



**SINGLE  
USE  
PLASTICS  
PROJECT**

# Poly Bag Standards

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**EUROPEAN  
OUTDOOR  
GROUP**

An initiative of the European Outdoor Group

# Poly Bag Standards

## Introduction and Background

The best possible garment poly bag is no poly bag. If your organisation is able to ship a product along any point of the value chain without a poly bag and without damaging the product, we strongly encourage you to do so as a first priority. For products that still require a poly bag, in this document we aim to propose a set of recommendations that are meant to become the standard within the European outdoor industry. They encompass research and feedback from the entire spectrum of the European outdoor value chain, drawing from packaging manufacturers, brands, retailers, waste intermediaries, plastic film recyclers, and sustainable packaging specialists. This wholistic approach provides an understanding of what is happening to plastic packaging beyond the operations of a single entity or link in the chain.

The priorities set forward in this document are to 1) eliminate use of virgin material, and 2) produce packaging which can re-enter the resource stream while retaining maximum material value and mechanical integrity. The specifications below are designed for retaining the poly bags within the resource stream via collective recycling, significantly increasing the value of our poly bags at end-of-life, and reducing unnecessary contaminants and materials.

In these guidelines, a few key filters were used in developing a standardised poly bag:

- First, what is ecologically better.
- Second, what retailers require (and we push back against this when it does not align with the first).
- Third, what our broader supply chain systems/operations can currently handle.

With these filters in mind, the recommended standard design is an improved version of the conventional polyethylene poly bag with design attributes that lower life cycle impacts and enhance circularity. Although there are several emerging material alternatives that have been brought to market, such as bio-based plastics, compostable plastics, and paper-based designs, polyethylene is best suited for a variety of reasons. It is fundamentally compatible with the established recovery pathway of polyethylene film recycling, it is resource-efficient due to the performance and aesthetic benefits provided by a small amount of material, and it can leverage the existing systems used by product manufacturers and their supply chain partners.

The selection of polyethylene as the poly bag material should not be considered as maintenance of the status quo. When coupled with system improvements that enable outright elimination of poly bags (where feasible) and capture of poly bags before they reach consumers, the incorporation of maximum levels of recycled content alongside implementation of this robust set of design-for-recycling considerations, has the potential to transform the system of using poly bags, significantly reducing waste, decoupling from fossil feedstocks, reducing greenhouse gas emissions, and revolutionising the sustainability profile of poly bags.

## Poly Bag Attribute Specifications

Table 1 outlines in detail the ideal, acceptable, and unacceptable standards for a poly bag across several attributes. These standards were derived from material recyclability reports on flexible films created by RecyClass™ and Plastic Recyclers Europe, and then adapted for our industry and use case by the European Outdoor Group (EOG). In brief, the ideal poly bag is as thin gauged as possible, and made from 100% recycled plastic with no adhesives, stickers, inks, labels or additives of any kind. This format of poly bag can then be preserved within the resource stream and returned back to the recycled plastic market via systems such as the recycling cooperation being developed by the Single Use Plastics Project™. We encourage brands to work with their producers and retailers to source and implement as close to this ideal as they are capable.

# Poly Bag Standards

Adapted from RecyClass™ specifically for outdoor industry poly bags

	YES – FULL COMPATIBILITY	CONDITIONAL – LIMITED COMPATIBILITY	NO – LOW COMPATIBILITY
	A-B*	B-C*	D-E-F*
	Materials that passed the testing protocols with no negative impact OR materials that have not been tested (yet), but are known to be acceptable in PE recycling	Materials that passed the testing protocols if certain conditions are met OR materials that have not been tested (yet), but pose a low risk of interfering with PE recycling	Materials that failed the testing protocols OR materials that have not been tested (yet), but pose a high risk of interfering with PE recycling
Film	100% recycled PE-LD, PE-LLD, PE-HD <sup>a</sup>	PE-LD, PE-LLD, PE-HD, single materials	Any other polymer (eg. PET, PVC etc.)
Colours	Unpigmented; transparent	Light colours; translucent colours	Dark colours; black; carbon black
Barrier	None	Barrier in the polymer matrix, SiOx and AlOx without additional coatings	> 5% EVOH (in polyolefin combination film); barrier layer PVC, PVDC, PA; any other barrier layer; foaming agents used as expandant chemical agents; aluminium
Additives	None	None	Bio-/oxo-/photodegradable additives; additives concentration > 0,97 g/cm <sup>3</sup>
Closure Systems	PE-LD, PE-LLD, PE-HD / Same material as bag	PP, PET, PETG, PS, PLA	Metal, aluminium, PVC, non-PO or foams with density < 1 g/cm <sup>3</sup>
Liners, Seals and Valves	None	PE-LD, PE-LLD, PE-HD	Metal, aluminium, PVC, foiled paper, non-PO or foams with density < 1 g/cm <sup>3</sup>
Labels (stickers)	None	PE-based labels.	Mixed materials, or paper labels
Adhesives for labels	None	Water soluble or water-releasable at less than 60°C. Certified Non-VOC emitting.	Adhesives non-soluble in water or non-releasable in water at less than 60°C, VOC emitting
Inks	No inks. Remove unnecessary branding or marketing content which significantly degrades recyclability and value.	Non-toxic (according to EUPIA guidelines). Washable inks. Natural oil-based (soy/vegetable) inks.	Inks that bleed; Toxic or hazardous inks. Metallic ink. Petroleum-based ink.
Direct Printing	Remove all possible printing <sup>§</sup> . Target unnecessary branding or marketing content which significantly degrades recyclability and value.	Laser marked print; Printed production or expiry date.	Printing covering > 50% **
Other Attachments	None	PE-LD, PE-LLD, PE-HD / Same material as bag	Metal, aluminium, PVC, paper, foams with density < 1 g/cm <sup>3</sup>
Size	Fold all product lines as efficiently as possible to use as small of a bag as possible and ensure minimal plastic is used.	Some product lines (eg. 3L shells) can be damaged if folded too many times. Identify which products can be folded and progressively add to the list. Measure reductions.	
Thickness or gauge	As thin as possible‡		

Last update – May 2021

### Additional notes:

\* Class ranking resulting by the RecyClass™ assessment. B class is reported two times because of the 90-95% amount of PE in the packaging or because of slight incompatibilities in the design

\*\* Temporary solution

<sup>a</sup> Recycled plastic is defined in ISO 14021:2016, and to achieve 100% organisations will likely deploy a mixture of pre- and post-consumer recycled plastic. We recommend maximising the proportion of post-consumer content and sourcing using the Recycled Claim Standard (RCS) where possible.

<sup>§</sup> No current EU legislation governs suffocation warnings on poly bags generally. Toys, and toy-related packaging are required to comply with the Toy Safety Directive, and the risk of suffocation is recognised in the EN71-1 standards. EN71 does not lay out requirements for warning labels, however, BS 1133-21 does make recommendation for verbiage. Even if there is no unified law compelling warning specifications, many retailers or international organisations may require these labels to ensure international compliance or shield against potential liability. Work with retailers and brand partners to determine if/when these warnings can be eliminated or printed as small as possible and using the best possible ink application.

<sup>‡</sup> Thickness or gauge is primarily a function of the substrate material, the fastening system, and the protected product. Work with retailers and manufacturers to determine the thinnest possible gauge for your product lines and the closure system you are using on your poly bags. The EOG provides recommendations below for a poly bag design that can be produced at a very thin gauge using 100% recycled plastic.

### Poly bag “Pillowcase” Prototype

We also propose a design that embodies the best practices as noted above, significantly reduces contaminants, considers circularity of the poly bags intra-value chain, and is carefully designed to return to the resource stream at end-of-life. We are recommending a “pillowcase” design made of recycled materials that nudges users to open the bag without tearing and send back the bags undamaged. This opens up possibilities for potential reuse inside the warehouse, between the warehouse and retail, and between e-commerce returns and the warehouse. This design was originally created by Equip Outdoor Technologies, specified in collaboration with — and using feedback from — the Single Use Plastics Project, packaging producers, brands, retailers, and recyclers. The prototype bag has been tested across several product lines and moved without issue from manufacturing through brand and retailer to end users, with promising results.

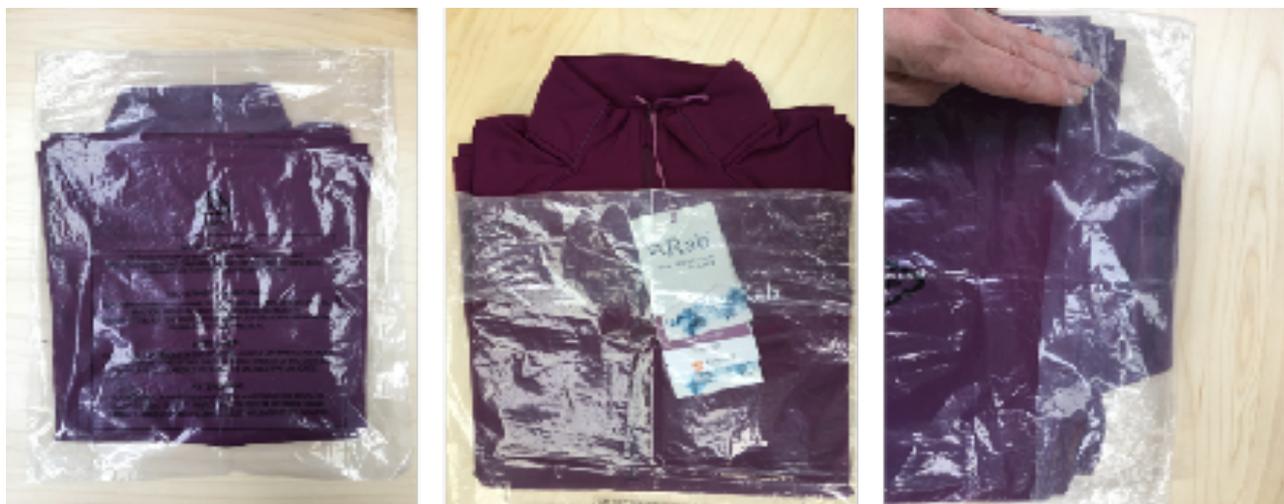


Image: courtesy of Equip, 2020<sup>2</sup>

The bag uses an overlapping flap which passively closes the bag without using adhesives or tapes and has been established as effective in lay-flat product lines, smaller products, rolled products, legwear, base layers, etc. Notably, the design is less effective without supplemental adhesives or tape for bulky items such as down or heavy synthetic insulating articles. The flap of the test bags in circulation only increased plastic volume by approximately 3% and, since it can be opened without damaging the bag, facilitates some reusability. End users are less likely to damage the bag by having to tear it open — the design and function are familiar — and more likely to return it to the seller with returns. We also stress that products can be removed from bags just before being shipped for e-commerce orders, and used to protect other products within the warehouse, or products which have been returned to the warehouse from e-commerce orders.

Once the bag is deemed unusable, its pared back design means that it can be more capably recycled into systems such as the recycling cooperation being developed by the Single Use Plastics Project™. The design decreases contaminants, increases the potential for reuse, and utilises existing equipment in both the manufacturing and reprocessing for maximum end-of-life value. We ask brands and retailers to work together, using this prototype and the table above, as a starting point for packaging requirements and discussions.

## Contaminants

After sending 3.2 tons of used industry poly bags through a recycling test in 2019, we discovered that even without optimisation, our poly bags are collectively recycled at an equivalent of 95/5 quality (i.e. 5% contaminant). These levels indicate a potential for commodity-grade plastic which can capably return to the market and, with the improvements noted in Table 1, could increase significantly in both purity and value.

After protecting the product, the design of a poly bag should prioritise limiting contaminants above all else. The top contaminants for bags from our industry are paper stickers and ink. Some stickers and ink are used to fulfil necessary objectives (e.g. bar code scanning and warning labels). We hope to share best practices among the industry to limit and satisfy these needs using different, yet widely employed methods already functional within the marketplace (e.g. folding garments with hangtags facing out, using washable inks, or using PE labels). Other stickers and inks are deployed for marketing purposes to promote branding or initiatives; these should be removed immediately as they significantly and unnecessarily degrade the plastic.

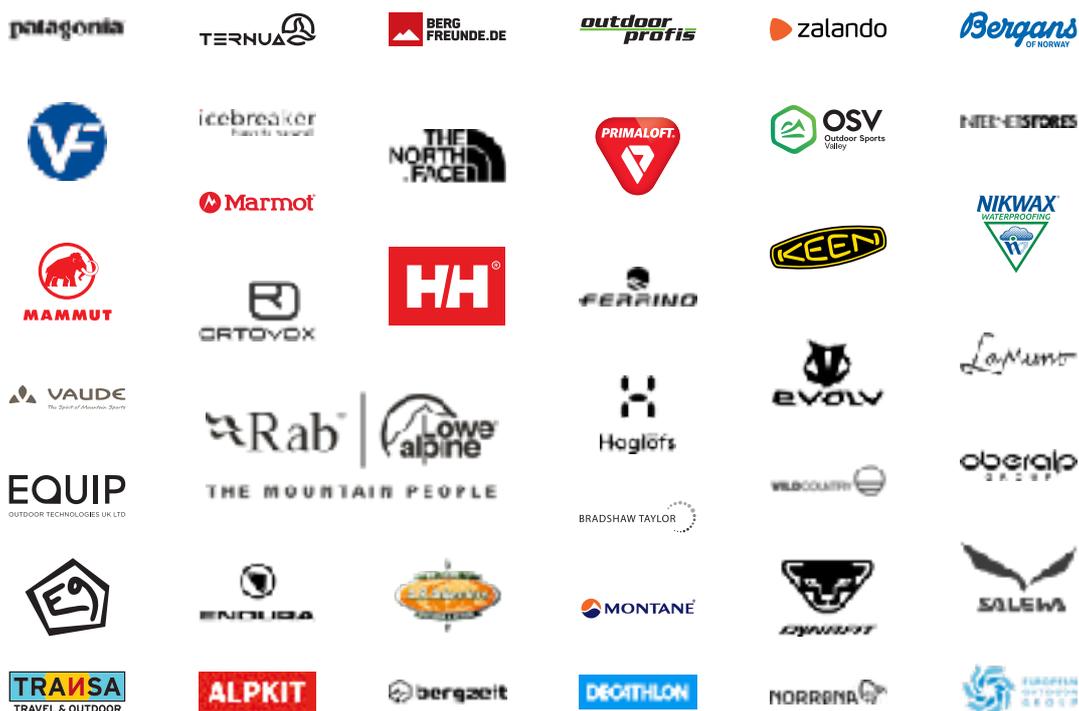
## Conclusion

By working in concert, we can take meaningful steps towards minimising our impacts on the resources we use. Our poly bags are a valuable resource and should not end up as waste. Easily deployable poly bag designs can avoid virgin inputs, limit unnecessary degradation in quality, and nudge towards reuse. Collectively deployed, poly bags set to the aforementioned specifications in this document can significantly improve the retained value of our plastic poly bags, and more readily return to dedicated reprocessing channels.

For more information about poly bags within the outdoors industry, or to find out more about the Single Use Plastics Project™, please contact Scott Nelson ([scott.nelson@europeanoutdoorgroup.com](mailto:scott.nelson@europeanoutdoorgroup.com)) or Verity Hardy ([verity.hardy@europeanoutdoorgroup.com](mailto:verity.hardy@europeanoutdoorgroup.com)) at the European Outdoor Group.

## Contributors / With thanks to

The Sustainable Packaging Coalition, Interseroh, Mainetti, Papier-Mettler, Recoup, RecyClass, REI, and the Single Use Plastic Project team:



## Further reading/Additional information

[Polybags in the Fashion Industry](#), Fashion for Good, December 2019

[Plastic Packaging: Recyclability By Design](#), Recoup, 2020 Update

[Addressing Single-Use Plastic Products Pollution Using A Life Cycle Approach](#), Life Cycle Initiative, February 2021

[Recyclability of polyolefin-based flexible packaging](#), CEFLEX, June 2020

## Sources

<sup>1</sup>RecyClass, [Design for Recycling Guidelines: PE Transparent Flexible Films for Household and Commercial Packaging](#), 2021

<sup>2</sup>Equip's use of the 'pillowcase' polybag design, launched for their SS21 collection and currently in use for suitable product types



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