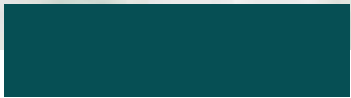




**Best
practice
guide on
textiles
design for
recycling**

Re_fashion



Eco-design of a textile product (clothing or household linen) implies that the product's entire lifecycle is considered. When an eco-design strategy focuses on recycling, the elements that affect the possibility of recycling a product, i.e. the product's capacity to be recycled, need to be considered right from the design stage. Some elements can improve a product's recyclability (recycling facilitators) whilst others reduce it (recycling disruptors).

Warning: a product's durability (i.e. ensuring that it can be used for as long as possible) must remain the overriding driver in design, even before that of improving its recyclability. Nevertheless, certain elements considered as recycling disruptors remain essential in order for the product to function properly, for it to be comfortable or for its durability. Therefore, it is not advised to remove these elements or replace them with less efficient or less durable alternatives.

Recycling disruptors

External disruptors

External disruptors, including “hard points”, are elements which can be removed from clothing and household linen during a preprocessing stage called “trim removal”.

These disruptors are sometimes essential but can be limited in number. Also, grouping them together in the same place on a product can facilitate their removal.

List of external disruptors:



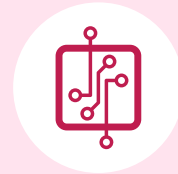
Fasteners	Information transmitters	Functional elements	Aesthetics elements	Removable electrical and electronic components
<ul style="list-style-type: none"> • Zip/zipper • Button • Hook and eye fastener • Buckle • Clasp • Snap fastener • Snap hook • Brandenburg button /toggle closure • Sewing thread/ Seam • Hook • Braiding/ string/cord • Eyelet • etc. 	<ul style="list-style-type: none"> • Brand label • Composition label • RFID chip • etc. 	<ul style="list-style-type: none"> • Reflective strip • Phosphorescent strip • Slip-resistant strip • Underwiring • Multilayer (lining, etc.) • Elastic • Shoulder pad • Ring • Pocket lining • Rivet • Cord stopper • Foam • etc. 	<ul style="list-style-type: none"> • Rhinestone, Spangles/ Paillettes/Glitter • Bead • Embroidery • Stud • Pompom • Badge, patch • Lace • Insert • Flexible or rigid plate • Bow • Charm/trinket • Positioned pattern flocking or print • etc. 	<ul style="list-style-type: none"> • LED light • “Smart” sensor • Heating device • etc.

This non-exhaustive list of external disruptors is given for information purposes only. Some elements may be both aesthetic and functional.

Internal disruptors

Internal disruptors are elements that cannot be separated from the product's main fabric. They are integrated or inherently linked to the fabric. These disruptors are therefore more problematic than external disruptors. It is recommended to avoid using them (or at least to limit them) during the product's design phase.

List of internal disruptors:



Fibres	Fabric	Finished product	Finishing	Non-removable electrical and electronic components
<ul style="list-style-type: none"> • Elastane (>5%) • Metallic/metallized yarn • Very thin yarn (high yarn count) • Elastic yarn • etc. 	<ul style="list-style-type: none"> • Jacquard knit or woven fabric • Stretch fabric • Warp knit (= cannot be unravelled) • Blend of more than 2 different fibres • etc. 	<ul style="list-style-type: none"> • Multi-materials (>2)* • Multicoloured • All-over decorative element (print, sequins, beads, embroidery, etc.) • Adhesive • etc. 	<ul style="list-style-type: none"> • Coating • Chemical finish • etc. 	<ul style="list-style-type: none"> • LED light • "Smart" sensor • Heating device • etc.

*Product final composition with more than 2 different materials.

This non-exhaustive list of internal disruptors is given for information purposes only.

Recycling facilitators

Recycling facilitators are a range of elements that help in recycling and have a positive impact on at least one textile recycling stage. The most impactful facilitators are highlighted **in bold**.

List of facilitators:



Fibres	Finished product
<ul style="list-style-type: none">• No metallic/metallized yarns• Limited use of elastane (< 5%)	<ul style="list-style-type: none">• Traceability and communication of accurate material composition up to the recyclers• Single materials & single layer• External disruptors regrouped in the same zone

NB: This list is valid at the time of publication and will be updated according to developments in the recycling industry.

In summary, **the most disruptive elements identified and which disrupt all textile recycling processes are:**

- **Metallic / metallized yarns**
- **Electrical and electronic components**
- **Finishes, coatings, prints, sequins, spangles, glitter and paillettes when they cover the entire garment or a significant surface area**
- **Metallic and plastic hard points in significant numbers or covering a significant part of the item's surface area**

The level of the disruption of the other disruptors identified varies according to the recycling process. Among the most significant are:

- Blends with **more than 2 different fibres** (e.g. x% cotton + x% polyester + x% polyamide).
- A quantity of **elastane that is higher than 5% in the fabric composition**

Recycling facilitators are therefore the absence of these elements as well as the traceability and the communication of information about an item's composition (mainly material composition) **throughout its life cycle.**

For further details, we invite you to refer to Refashion's full study entitled [Study on recycling disruptors and facilitators in clothing, household linen and footwear - 2025](#)



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