and making them less useful in driving citizen behaviours. This is changing rapidly.
- There is little evidence-based research on the impact of in-market on-pack labels on recycling behaviours by citizens, but [research by WRAP](#) has shown this is an opportunity--the Canada Plastics Pact is committed to building better evidence and guidance for companies in this area.