

# Circulator Guide

H&M Group

This is H&M Group's guide to designing more circular products. It is the result of a cross collaborative effort to reshape the way we make products across all our brands.

Over the past few years, our assortment and production teams have joined forces with internal and external experts to develop and test new design processes. The result is this guide. In it we set out a four-step process that will help us create more circular products and reach our sustainability goals.

We want to share what we've learnt with as many people as possible. That's why we're making this guide available to everyone. We believe that by working together we can make better and faster progress towards becoming a circular business.

If you work with fashion or have an interest in the circular economy, we would like you to read this guide, consider how you could use it in your work and tell us what you think. What works, what doesn't. What's missing? We also want to hear from you if your organisation is interested in discussing how the guideline can be developed. Please email us on: [circulator@hmgroup.com](mailto:circulator@hmgroup.com)

Alongside the guide, we are building a digital tool that will take you through the process and help you create more circular products. Find out more about the tool [here](#).

We will regularly update this guide to reflect what we, and the industry, learn on our journey to becoming more circular.

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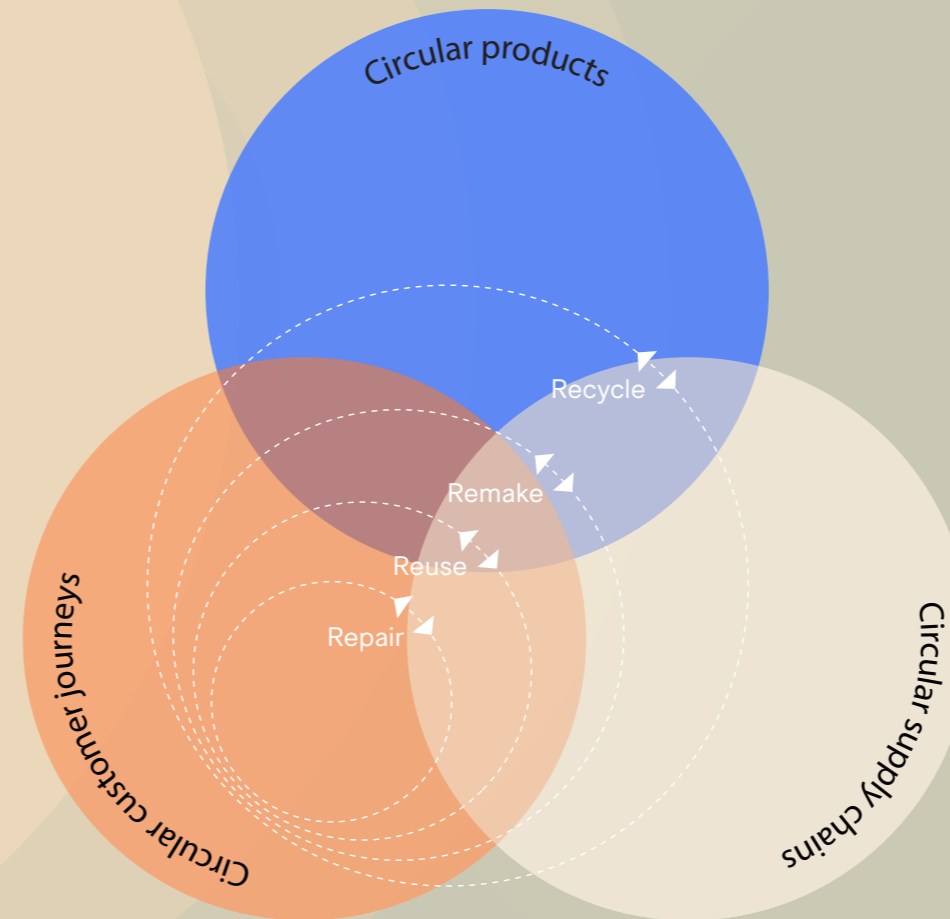
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# A Circular H&M Group

At H&M Group we know we need to become a circular business to achieve our climate goals.

Previously, we've focused on becoming circular in each stage of our value cycle – from design through customer use to recycling. However, we're becoming increasingly aware of the connections between these stages, so we need to take a more holistic perspective.

We also need to speed up our transition to becoming a circular business. This will be integral to achieving our climate goals and reducing pressure on planetary boundaries. One way to gain momentum is to build on the connections between these different areas.



## Our circular ecosystem

Our ambition is to create a circular ecosystem that helps us become climate positive with a net positive impact on biodiversity. In this ecosystem, we will create more circular products fuelled by a circular supply chain, which in turn gives our customers access to a more circular fashion experience through a diverse range of access models. Read more about our [circular ecosystem here](#).

## Circular products in our ecosystem

By 2025, we want to use the Circulator to design all our products so they can circulate repeatedly around the multiple loops of a circular ecosystem. This way we can make the most of the precious resources and energy that go into making them. The idea is that a product should be repaired, reused and remade – potentially several times – before eventually being recycled into new materials at the end of its life.

# What is a circular product?

Today, there is no industry standard for circular products. There is no agreed definition or criteria for us to use as a baseline. We work towards Ellen MacArthur Foundation's [vision of a circular economy](#) for fashion.

The vision states: a circular economy for fashion creates better products and services for customers, contributes to a resilient and thriving fashion industry, and regenerates the environment. It prioritises the rights and equity of everyone involved in the fashion industry and will create new opportunities for growth that are distributed, diverse and inclusive.

## We can build an industry that designs products to be:

- **used more**
- **made to be made again**
- **made from safe and recycled or renewable inputs.**

## Digging deeper

Digging a bit deeper into these three pillars we can begin to build a better picture of a more circular product.

If we want products to be **used more**, we need to design them to be as durable as possible. We also need to think about how we can adapt our business model to offer fashion in different ways to extend the use of a product, for example through repair, resell, rental or remake.

If we want products that are **made to be made again**, recyclability must be the priority. We need to make products that are easy to collect, recognise, disassemble and process into new materials.

Finally, making products from **safe and recycled or renewable inputs** is something we are steadily working towards. In 2020, 64.5% of the material we sourced for our products across H&M Group met our definition for [sustainably sourced materials](#). We aim to reach 100% by 2030 at the latest.

With Ellen MacArthur Foundation's vision as a guiding star, we know that we need to make products that are durable and recyclable, and we need to make them from more sustainably sourced materials.

However, we found that it isn't that simple and circular design can be quite subjective. Durability and recyclability are not always compatible, which often leads to trade-offs between making something that lasts a long time and something that is easy to recycle at the end of its life.

Durable products often need additional stitching, fusing and fabric blends, which can be more complicated to take apart and recycle. While recyclable products need to use mono-fibres, which cannot always deliver the same performance, functionality or durability as blended-fibres.

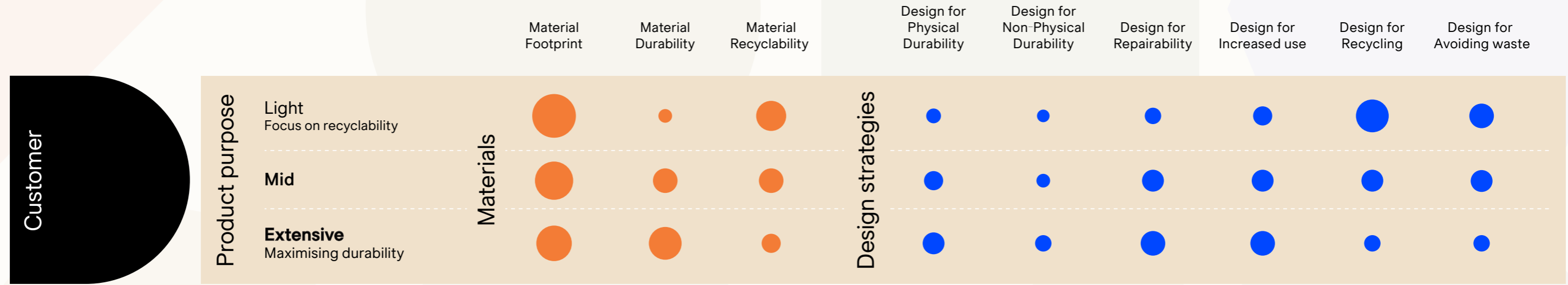
We also need to consider how we optimise our use of resources. Focusing on developing all products to be more durable could potentially lead to us using more resources than a garment requires.

# The complexity of circular design

In the future, we may have the technology to deal with these complexities, but we can't wait. We have to start developing more circular products today. That's why we have developed a tailored approach that prioritises durability or recyclability depending on the product purpose - how a

product is used, for how long and how often. Each product is allocated one of three product purpose categories as part of the design process. These categories then influence which materials and design strategies are used.

We have devised a four-step process that guides product teams to make better design decisions and create more circular products.



**1** Know your customer

**2** Define your product purpose category

**3** Choose your materials

**4** Select your design strategies

The size of the circles relate to how much you should prioritise the different materials and design strategies for each of the three product purpose categories. The larger the circle the more an area should be prioritised.

# The Process

## Step 1

# Start with the customer

Fashion can never be sustainable if it lies unworn and forgotten at the bottom of our wardrobes, or worse, discarded after a couple of wears.

As with any design and product development process, creating a circular product starts with the customer. Use industry insights and research, as well as your own knowledge and experience, to understand what customers really want.

Knowing your customers' needs and expectations means you will take relevant products to market. Which, in turn, means you optimise orders and minimise excess inventory – both crucial to maximising resources in a circular economy.

It's also important to keep your customer in mind throughout the development process to ensure you don't stray from making a product based on their needs.

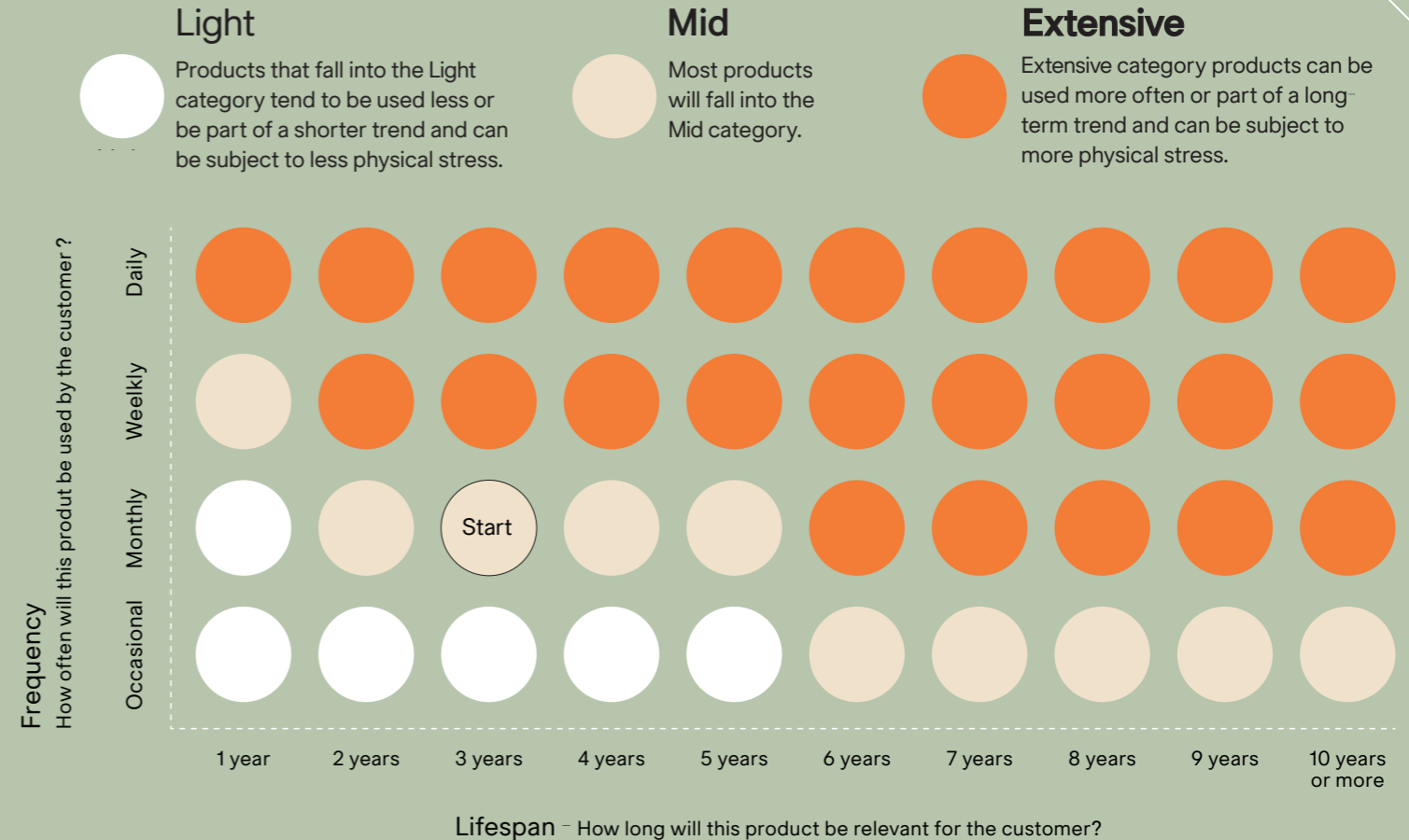


Once you understand your customer, the next step is to define your product's purpose. Will it be sold or offered for rental? Is it this season's party dress, a classic trench coat or a basic T-shirt? Will it be worn every day, once a month or a couple of times a year?

# Define your product purpose

1. **Start by placing your product in the mid/default category** - used monthly for about three years. Then think about how often it will be used and go up or down on the frequency axis. Next consider, how long it will be used for and go left or right on the lifespan axis.
2. **Now, think about how much wear and tear the product will be exposed to.** For products exposed to heavy wear and tear, select one category above, for products that will be exposed to very little wear and tear select one category below.
3. **Decide on the access model.** If your product will be available through a rental/subscription access model or you know it will have multiple users through sharing/swapping/resale, go up one category.

Now you have your product purpose category that will guide future choices about materials and design strategies.



Please note that this first version of our product purpose matrix is based on the best knowledge of experts. we are currently developing a more data driven matrix.

## Step 3

# Choose your materials

You know what product you're making, who you are making it for and the product purpose category. Now it's time to choose your materials.

## CIRCULAR PRODUCT DEFINITION

Every part of a product – from fabric to finish, lining to buttons, dye to embellishments – can affect circularity. It's important to think carefully about what you leave out as well as what you put in. There are three key impact areas to consider when you select your materials. These areas relate to the three parts of the Ellen MacArthur Foundation's definition for more circular products:

- 
**Material footprint**  
 Made from safe, recycled or renewable materials
- 
**Material durability**  
 Made to be used more
- 
**Material recyclability**  
 Made to be made again

## PRODUCT PURPOSE CATEGORY

To maximise the circular potential of your product you should prioritise different impact areas depending on the product purpose you assigned in the previous step.

### Light

If you are making a product that falls into the light category, focus on materials that have a lower footprint and are easy to recycle. Durability is still important, but less so.

### Mid

If you're making a product in the mid category, prioritise materials with a low environmental footprint. Recyclability and durability are still important.

### Extensive


Finally, for the extensive category, prioritise materials that are durable and have a low environmental footprint. Recyclability is still important, but less so.

# Material Footprint

PRIORITISED FOR  
PRODUCT PURPOSE CATEGORY:

Light / Mid / **Extensive**

CIRCULAR PRODUCT DEFINITION:

 Made from safe,  
and recycled  
or renewable inputs

Customers are increasingly aware of the impact of their choices and are turning to products made from materials that have a lower environmental impact. At H&M Group, we have set [several goals](#) to improve our material sourcing and meet these customer expectations.

All materials impact the environment, but you can make smart choices to minimise this impact. To help increase the circular potential of products, we rate the footprint of our materials based on two elements – the raw material input and processes applied.

## Raw material input

Our [material categorisation benchmark](#) allows us to compare the impact of different types of materials within the same family, for example different types of paper or cotton or metal. Each family of materials is broken down into four distinct categories. Those in group A are our preferred materials while materials in group D include conventional, virgin materials.

For a product to be considered more circular it needs to be made of materials categorised as A, B or C (excluding Better Cotton Initiative\*) and we aim to continuously move our sourcing towards category A.

We assess raw materials based on:

1. **Environmental impacts (climate, water, chemicals toxicity, land use, waste, animal welfare)**
2. **Environmental risks and our material ethics policy**
3. **Integrity through traceability and certifications.**

## Processes

Currently the processes we assess for circularity are prints and dyeing. We aim to continuously add more processes in the future.

We assess processes according to three aspects:

1. **Environmental impact in terms of water, chemicals, energy, air and waste.**
2. **Product end-use impacts**
3. **Impact on worker health and safety**

The aim is to encourage our product teams to convert to lower impact processes.

## Natural versus synthetic

There's a common myth that natural fibres are better for the environment than synthetics. But it's not that simple and every fibre has an impact. For example, conventional cotton needs a lot of water, wool uses a lot of land, traditional synthetics are made from fossil fuels and all of them [shed microfibres that persist in the environment](#) (not just synthetics as widely believed).

To make more circular products we need to use a mix of different fibres that meet different product needs according to product purpose. Find out more [here](#).

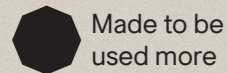
\*Better Cotton Initiative (BCI) and mass balance play a crucial role in helping brands and farmers achieve scale in sustainability. However, traceability promotes long term integrity and is equally as important for H&M Group. Therefore, using BCI does not increase the circular potential of a product.

# Material Durability

PRIORITISED FOR  
PRODUCT PURPOSE CATEGORY:

**Extensive**

CIRCULAR PRODUCT DEFINITION:



Made to be  
used more

Customers want more from their clothes and are increasingly putting quality and durability first. We are also seeing alternative access models such as resell moving into the mainstream, while sharing and rental are not far behind.

To meet these changing expectations and the demands of multiple users, we need to know more about how long materials will last to understand how long a product will last.

## Quality frameworks

At H&M Group, our products must meet strict internal quality standards as a minimum. But designing more circular products demands an additional framework to capture the different needs of the different product purposes.

As we increasingly prioritise circular design, knowledge of material quality needs to be securely embedded in product teams. They need to understand how their design decisions influence product quality and recognise the importance of taking a differentiated approach to quality based on our three product purpose categories.

Our team of internal quality and materials experts have created a framework for assessing material durability based on fibre type, fabric structure, fabric weight, yarn type, wash treatment, dye stuff and any finishes.

Using this quality rating, a material is placed on a scale showing how many washes it could withstand without changing its properties up to a maximum of 50 home laundries. Products that fall into the extensive category should be made from materials that remain unchanged for more washes than those that fall into the light category.

## Framework verification

We are currently verifying this framework through a series of wash tests to evaluate material performance based on tear strength, tensile strength, piling, shrinkage, twisting, colour change and overall appearance after wash.

# Material Recyclability

## PRIORITISED FOR PRODUCT PURPOSE CATEGORY:

Light

## CIRCULAR PRODUCT DEFINITION:



Made to be made again

As well as designing products that last a long time, we also need to consider what happens to them once they have reached the end of their technical lifetime. In a circular economy, nothing is wasted, and recycling plays a vital role in reprocessing materials so they can be used again.

It's not about the percentage of recycled material used in products, although obviously the more of this the better. It's about making products with materials that can be recycled later, after extended use. This way, we will secure a supply of quality feedstock to produce recycled materials in the future, helping to close the loop at scale.

## Technology survey

We surveyed over 25 recycling and sorting companies to discover what technologies will be economically and technically possible to scale up within the next three years (the minimum amount of time it takes to develop, market and use a product). We prioritised solutions that will use post-consumer feedstock - textile items that have been used by customers, not just offcuts from the production process.

## Key findings

- Most innovation today has been directed towards technology that recycles a single fibre - either cotton or polyester. Leaving a clear innovation gap for technology that separates several different fibres for recycling in a single process.
- If a solution can handle mixed fibres, it tends to focus on reclaiming one fibre while treating the others as waste.

- Most recycling technology can only handle textiles with a maximum of 3 - 5 % elastane, however clothing such as underwear and sportswear often contains higher amounts.
- Recyclers favour feedstock containing a high percentage of a single fibre, around 90%, which means many garments produced today are unrecyclable.
- Some print techniques are difficult to recycle, especially when used on cellulosic fabrics.
- Shredding is needed to turn the textile waste into a processable material.
- Recycling of blended cellulosic fibres is a challenge that remains to be solved.

Using recyclable materials is important to meet our [goal of using 30% recycled materials in our products by 2025](#). To achieve this, we need a secure supply of feedstock. That's why we want to encourage brands and designers across the industry to consider the recyclability of the materials they choose.

Generally speaking, mono-materials are preferable to blended materials because they are easier to recycle with today's technology. Technology moves fast and in the coming years we expect several new fibre recycling solutions to reach scale. That is why we will review material recyclability at least once a year.



### How chemical recycling works

In chemical recycling, blended fibres are dissolved or broken down into their building blocks. These building blocks, or monomers, can then be processed again to produce new materials, which are often the same quality as virgin material.

Compared to mechanical recycling, chemical recycling uses more energy and chemicals. However, it can handle feedstock made up of several different fibres or featuring prints and trims. Chemical recycling is mostly used for synthetics, but it can also break down cotton to produce regenerated cellulosic fibres rather than cotton yarn.

### How mechanical recycling works

In mechanical recycling, garments and fabrics are shredded into fibres that are processed into new yarns and textile products. The process uses less chemicals and energy than chemical recycling. However, it relies on good-quality feedstock with a very high percentage of a single fibre because it is unable to separate different fibres from each other.

Mechanical recycling affects the quality of the fibres, making it necessary to strengthen the new products with virgin materials and is mostly used for cotton and wool.

Mechanical recycling can't remove dyes and several recycling companies will use chemicals like bleach to remove dye, which damages the fibres. It also has problems processing prints and trims.

To better understand how chemical content affects recycling, we teamed up with [IKEA group to undertake a large scale study](#). The companies will use the results to build knowledge and to influence legislation around the circular economy.

## Step 4

Design strategies are different approaches, opportunities and solutions to design products fit for a circular system.

# Select your Design Strategies

Each strategy includes an overall description, sets of criteria to work through and real-life case studies. Criteria range from how materials are put together to alternative business models.

We've picked case studies from across the H&M Group, but we know there are lots more exciting examples springing up across the industry at an increasing rate. This gives us hope that we can transition to a circular fashion economy at pace and is another reason we want to share our guideline. Collectively, we can learn how to accelerate design for a circular future.

We're working with six different strategies that put Ellen MacArthur Foundation's vision for a circular fashion industry into practice. These strategies either increase the lifespan or use of a product, avoid waste or enable recycling at the very end of a product's life.

- **Design for Physical durability**
- **Design for Non-physical durability**
- **Design for Increased use**
- **Design for Repairability**
- **Design for Avoiding waste**
- **Design for Recycling**

You should aim to use at least three design strategies and the more criteria you fulfil the better. A product should meet at least three to be considered more circular. However, every small step forward makes a difference and sometimes progress means more than perfection, so don't feel disheartened if you can't meet three yet.

## Product purpose and design strategies

The purpose of your product will determine which design strategies you choose:

- **Light use**– focus on the increased use, avoiding waste and recycling strategies. Other design strategies are relevant, but less so.
- **Mid use**– all strategies are equally important for this category.
- **Extensive use**– focus on the strategies that promote longevity including physical and non-physical durability, increased use and repairability.

The avoiding waste and recycling strategies are relevant but less so.

We've kept the criteria in each strategy quite general so they can be applied broadly. It's up to each team to interpret and determine how they can be applied to their product group. Future versions of the guideline may include criteria for specific product types as we learn more.

## Business model criteria

Developing more circular products is an emerging and evolving area. We are becoming increasingly aware of how more circular products and business models are entwined, with one enabling the other.

Circular design can create a product that has the potential to be used longer and to be recirculated at its highest value, but we need the business models and systems in place to facilitate this recirculation. That's why some criteria in the strategies relate to business models rather than products. Criteria relating directly to product development can be applied directly at a product level. While those connected to business models aim to create a more long-term shift in approach at an assortment level.

## Remember

Whatever strategy you use, keep returning to the customer brief to make sure you develop products that meet customer demand.

## Design Strategy

# Physical Durability

PRIORITISED FOR PRODUCT PURPOSE CATEGORY:

**Mid / Extensive**

CIRCULAR PRODUCT DEFINITION:



Made to be used more

At the heart of closing the loop and making fashion circular is preserving the value of a garment for as long as possible. Customers are increasingly prioritising quality and durability, so how do we extend the lifetime of our products?

When you design a product to last a long time, you need to consider that fashions and tastes change. We recommend you use the design strategy for non-physical durability alongside this strategy to ensure the product not only lasts, but also has long-term appeal.

### PRODUCT CRITERIA

#### Material choice

Select all materials to optimise durability and eliminate any weak spots, for example, lightweight pocketing. All exposed materials should withstand at least 30 home laundries without major change to their properties.

#### Fit and construction

Ensure the fit and construction of the product (in combination with the choice of material) maximises durability, decreases the risk of components breaking and reduces stress points.

#### Construction and making

Strengthen any stress points. For example, use double layers, reinforcement patches, pocket corners, double stitching, wrap seams, safety stitching, stay tape, neck tape, bar tacks, interlining and reduce risk of seam slippage.

#### Wear testing

Test the product under real conditions to discover any weak spots and/or actively include customer feedback to improve durability.

#### Additional care instructions

Give the customer additional care instructions.

### CASE STUDIES

#### H&M Jeans Redesign

#### Weekday Jeans Redesign



## Design Strategy

# Non-Physical Durability

PRIORITISED FOR  
PRODUCT PURPOSE CATEGORY:

**Mid / Extensive**

CIRCULAR PRODUCT DEFINITION:



Made to be  
used more

There are two sides to durability. One is physical and the other is aesthetic and emotional. When you make longer-lasting products you need to make sure they don't lose their appeal when fashion trends and tastes change or evolve.

This strategy is about being timeless and thinking beyond the short term. We recommend you combine it with design for physical durability to mitigate for wear and tear that can occur on clothing kept for a long time. When you interpret these criteria, bear in mind that non-physical durability can be subjective.

### PRODUCT CRITERIA

#### Trend lifecycle

Use materials, proportions, details, colours and prints that will be relevant for several seasons or years.

#### Iconic design

Release the product as part of an exclusive collection with a narrative that encourages the customer to build a stronger emotional bond. This increases the likelihood of them keeping the product longer and then recirculating it, for example through resale.

### CASE STUDIES

**Monki - Designed for Circularity Collection**  
**Weekday Body Scan Jeans**  
[H&M Print On Demand T-Shirts](#)

We still have a lot to learn about this strategy, but we can't overlook it simply because we don't have all the answers. Non-physical durability plays an important role in extending the longevity of our products and we expect this strategy to evolve as we understand more about the area.

### BUSINESS MODEL CRITERIA

#### Customer co-creation

Involve the customer in the design process to build a stronger attachment, increase perceived product value and encourage longer use. For example, on-demand clothing where the customer gets to pick design elements like colour or components like collar shape.

#### Made to measure

Offer the garment as made-to-measure. The customer can make limited fit changes or more extensive fit customization based on body scanning.

## Design Strategy

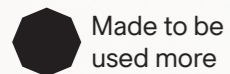
# Increased Use



PRIORITISED FOR  
PRODUCT PURPOSE CATEGORY:

**Mid / Extensive**

CIRCULAR PRODUCT DEFINITION:



Using items more often and over a longer period reduces the pressure on virgin resources to make new products. But how do we encourage people to get more wear out of their wardrobe?

One way is to offer multi-user access models like rental. Another way is to give the customer several ways to use a product. Think versatility, modularity,

reversibility or adjustability. A good source of inspiration is the sports and outdoors sector that already offers lots of multi-purpose products.

### PRODUCT CRITERIA

#### Modularity

Use a modular approach where details or parts of the garment can be detached, replaced or upgraded.

#### Versatility

Build in versatility so the customer can style and wear the product in multiple ways. Make it reversible, adjustable and adaptable.

#### Redesign

Provide instructions on how to re-colour or remake the product, or offer a discount for a redesign service after the first use phase.

#### Fit for many

Intentionally design the product to fit lots of different body types. Use technical features to enable adjustability, for example, strap ring and sliders, hidden elastic, adjustable ties, drawstrings, stretch panels, smock, bias cut, smart constructions. This can include a gender-neutral design, but not an oversize fit.

#### Adjustable construction

Build in adjustability so the product can be altered throughout its lifespan. For example, adjustable back trouser seam or hem depth.

### BUSINESS MODEL CRITERIA

#### Rental/Sharing

Offer access through a rental or sharing service.

### CASE STUDIES

**Monki - Designed for Circularity Collection Weekday Body Scan Jeans**

## Design Strategy

# Repairability

PRIORITISED FOR  
PRODUCT PURPOSE CATEGORY:

**Mid / Extensive**

CIRCULAR PRODUCT DEFINITION:



Made to be  
used more

Repairing and refreshing products is a simple way to extend their lifespan and preserve their value. The important thing is to start thinking about how to make it easy for the customer to repair products early in the design process.

This strategy works on two levels. Firstly, on a product level – construction should make repairs easy and efficient to carry out. Secondly, on a customer level – make information available on how to repair the product or offer an easy-to-access repair services.

### PRODUCT CRITERIA

#### Spare components

Include spare components like thread, buttons, beads or a fabric patch (from cutting waste where relevant, or make these items available on request.

#### Material choice

Choose materials that are easy to repair. Make sure materials are robust and can be handled extensively, for example use a metal zipper rather than a plastic one.

#### Construction and making

Construct the product in a way that makes it easy to repair or replace components and considers the most common failure points.

#### Repair information

Make information about repair and maintenance of the product available to the customer.

### BUSINESS MODEL CRITERIA

#### Service Offer

Offer the customer access to an inhouse or third-party repair and refresh service with the product.

### CASE STUDIES

#### ARKET Patchwork Denim


## Design Strategy

# Avoiding Waste

PRIORITISED FOR  
PRODUCT PURPOSE CATEGORY:

Light / Mid

CIRCULAR PRODUCT DEFINITION:

 Made from safe, and recycled or renewable inputs

The fashion industry has a problem with waste and a lot of valuable material is discarded during production. This must change if we want to move to a circular economy.

Design plays a crucial role in reducing waste. As does changing our attitudes to how we see waste – it’s not something to be thrown away, it’s a valuable resource to be used and recirculated just like any other material.

### PRODUCT CRITERIA

#### Minimal waste pattern cutting

This product is made with a higher-than-average pattern efficiency.

#### Zero waste pattern cutting

Make the product with a pattern efficiency between 99-100%.

#### Fully fashioned

Produce the product as fully fashioned knitwear.

#### Utilises cutting waste

Make the product from cutting waste and/or use the cutting waste from this product in the production of another product.

#### Remake

Make the product from post-consumer textiles.

#### 3D

Minimise physical samples by using 3D prototyping software renders.

### EIM score

Denim products achieve a green score using Environmental Impact Measuring software from Jeanologia.

### BUSINESS MODEL CRITERIA

#### On demand

Produce the product ‘on demand’ with or without customisation.

### CASE STUDIES

**ARKET Patchwork Denim**  
[H&M On Demand t-shirt](#)  
**Weekday Body Scan Jeans**

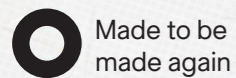
## Design Strategy

# Recycling

### PRIORITISED FOR PRODUCT PURPOSE CATEGORY:

Light / **Mid** /

### CIRCULAR PRODUCT DEFINITION:



In a circular economy you need to think about what happens to a product at the end of its life before it's even created. Recycling products keeps materials in the loop and reduces our reliance on virgin resources.

Designing for recycling has three elements. Firstly, select materials that are easy to recycle. Secondly, these materials should be assembled in a way that makes the final product easy to recycle. Finally, include information about the product to make sorting and recycling easier at the end of a product's life.

Making a product easy to disassemble may sound like a great way to maximise recyclability and still use different materials. But it's not that simple. It is currently not efficient to take a product apart at scale, for example unscrew buttons, and nor will it be for at least three years. Plus, disassembly can compromise material quality, shortening the lifespan and decreasing recirculation potential. This type of disassembly is better suited to the design strategy for increased use to enhance versatility and modularity.

### PRODUCT CRITERIA

#### Material choice

Select highly recyclable materials (see the section on materials recyclability for more information). Ensure at least 90% of materials are made of the same fibre, exact percentage depends on total fibre composition.

#### Mono-material: basic

Choose materials made of the same fiber type for at least 98% of the product weight. This includes shell and lining but excludes interlinings, pockets, labels, threads and trims.

#### Mono-material: medium

Choose materials made of the same fiber type for at least 98% of the product weight. This includes shell, lining, padding, interlinings, pockets but excludes labels, threads and trims.

#### Mono-material: aspirational

Choose materials made of the same fiber type for 100% of the product weight. This includes all materials - shell, lining, threads, zipper tape, trims, interlinings, paddings, pockets, labels etc.

#### Minimise additional trims

Reduce and replace additional components that could disrupt the recycling process. For example, use bar tacks instead of rivets, choose a pin or brooch over heavy embellishments and accessories, or attach components using dissolvable thread. (Please note, this may be adjusted once we understand better the scaling plans and industrial suitability for dissolvable thread.)

### BUSINESS MODEL CRITERIA

#### Product data

Assign a digital product passport using technology such as RFID, QR codes, or traceable fibre technology to identify materials and construction to enable easy sorting and recycling.

### CASE STUDIES

**Monki - Designed for Circularity Collection**  
**H&M Jeans ReDesign**  
**Weekday Jeans Redesign**

## Case Study

# ARKET Patchwork Denim



### DESIGN STRATEGIES FOLLOWED

#### — Non-Physical Durability

#### — Repairability

#### — Avoiding Waste

#### — Recycling

#### About ARKET

ARKET's mission is to democratise quality and make sustainable design accessible to more people. The company also wants to drive forward positive change in the fashion and design industry by using a circular approach and a high level of transparency.

#### About the collection

ARKET created a collection of patchwork denim using post-consumer fabrics sourced via H&M Group's in-store garment collecting programme, run by our partner I:CO. Designed for women, children and the home, the collection featured jackets, jeans, a bucket hat and a cushion cover.

Each reclaimed garment was washed and sorted before being cut up into patches and sewn together to form large sheets of irregular fabric shapes. The patchwork sheets were then used instead of conventional fabric rolls. This made each garment unique and gave them a tactile quality with a lived-in feel.

#### How it meets the design strategy for **Non-Physical Durability**

##### Trend lifecycle

The patchwork collection uses timeless silhouettes and classic pieces to create products that are not confined to an individual trend.

##### Iconic design

ARKET built a clear narrative about re-using and repurposing denim, and how this is woven into the history of the fabric. They also talked about closing the loop by using post-consumer denim. Both storylines encouraged the customer to build a stronger emotional bond with the pieces.

#### How it meets the design strategy for **Repairability**

##### Repair Information

ARKET makes information about [repairing and caring for denim](#) available on its website in an interview with a mending expert.

#### How it meets the design strategy for **Avoiding Waste**

##### Remake

The Patchwork Collection uses post-consumer waste sourced through H&M Group's in-store garment collection, which is managed by our partner I:CO.

#### How it meets the design strategy for **Recycling**

##### Material choice

More than 90% of the materials in the collection are cotton, making the individual pieces easier to recycle at the end of life.

##### Mono-material: basic

At least 98% of the product weight is made of the same fibre type including shell and lining but excluding interlinings, pockets, labels, threads and trims.

## Case Study

# H&M Jeans Redesign

### DESIGN STRATEGIES FOLLOWED

#### Physical Durability

#### Non Physical Durability

#### Recycling

### About H&M

H&M offers the latest styles and inspiration for all — always. Customers will find everything from fashion pieces and unique designer collaborations to affordable wardrobe essentials, complete-the-look accessories and motivational workout wear. But H&M is more than just fashion. With price, quality and sustainability deeply rooted in its DNA, H&M is not only a possibility for everyone to explore their personal style, but it also offers a chance to create a more sustainable fashion future.

### About the collection

In 2020, Ellen MacArthur Foundation launched their vision for a circular fashion economy and launched the [Jeans Redesign](#). This project set out to prove that even the most iconic piece of clothing can be made fit for a circular economy and to show that we can transform the whole industry.

H&M took on the Jeans Redesign challenge and produced a menswear collection featuring three jean styles, two jackets, an overshirt, a tote bag and a bucket hat. To maximise the circular potential of the collection they took away unnecessary design elements and excess materials, focused on durable and recyclable materials and construction, as well as minimised the use of chemicals.

### How it meets the design strategy for Physical Durability

#### Material choice

H&M chose materials that would maximise the durability of the products. They also checked that the jeans could withstand a minimum of 30 home laundries without greatly changing their properties. The washing tests looked at tensile strength, tearing strength and dimensional stability.

#### Construction and making

Bartacks were used to strengthen any stress points. The tacks were circular to emulate the shape of a traditional metal rivet.

### How it meets the design strategy for Non-Physical Durability

#### Trend lifecycle

H&M wanted to create classic jeans pieces that lived beyond a single season. By selecting timeless designs and classic silhouettes, they designed long-term appeal into the collection.

#### Iconic design

With the Jeans Redesign narrative built into the products, it encourages the customer to consider the concept of circularity and the potential for items to have another life after they have finished using them.

### How it meets the design strategy for Recycling

#### Material choice

H&M maximised the use of cellulosic materials to increase the recyclability of the garments.

#### Mono-material: medium

Material composition on the collection exceeded 98% cellulose and included the shell, pockets and Tencel thread. Interlining was left out because the team felt that it wasn't needed in these products and it can disrupt the recycling process.

#### Minimise additional trims

H&M removed metal rivets and used circular bartack stitches that emulated the traditional shape of a rivet. Other trims were kept to a minimum. The back patch was replaced with embroidery.

## Case Study

# Monki A collection designed for circularity

### DESIGN STRATEGIES FOLLOWED

— **Non-Physical Durability**

— **Increased Use**

— **Recycling**

### About Monki

Monki is a purpose-driven fashion brand that believes in sisterhood, the power of community and in contributing to a more sustainable fashion industry. This collection - Designed for Circularity - is one step on their journey.

### About the collection

The capsule collection features six garments with a timeless and minimalist aesthetic. It aligns with the brand's goal to prolong the life of products by keeping them in use for as long as possible and to close the loop through recycling, upcycling and innovative design. Designed for Circularity features mono-materials, a neutral colour palette, minimal embellishments and a clear narrative.

### How it meets the design strategy for **Non-Physical Durability**

#### Trend lifecycle

The neutral colour scheme has a timeless quality and can be recoloured, encouraging customers to keep the garments longer.

#### Iconic design

The collection has a clear Monki DNA silhouette featuring oversized and layered garments that customers can relate to, build an emotional attachment with and keep for a long time.

### How it meets the design strategy for **Increased Use**

#### Versatility

Several pieces in the collection can be styled and worn by the customer in different ways. For example, the coat is reversable and the trousers can be buttoned in two different ways to sit low on the hips or high on the waist.

### Redesign

Using a white colour palette makes the garments perfect for customer customisation, for example the pieces can be re-coloured with plant dyes or embellished with embroidery.

### How it meets the design strategy for **Recycling**

#### Choice of materials

The materials and everything that goes into making the garments were selected to be recyclable.

#### Mono-material

To make recycling easier at end of life, the designs use mono-materials. For example, the jacket is made of 100% recycled polyester including the shell fabric, padding, thread and buttons. While the jeans are made of natural biobased material including organic cotton fabric and Tencel thread. The only trim used was an unscrewable button.

#### Minimal additional trims

Currently, there are not many well-established circular solutions for trims. Because of this, designers at Monki chose to reduce the number of trims and explore working with trims that can be disassembled.



## Case Study

# Weekday Body Scan Jeans



### DESIGN STRATEGIES FOLLOWED

— Non-Physical Durability

— Avoiding Waste

#### About Weekday

Weekday is a Swedish street/fashion brand influenced by youth culture and street style. Sustainability is at the core of Weekday and they aim to make responsible choices in everything they do.

#### About the collection

Many people have difficulty finding jeans that fit – our bodies are all different after all. Weekday have launched a service to change that and give everybody the chance to own a pair of made-to-measure jeans.

Customers get scanned in Weekday's Stockholm store. The technology plots 100,000 data points to build a virtual avatar. Then algorithm-based pattern generation creates a custom-fit garment. Customers personalise their jeans by choosing fit and trim options. The garments are then made and shipped either to store or direct to the customer.

How it meets the design strategy for  
**Non-Physical Durability**

#### Trend lifecycle

Jeans, in their intrinsic nature, are built for longevity and the fit options offered to customers are all quite classic.

#### Made to measure

Body Scan Jeans are the ultimate in made-to-measure. The machine plots 100,000 data points, which are used to create an avatar of the customer. Then an algorithm makes a pattern tailored to the customer's body. Our suppliers then sew the garment and ship it to the customer.

#### Customer co-creation

Weekday offer customers a range of customisation. They can pick slim or straight leg; low, mid or high waist; full or cropped length; blue or black wash; rivets and thread colours.

How it meets the design strategy for  
**Avoiding Waste**

#### On demand

Body Scan Jeans avoid waste by only producing what is ordered.

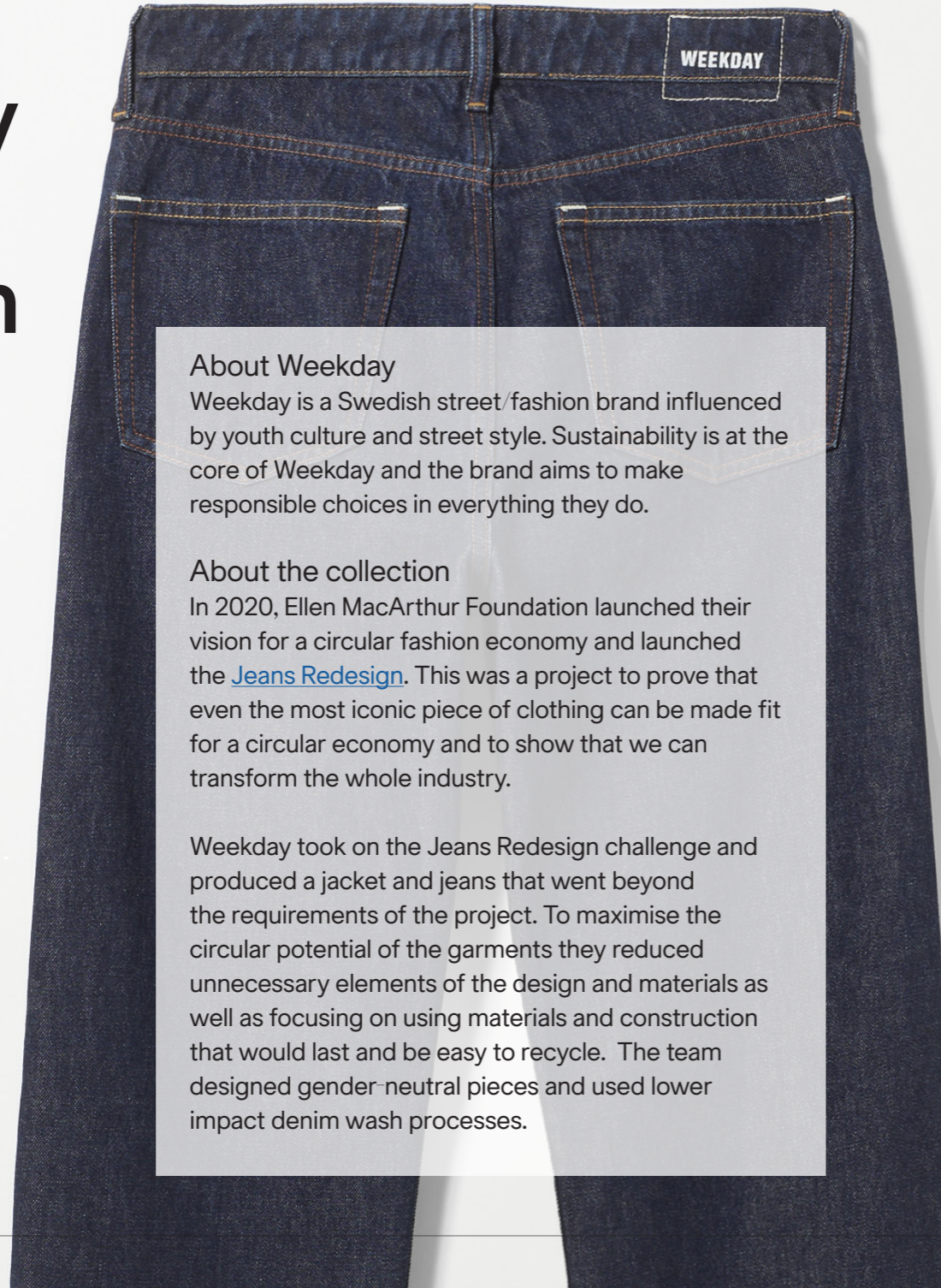
\*Body Scan is a collaboration between Weekday, H&M Laboratory and three external vendors including Global Change Award winner, Unspun.

# Case Study

# Weekday

# Jeans

# Redesign



## About Weekday

Weekday is a Swedish street/fashion brand influenced by youth culture and street style. Sustainability is at the core of Weekday and the brand aims to make responsible choices in everything they do.

## About the collection

In 2020, Ellen MacArthur Foundation launched their vision for a circular fashion economy and launched the [Jeans Redesign](#). This was a project to prove that even the most iconic piece of clothing can be made fit for a circular economy and to show that we can transform the whole industry.

Weekday took on the Jeans Redesign challenge and produced a jacket and jeans that went beyond the requirements of the project. To maximise the circular potential of the garments they reduced unnecessary elements of the design and materials as well as focusing on using materials and construction that would last and be easy to recycle. The team designed gender-neutral pieces and used lower impact denim wash processes.

## How it meets the design strategy for **Physical Durability**

### Material choice

Weekday chose materials that would maximise the durability of the products and tested the jeans for 30 home laundries, looking at tensile strength, tearing strength and dimensional stability.

### Fit and construction

On the jeans, Weekday redesigned the back-yoke and hang loops to have a whole new shape that would secure potential tearing issues.

### Construction and making

Replaced rivets with bar tacks to strengthen any stress points. Also revised the whole thread schedule to make sure that thicker thread was used to reduce tearing issues.

### Additional care instructions

Washing information was printed on the pocket lining to reduce the amount of fabric used. Weekday also included information on how to take care of denim in the best way and to let it age including advice that jeans should be washed less often.

## How it meets the design strategy for **Non-Physical Durability**

### Trend lifecycle

Right from the beginning, Weekday set out to create a gender-neutral design that would feel contemporary and modern both today and in 10 or 20 years. The outcome is a regular fit, both jacket and five pocket jeans.

## Iconic design

With the Jeans Redesign narrative built into the products, it encourages the customer to consider the concept of circularity and the potential for items to have another life after they have finished using them.

## How it meets the design strategy for **Increased Use**

### Fit for many

From the outset Weekday decided to take a gender-neutral approach to the collection. The regular fit jacket and five pocket jeans were designed to appeal to a wide audience.

## How it meets the design strategy for **Recycling**

### Material choice

Weekday opted to use cellulosic materials as far as possible and avoided elastane to ensure the products were as recyclable as possible.

### Mono-material: medium

Material composition exceeded 98% cellulose and included the shell, pockets and tencel thread. The buttons were the only non-cellulose parts of the products.

### Minimise additional trims

Trims were kept to a minimum on both the jacket and the jeans. Metal rivets were removed entirely and replaced with bar tacks from natural biodegradable thread. Washing and care instructions were printed on the pocket lining. The back patch was replaced with embroidery.

## DESIGN STRATEGIES FOLLOWED

— **Physical Durability**

— **Non-Physical Durability**

— **Increased Use**

— **Recycling**

# What's next?

Hopefully, you now have a better appreciation of what it takes to design a more circular product. Turning fashion circular is a huge undertaking and we all need to work together.

Please, let us know what you think about the guide. And if you used it in your design process, tell us how it went. We want to hear all your feedback, whether it's positive or negative. Please email us on [circulator@hmgroup.com](mailto:circulator@hmgroup.com)

Alongside this guide, we are building a digital tool that will allow you to follow the process and build your own circular products. Find out more here: [circulator.hmgroup.com](https://circulator.hmgroup.com)

This guide has been the result of collaboration between many people and teams across the H&M Group and beyond.

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Circular Business Model Team  
Divided Denim  
Environmental Team  
Global Material Team  
Group Compliance  
Innovation team  
Kids Boys Jersey  
Ladies Jersey  
Mens Casual  
Monki Task Force Team  
& Other Stories Paris Team  
Production Quality Teams  
Take Care Team

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**Project sponsors:**

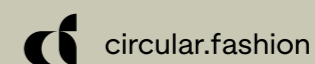
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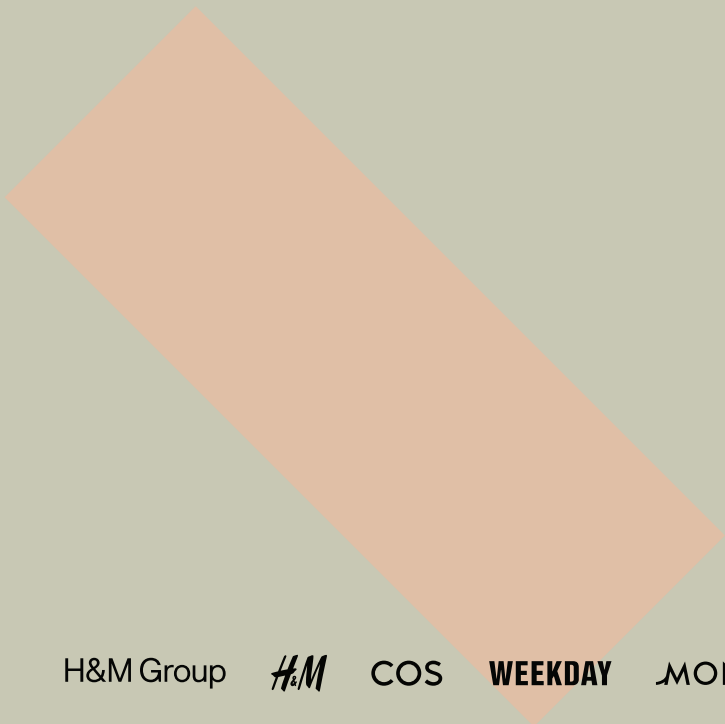
**Externally reviewed by:**

Make Fashion Circular team at Ellen MacArthur Foundation  
circular.fashion

“We contributed to the development of the Circular Product Guidelines with our experience of circular design and recycling projects, as well as insights from our developed frameworks and tools. We are excited about this exchange, amplifying each other’s expertise, experiences and tools to arrive at common industry consensus on product circularity, actionable solutions and leverage collaborative impact”

Jonna Haegglom / Circular Design Strategy Lead / circular.fashion.





Remember to check out our digital tool we are building to accompany this guide:



H&M Group *H&M* COS **WEEKDAY** MONKL *H&M*HOME *& other Stories* ARKET **AFOUND**