

# The Jeans Redesign Guidelines



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# 1. Introduction

## **This document sets out the specific requirements for jeans that are produced as part of The Jeans Redesign.**

This work builds upon extensive research from the Ellen MacArthur Foundation's 2017 report [A new textiles economy: redesigning fashion's future](#), as well as existing efforts by industry players to improve jeans production, including C&A and Fashion For Good's open source guide Developing Cradle to Cradle Certified™ Jeans.<sup>1</sup>

In February 2019, Make Fashion Circular brought together a group of industry experts in an intensive workshop, to collaboratively test and further develop a common vision of what good looks like for jeans. The result of this work is a set of Guidelines, co-developed with representatives from brands, manufacturers, fabric mills, collectors, recyclers, and academics, that define a starting point for the industry to design and produce jeans in accordance with the principles of a circular economy. The Guidelines help organisations make progress, at scale, towards a circular economy for fashion.

The first version of The Jeans Redesign Guidelines – published in July 2019 – was based on four areas: durability, material health, recyclability, and traceability and saw over 70 organisations create jeans in line with the principles of a circular economy.

This second version of the Guidelines has been aligned with the three focus areas of the [Vision of a circular economy for fashion](#), published in 2020 by the Ellen MacArthur Foundation with input from leading organisations across the fashion industry. Based on the three focus areas, jeans are designed to be used more, made to be made again, and made from safe and recycled or renewable inputs.

This version of the Guidelines has also been updated to ensure that they remain ambitious and consider the latest advancements in the industry. To ensure jeans can be used more, a guidance on circular services and business models has been introduced as an optional criteria. In addition, a minimum quantity of recycled content has been made mandatory.

This document lays out the definition of terms in each area, the detailed requirements that must be achieved as a minimum, and the process for validating these achievements.

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<sup>1</sup> [https://fashionforgood.com/wp-content/uploads/2018/08/FashionForGood\\_Denim-Case-Study-FINAL-1.pdf](https://fashionforgood.com/wp-content/uploads/2018/08/FashionForGood_Denim-Case-Study-FINAL-1.pdf)

# 2. Participation

**Brands, retailers, garment manufacturers, and fabric mills can apply to get involved in the following ways:**

## **Join:**

- Sign the Participation Form and the Terms of Participation. Participants agree to produce a minimum number of their total jeans or fabric output in accordance with the Guidelines.

## **Implement:**

- Brands, retailers, and garment manufacturers produce jeans that are aligned with the Guidelines and make them available on the market while fabric mills produce fabric that is compliant with the Guidelines.
- Drive actions to bridge innovation gaps and raise the industry ambition level.

## **Report:**

- Brands and garment manufacturers report annually on the number of redesigned jeans produced according to the Guidelines to Ellen MacArthur Foundation and how these requirements have been met.
- Fabric mills report the amount of fabric produced according to the Guidelines and how these requirements have been met.

# 3. Validation

**To take part in the Project, Participants must specify how their jeans or fabric meet The Jeans Redesign Guidelines, and how they intend to accelerate progress against the Guidelines beyond the minimum requirements set out.**

Participants are required to detail the validation methods that are used to confirm the Guidelines have been met. This information is provided on the Participation Form and, unless otherwise stated, is publicly disclosed as part of the reporting progress by the Ellen MacArthur Foundation.

Participants are encouraged to disclose the percentage of jeans produced in their assortment that meet the Guidelines in either their annual report or sustainability report to offer a benchmark for progress. In addition, Participants are requested to disclose the number of their jeans produced that meet the Guidelines to Ellen MacArthur Foundation which publishes the figure as an aggregated number for all Participants.

During the reporting period, Participants are required to submit the Report Form to Ellen MacArthur Foundation to confirm that they have met the initial agreed specifications, to share any deviations from this original specification, and to provide details of how these meet each element of the criteria. To comply with its charitable objectives, the Ellen MacArthur Foundation makes the information submitted on the Report Form public on its website.

Ellen MacArthur Foundation encourages third-party verification or assurance of reported data where appropriate. If Participants confirm this has been obtained, it is included alongside the Participant's reported data. Please note that the Ellen MacArthur Foundation does not verify or audit the data provided to it, and this is reported on an 'as is' basis.

Participants are asked to provide high-level information about the type of third-party organisation performing the verification or assurance exercise, and any plans for future development of verification or assurance processes for the data reported.

It is the responsibility of each Participant to make available, on request by the Ellen MacArthur Foundation, information on the third-party verification that confirms compliance with any element of the requirements set out in Guidelines.

# 4. Vision of a circular economy for fashion

**A circular economy is a bigger idea than incrementally reducing the harm of our current model. It tackles the root causes of global challenges such as climate change, biodiversity loss, waste and pollution, while creating opportunities for better growth.**

It is underpinned by three principles, all led by design: eliminate waste and pollution, keep products and materials in use, and regenerate natural systems.

A circular economy for fashion creates better products and services for customers, contributes to a resilient and thriving fashion industry, and regenerates the environment. For fashion, it means ensuring that products (apparel, footwear, accessories) are:

- Used more, where business models that keep products at their highest value, like rental and recommerce, are the norm across the industry. Products are designed and manufactured to last, and align with the business model that will deliver them. Businesses empower users with the necessary knowledge, tools, and services to maintain the physical and emotional durability of their products.
- Made to be made again, where products and their materials are designed and manufactured to be disassembled so that they can be reused, remade, recycled. Products are in practice collected and sorted to be reused, remade, recycled, and – where relevant and after maximum use and cycling – composted.
- Made from safe and recycled or renewable inputs, where products and their materials are free from hazardous substances. Production and use of products do not discharge hazardous substances into the environment. Production is fully decoupled from the consumption of finite resources: the need for virgin resources is minimised by increasing the use of existing products and materials. Where virgin input is needed it is from renewable feedstocks sourced using regenerative production practices.

In delivering the vision, the rights and equity of all people involved in the fashion industry are prioritised. A circular economy for fashion creates new opportunities for growth that are distributed, diverse, and inclusive.

This vision offers a target state to innovate towards. Realising it will require collaborative efforts by industry and government, significant investments, large-scale innovation, transparency and traceability. Yet, by taking actions together to get started with jeans today, it can scale fast.

# 5. Guidelines

## 5.1 Jeans are used more

Increasing the average number of times clothes are worn presents a significant opportunity to capture value and design out waste in the clothing industry. Designing and producing clothes that last longer and offering them via business models that increase their use would shift the perception of clothing away from being a short-lived item to being a durable product. In addition to implementing design changes, the way clothes are treated during use can significantly increase the amount of time for which they can be worn.<sup>2</sup>

### Jeans are designed and manufactured to last

Research for The Jeans Redesign with multiple brands, manufacturers, and recyclers did not reveal a consistently used method or baseline across the fashion industry to measure and compare the durability of garments. On an individual basis, companies test for various performance indicators such as tensile strength, abrasion resistance, and colour fastness but there is no common measure. Therefore, the Guidelines below offer a starting point for the industry to move towards alignment on durability.

Durability is the ability of a physical product to remain functional and relevant over time when faced with the challenges of normal operation. Durability can generally be categorised into two broad aspects which are equally important:

- **Physical durability:** considers garment construction and component reinforcement in order to create products that can resist damage and wear.
- **Emotional durability:** considers the product's ability to stay relevant and desirable to the user, or multiple users, over time.

The following measures define the minimum requirements of durability that must be met:

#### **a. Jeans are able to withstand a minimum of 30 home laundries.**

Jeans produced in accordance with the Guidelines are made to withstand a minimum of 30 home laundries. This means that after being subject to 30 home laundries, they still retain their ability to meet the Participant's usual minimum durability requirements for their 'as-new' jeans. Participants are required to provide details about what tests are carried out after the 30 home laundries (for example, tensile strength, tear strength, dimensional stability, abrasion resistance, seam strength, etc.).

#### Further explanatory notes:

- *The Guidelines primarily focus on ensuring physical durability but acknowledge the importance of emotional durability to increase the number of times a garment is worn.*
- *It is intended that both the physical and emotional durability are taken into account by Participants.*
- *This requirement applies to a product over multiple uses and users, and acknowledges repair, maintenance, and other services as means to increase overall durability.*
- *Examples of standards available to test the above dimensions include, but are not limited to: ISO, AATCC, ASTM.*

<sup>2</sup>See A. McLaren et al., [Clothing longevity perspectives: exploring consumer expectations, consumption and use](#)

## Businesses empower users with the necessary knowledge, tools, and services to maintain the physical and emotional appeal of their jeans.

The following measures define the minimum requirements of product care that must be met:

### **b. Provide information on how to care for jeans visibly on the garment.**

Jeans produced in accordance with the Guidelines include an easily accessible label that states:

- Information on reducing washing frequency<sup>3</sup>
- Instructions to wash at low temperatures (30°C or below)<sup>4</sup>
- Instructions to avoid tumble drying<sup>5</sup>

Further explanatory notes:

- *This information can be included as part of the legally required label or as an additional label. This must be attached to the jeans themselves, and not into the hangtag.*
- *Labels sewn into the jeans are included in the total textile composition.*

## Provide jeans via services and business models that keep jeans at their highest value, like rental and recommerce.

The following measures define the services and business models that can be implemented:

### **c. Optional - Offer jeans to the market via services and business models that keep jeans at their highest value to ensure they can be used more.**

Jeans produced in accordance with the Guidelines can be delivered through circular business models, or enabling services, that ensure jeans are kept at their highest value. This is currently an optional element of the guidelines. Business models and services for this purpose include, but are not limited to:

- Business models and incentives to support reuse. Reuse refers to the repeated use of a garment, either by a single user or by multiple users. Examples include, but are not limited to, rental and recommerce.
- Repair services to ensure garments can withstand long-term use.
- Take-back or collection programmes to allow jeans to be easily recovered, remade, and recycled.

<sup>3</sup>Expert interviews during Jeans Redesign workshop. See Chip Bergh, President and CEO, Levi Strauss [video interview](#)

<sup>4</sup>DEFRA, Reducing the environmental impact of clothes cleaning (2009), p23

<sup>5</sup>DEFRA, Reducing the environmental impact of clothes cleaning (2009), p23

## 5.2. Jeans are made to be made again

The way clothes are made, including the way fabric is constructed and chosen, rarely considers the recyclability of the materials once they are no longer in use. Converging towards an optimised palette of materials – including blends where these are needed for functionality – and developing these alongside highly efficient recycling processes for those materials, is a crucial step in scaling up recycling. This also includes developing new materials where no current ones are suitable to provide both the desired functionality and recyclability.<sup>6</sup>

Based on research for the 2017 report *A New Textiles Economy* and interviews with multiple recycling specialists (over 10 recyclers – both chemical and mechanical), the Guidelines align jeans design and construction with the preferred feedstocks of currently available and commercially adopted mechanical recycling and emerging chemical recycling processes. Additional research has been conducted following the first two years of *The Jeans Redesign* to review the landscape of recycling in light of recent advances in technology.

Recyclability refers to the ability to keep materials in use once a product and its components can no longer be reused or repaired. In a circular economy, products and materials are circulated at their highest value at all times. Within recycling, this principle results in a general order of preference for recycling types, favouring techniques that retain most embedded value. Yet, this should not be seen as a strict hierarchy for determining the best option for every single product:

- Fibre recycling is performed by sorting garments by colour and material which are then shredded and processed back into fibres. This type of recycling is also referred to as ‘mechanical fibre recycling’.
- Polymer recycling takes fibres back to the polymer level, destroying the fibres but keeping the chemical structure of the material intact. This can be achieved by either melting and extruding textiles (‘mechanical polymer recycling’), or by extracting the polymer with a solvent (‘chemical polymer recycling’).
- Chemical monomer recycling breaks polymers down into individual monomers or other constituent materials that can then serve as feedstock to produce virgin-quality polymers.

### Jeans are designed and manufactured so that they can be effectively disassembled, and remade, or recycled

The following measures define the minimum requirements of recyclability that must be met:

#### **a. Include a minimum of 98% cellulose-based fibres, by weight, in the total textile composition**

To ensure materials can be recycled at the highest quality and value, all the fabrics used to make the jeans are required to include a minimum of 98% cellulose-based fibres by weight. Mono-material garments should be prioritised over garments made out of multiple material blends. The aim is to ensure that the choice of materials aligns with available recycling technology so that it can practically be recycled after use.

<sup>6</sup> Based on extensive expert interviews conducted for ‘A new textiles economy: redesigning fashion’s future, p.92 (2017) and *The Jeans Redesign*’ and additional research from [Accelerating Circularity](#).

Further explanatory notes:

- Cellulose-based fibres include, but are not limited to: cotton, hemp, linen, lyocell, modal, and viscose.
- Non-cellulose based materials include, but are not limited to, plastic-based fibres, for example, elastane, nylon, and polyester.
- The total textile composition includes fabric, interlinings, pockets, and labels.
- The total textile composition excludes threads and zipper tape.
- The total textile composition includes textile components but does not include the 'hardware' components. These components need to meet the requirements indicated in the section 5.2.c., 5.2.d, 5.2.e, and 5.2.f of these Guidelines.
- Recycled content is included in the requirements of total textile composition.
- Fabric that has already been produced and that is not damaged (e.g. leftover fabric, often referred as to deadstock or overstock) can be used as it is (i.e. without being shredded), provided it meets the 98% minimum cellulosic content, as well as requirements indicated in sections 5.1.a. and 5.3.a. of these Guidelines. In this scenario, such fabric is not accounted for as recycled content: see section 5.3.g. on recycled content for more details on what can be accounted for as recycled content.
- Any additional fibres containing tracking or tracing technology must not disrupt mechanical or chemical recycling processes.

**b. Optional – Use cellulose-based threads.**

Sewing threads made from non-cellulosic materials might represent a problem for recyclers today. As a consequence, entire seams are often cut off to prevent non-cellulosic threads from disrupting the recycling process. The use of cellulosic threads represents a starting point for the industry to enable recyclability without any fabric loss.

Further explanatory notes:

- Dissolvable threads can be used as an alternative to meet this requirement, provided that their disassembly instructions are clearly provided on the garment.

**c. Ensure any components added to the fabric are easy to disassemble.**

Jeans are designed and manufactured in such a way that allows all components that are added to the fabric to be disassembled for reuse or recycling. Components that cannot be easily disassembled for removal can cause considerable waste at the recycling stage as they are often removed by cutting. When disassembly is needed, this can be enabled by an efficient process with minimal or no fabric loss.

Any additional materials added to the fabric, including components, fastenings, accessories, or digital technologies should be designed to be easily removed allowing for reuse and recycling at the end of use. To maximise the amount of fabric that can be recycled, use design strategies that allow fastenings to be disassembled for reuse or recycling (see optional requirements 5.2.d., 5.2.e., and 5.2.f.).

Rivets are difficult to remove for recyclers. As a consequence, larger parts of the upper fabric of jeans are cut off and landfilled or incinerated. To maximise the amount of fabric that can be recycled, ideally metal rivets will not be used (see optional requirement 5.2.f.).

Further explanatory notes:

- For this version of the Guidelines, cutting is allowed only for components that have no disassembly option commercially available today.
- Any additional materials, including accessories, or digital technologies should be designed to be easily removed allowing for reuse and recycling at the end of use.

**d. Optional – Use removable buttons.**

Use design strategies that allow buttons to be disassembled for reuse or recycling. This includes fastenings (e.g. removable buttons) that can be easily removed, thus enabling other preferred reuse or recycling routes.

**e. Optional – Use removable zippers.**

Use design strategies that allow zippers to be disassembled for reuse or recycling. This includes fastenings (e.g. removable zippers) that can be easily removed, thus enabling other preferred reuse or recycling routes.

**f. Optional – Ensure rivets are removed entirely.**

To maximise the amount of fabric that can be recycled, rivets are not used. This necessitates designing without rivets that disrupt recycling technologies, so that disassembly is not needed for these components. Alternatives to rivets exist and are adopted in the industry today.

## Jeans are in practice collected and sorted to be reused, remade, or recycled

Correct labelling and material identification is paramount to accurately sort collected clothing for reuse and recycling. In order to continue to realise the benefits of jeans produced in alignment with The Jeans Redesign Guidelines after their first user, it is necessary to identify them as part of the Project.

Recycling processes rely on accurate detection of materials and sorting to ensure well-defined material streams (either a single material or well-defined combinations of materials, including blends). Universal tracking and tracing technologies – integrated into the design of clothing and aligned to processes across the value chain – could support the identification of materials in the system.

The following measures define the minimum requirements of traceability that must be met:

**g. Enable easy identification of recyclable jeans during collection and sorting.**

Effective sorting of products at scale is made possible by the availability of accurate information about the product's capability to be recycled (e.g. textile composition, disassemblable components). Upon access to this information products that are not suitable to be reused or remade can be directed to the appropriate recycling stream.

This information can be made available to the sorter via labelling, or technologies incorporated into the garment. Examples of digital technologies that can be incorporated into the garment to enable sorting include: RFID, QR codes, and traceable fibre technology, among others.<sup>7</sup>

<sup>7</sup>A number of companies are currently developing such technologies including Eon, circular.fashion, and others (list cannot be extensive).

#### Further explanatory notes:

- Traceability refers to being able to accurately identify the material composition of the jeans.
- Information to be included for tracking and tracing is the level of chemical compliance (what chemicals have been used to produce the jeans).
- Traceability includes identifying the jeans as being compliant with the Guidelines.
- Technology added to the jeans must not interfere with the recycling process (either by compatible design or by easy removal), and be able to withstand washing, wear and tear, while retaining full functionality until the end-of-use.
- For digital sorting technologies to work in practice, sorters must be equipped with appropriate tools to read the information stored into the garment, either with a manual or an automated process.

## **5.3. Jeans are made from safe and recycled or renewable inputs**

Material health refers to safety – with respect to human health and the environment – of the materials and other substances that make up a product and that are used in the production process, ranging from raw material generation to after-use treatment. As a first step to improving material health, natural resources can be grown using regenerative (or in the shorter-term, organic or in transition) farming methods, and the most harmful chemicals can be removed from production processes and replaced with safe alternatives. Such actions help ensure that the constituent materials of a product can be safely channelled through either a biological or a technical after-use pathway.

Substances used at all stages of the production process often remain in textiles, both intentionally and unintentionally<sup>8</sup>. This raises concerns due to the adverse effects they can have on people and the environment. Reported impacts range from allergic reactions, respiratory diseases and increased instances of cancer in humans to the loss of aquatic life<sup>9</sup>. Some of the chemicals used can persist in the environment and may accumulate over time.<sup>10</sup>

Cotton production uses 2.5% of the world's arable land, but accounts for 16% of all pesticides used<sup>11</sup>, and in India 50% of all pesticides are used for cotton production.<sup>12</sup> Chemicals used in the production of cotton could cause serious damage to the environment and have negative health impacts on farmers, with reported cases of acute poisoning from pesticides.<sup>13</sup>

The presence of hazardous substances has the potential to disrupt the recycling process and lead to the continued circulation of – and therefore exposure of people to – these substances.<sup>14</sup> Rapidly eliminating hazardous substances from textiles production is required to enable healthy flows of materials in a circular system, along with methods to remove those that remain in circulation from existing textiles.

<sup>8</sup> Greenpeace, *Dirty laundry: unravelling the corporate connections to toxic water pollution in China* (2011), p.70

<sup>9</sup>KEMI, *Chemicals in textiles: risks to human health and the environment* (2014); Greenpeace, [Eleven flagship hazardous chemicals](#); Changing Markets Foundation, *Dirty fashion: How pollution in the textiles supply chain is making viscose toxic* (2017)

<sup>10</sup>See Greenpeace, [Eleven flagship hazardous chemicals](#)

<sup>11</sup>See Rodale Institute, [Nine ways you may not realise cotton is in your food](#)

<sup>12</sup> D. Maxwell et al., *State of the apparel sector report: Water*, GLASA (2015), p.14; K.R. Dey et al., *Impact of pesticide use on the health of farmers: a study in Barak valley, Assam* (2013)

<sup>13</sup> Nanda Kishore Kannuri and Sushrut Jadhav, *Generating toxic landscapes: impact on well-being of cotton farmers in Telangana, India* (2018), *Anthropology and Medicine*, 25:2, 121–140, DOI: [10.1080/13648470.2017.1317398](https://doi.org/10.1080/13648470.2017.1317398); Pesticide Action Network, *Is cotton conquering its chemical addiction? A review of pesticide use in Global Cotton Production* (2017), p.49. See Pan-UK, [Cotton's chemical addiction](#)

<sup>14</sup>Based on expert interviews. See EPEA, [Mechanical and chemical recycling of plastics](#)

## The production of jeans is safe for the long-term health of people and ecosystems.

The following measures define the minimum requirements of material safety that must be met:

### **a. Jeans are made with chemicals that comply with Level 1, Zero Discharge Of Hazardous Chemicals Manufacturing Restricted Substance List as a minimum**

The Zero Discharge of Hazardous Chemicals (ZDHC) Manufacturing Restricted Substance List (MRSL) is a list of chemical substances banned from intentional use in facilities that process textile materials. This includes not only chemicals used specifically for production, but also cleaning supplies, machine cleaners, lubricants, etc. that are in use in the facility for maintenance and support. The ZDHC MRSL sets restrictions on trace concentrations for banned chemical substances that are not intentionally used but may be found as unintended contaminants within a commercial chemical formulation.<sup>15</sup>

Further explanatory notes:

- *Companies can verify conformance of their chemical formulations with ZDHC requirements of at least level 1, ZDHC MRSL as a minimum, through the ZDHC 'Gateway' and with ZDHC Accepted\* Conformance Indicators for Verification.<sup>16 17</sup>*
- *ZDHC Level 1 is a minimum requirement, as such organisations are encouraged to go beyond this.*

### **b. Optional – Employ additional methods or tools to evaluate chemicals in use and support the identification of safer chemical alternatives.**

In a circular economy, substances that are hazardous to health or the environment are designed out of processes to allow for safe material circulation and ensure that no pollutants are released into the environment. This can require evaluation of chemicals currently used during fabric and garment production and then, where needed, the identification and subsequent use of safer alternatives, eliminating hazardous substances.

Further explanatory notes:

- Examples of methods that could be used by organisations to verify safe chemistry beyond ZDHC Level 1 include, but are not limited to: Cradle to Cradle Certified™, screened chemistry methodology, Bluesign.
- While not constituting a third-party verification, other tools in the industry such as Chem-IQ, Jeanologia and ChemSec, can support self-assessment of chemical selection.<sup>18</sup>

<sup>15</sup> See Roadmap to Zero, [MRSL conformance guidance](#).

<sup>16</sup> See Roadmap to Zero, [Gateway](#)

<sup>17</sup> <https://downloads.roadmaptozero.com/input/MRSL-certifiers>

<sup>18</sup> See [Chem-IQ](#), [Jeanologia](#) and [ChemSec](#)

**c. The use of the following chemicals or processes is prohibited.**

• **Conventional electroplating.** Electroplating is the process of coating with metal by means of an electric current. The major environmental issues associated with electroplating activities are the generation of hazardous wastes and effluent disposal as well as odour and noise.<sup>19</sup>

• **Stone finishing.** The use of pumice stones has several damaging effects and negative factors, such as: decreasing fabric quality, damaging the washing machine, causing a build-up of sludge that needs to be disposed of in an appropriate manner, breaking down into smaller parts during washing that get caught in pockets and other parts meaning garments need to be washed several times to get rid of residue, and a large quantity of stones are needed for washing<sup>20</sup>

• **Potassium permanganate (PP).** Potassium Permanganate (PP) is a strong oxidising agent used to create different finishes on jeans. The use of PP decreases performance and durability and is thus counterproductive to The Jeans Redesign goal of increased durability.<sup>21</sup> PP in contact with skin can cause irritation, burning, and pain; PP coming in contact with eyes carries the risk of a permanent loss of vision. PP is also an environmental hazard, especially for marine pollution and can bioaccumulate in the food chain<sup>22</sup>

• **Sand blasting.** Sand blasting is a process used to create a distressed look on jeans. Sandblasting reduces the durability of the garment and is dangerous for workers' health, with risks such as the potential for serious damage to the respiratory passages.<sup>23</sup>

**d. The fabric mill implements the ZDHC Wastewater Guidelines, including testing and reporting in accordance with the latest version of that document<sup>24</sup> as a minimum.**

Although the Wastewater Guidelines apply across the textile and footwear industry, at this point in time they are only mandatory for fabric mills.<sup>25</sup>

The fabric mill has implemented the ZDHC wastewater guidelines and complies, as a minimum, to the defined Foundational limits. This includes testing and reporting in accordance with the latest version of that document.

**e. The water volume used for denim fabric is a maximum of 30 litres per metre (L/m).**

The way denim is made is often water-intensive, but practices are improving, and mills are continuously lowering the amount of water needed, while some are recycling their water. Processes to be included for the computation of the water volume are fabric dyeing, sizing, and finishing processes.

Further explanatory notes:

- *Water volume refers to the sum of freshwater and recycled water.*
- *Water volume refers to fabric production only. It does not include water used for yarn and fibre production.*
- *The volume of wastewater that is produced must be treated as indicated in the section 5.2.d. of these Guidelines.*

<sup>19</sup> See Science Direct, [Electroplating](#).

<sup>20</sup> International Journal of Engineering Research, Volume No.6, Issue No.12, pp.499–501. See Science Direct, Stone size

<sup>21</sup> See Semantics Scholar, [Investigation of the Influence of Potassium Permanganate on Denim Jeans Processing During Acid Wash](#)

<sup>22</sup> See New Jersey Department of Health and Senior Services, [Hazardous substances fact sheet](#)

<sup>23</sup> See Clean Clothes, [Fashion: a victim's report on sandblasted denim](#). Levi Strauss, [It's time to ban sandblasting](#).

<sup>24</sup> See [ZDHC Wastewater Guidelines V1.1](#)

<sup>25</sup> See ZDHC Wastewater Module

## Jeans are made from renewable or recycled materials.

The following measures define the minimum requirements for renewable and/or recycled materials that must be met:

### **f. Source cellulose-based fibres that have been produced using regenerative, organic or transitional methods.**

All virgin cellulose-based fibres are sourced from regenerative, organic, or transitional methods. For man-made cellulosic fibres, responsible methods are accepted, as defined below.

#### Further explanatory notes:

- Cellulose-based fibres include, but are not limited to: cotton, hemp, lyocell, modal, and viscose.
- Regenerative production practices build soil health and carbon content, increase water quality and biodiversity, and improve the resilience of ecosystems.<sup>26</sup>
- The longer-term aim is to source all cellulose-based fibres from regenerative sources.
- 'Transitional' organic and regenerative methods, also referred to as 'in conversion' or 'in-transition', are all included.<sup>27</sup>
- Examples of methods that could be used to verify cellulose-based fibres from organic farming methods include, but are not limited to:
  - Global Organic Textile Standard (GOTS): The aim of GOTS is to define worldwide recognised requirements that ensure organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible manufacturing up to labelling in order to provide a credible assurance to the end-consumer.<sup>28</sup>
  - Organic Content Standard (OCS): The goal of the OCS is to ensure trust in organic content claims. The OCS verifies the presence and amount of organic material in a final product. It provides a chain of custody system from the source of the organic raw material to the final product through certification.
- Examples of methods that could be used to verify man-made cellulosic fibres from responsible methods include, but are not limited to:
  - Canopy's Hot Button Ranking<sup>29</sup>: This tool evaluates man-made cellulosic fibre producers based on criteria related to fibre innovation, forest conservation, forest management, chemical management, and third party verification audits.

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<sup>26</sup> See Vision of a circular economy for fashion, [here](#)

<sup>27</sup> See Textile Exchange, [In-Conversion/Transitional Cotton At-a-Glance](#)

<sup>28</sup> See Global Standard, [General description](#)

<sup>29</sup> Suppliers engaged in fibre production as part of The Jeans Redesign should meet the Canopy evaluation with at least 25 buttons as part of the latest "Hot Button Ranking", that can be accessed [here](#). This evaluation encompasses both sourcing and production for MMFC.

**g. Include a minimum of 5% recycled content on average (by weight) in the total fabric composition (for fabric mills) or average (by weight) in the total textile composition (for brands, retailers, garment manufacturers) of every garment.**

Recycled material refers to both post-consumer and pre-consumer content, with both coming from recycling of textile products.<sup>30 31</sup>

Achieving a minimum of 5% recycled content on average (by weight) in the total textile composition of every garment will require cross-value chain collaboration and innovation. By working together fabric mills, garment manufacturers, brands, and retailers can take action and make joint progress to ensure jeans are made from recycled materials.

Further explanatory notes:

- *For the purpose of this project, recycled content refers to textile to textile recycling only.*
- *The total textile composition includes fabric, interlinings, pockets, and labels.*
- *The total textile composition excludes threads and zipper tape.*
- *Recycled plastic-based fibres from PET bottles or other industries are excluded.*
- *Recycled man-made cellulosic fibres (for example, those from chemical recycling of cotton into viscose) can be used provided that a verification method (such as GRS or RCS) is used.*
- *Recycled content does not have to be material that was originally produced using regenerative or organic farming methods.*
- *Post-consumer recycled content should be prioritised over pre-consumer recycled content.*
- *Both post-consumer recycled content (PCRC) and pre-consumer recycled content (also referred to as post-industrial recycled content) can be included as part of the minimum 5% recycled content by weight.*
- *Fabric that has already been produced and is damaged (e.g. manufacturing defects) may be shredded and accounted for as pre-consumer recycled content, provided that a verification method (such as GRS or RCS) is used.*
- *Recycled content is part of the total textile composition, and must therefore meet recyclability requirement 5.2 a. of these Guidelines. Examples of validation include, but are not limited to:*
  - *The Global Recycled Standard (GRS). A full product standard to verify and track recycled raw materials through the supply chain. It also includes processing criteria to prevent the use of potentially hazardous chemicals, and verifies positive social or environmental production at the facilities. The GRS uses the chain of custody requirements of the Content Claim Standard (CCS).<sup>32</sup>*
  - *The Recycled Claim Standard (RCS). A chain of custody standard to verify and track recycled raw materials through the supply chain. It does not address the use of chemicals or any social or environmental aspects of production beyond the integrity of the recycled material. The RCS uses the chain of custody requirements of the Content Claim Standard (CCS).<sup>33</sup>*

<sup>30</sup> Post-consumer recycled content is material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. (Source: ISO 14021:2016(en) - 'Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)', based on Section 7.8.1. Usage of terms)

<sup>31</sup> Pre-consumer recycled content, also referred to as post-industrial recycled content, includes materials diverted from the waste stream during a manufacturing process. (Source: ISO 14021:2016(en) - 'Environmental labels and declarations – Self-declared environmental claims (Type II environmental labelling)', based on Section 7.8.1. Usage of terms)

<sup>32</sup> [See Textile Exchange, Integrity](#)

<sup>33</sup> [See Textile Exchange, Integrity](#)

# Appendix I

## Common definitions for The Jeans Redesign

**Reuse:** Operation by which a product or component is used repeatedly and for long periods of time, for its original purpose, without being significantly modified, remade, or recycled. Products might need to be 'prepared for reuse', which often involves cleaning, repairs, or small modifications so that they can continue to be used throughout time and multiple users.

**Repair:** Operation by which a faulty or broken product or component is returned back to a usable state.

**Design for disassembly:** Design principle that enables the product to be taken apart in such a way that allows components and materials to be reused, remade, or recycled.

**Remaking:** Operation by which a product is created from existing products or components. This operation can include disassembling, re-dyeing, restyling, and other processes to improve emotional and physical durability.

**Recyclability:** The ease with which a product or material can be recycled in practice and at scale.

**Recycling:** The process of reducing a product back to its basic material level, reprocessing those materials, and using them in new products, components or materials.

**Traceability:** The ability to trace products, components, and materials, as well as the social and environmental conditions in which they were made, along the whole supply chain, including after use.

**Transparency:** The ability to make information (for example on product specifications, chemical inputs, materials used, and production practices) available to all actors of the supply chain (including users), allowing common understanding, accessibility, comparability, and clarity.

**Hazardous substances:** Compounds exhibiting intrinsically negative properties such as being persistent, bioaccumulative and toxic (PBT), very persistent and very bioaccumulative (vPvB), carcinogenic, mutagenic and toxic for reproduction (CMR), or endocrine disruptors (ED).

**Regenerative production practices:** Regenerative production practices build soil health and carbon content, increase water quality and biodiversity, and improve the resilience of ecosystems.

**Organic:** Organic cotton is cotton that is produced and certified to organic agricultural standards. Its production sustains the health of soils, ecosystems, and people by using natural processes rather than artificial inputs. Importantly, organic cotton farming does not allow the use of toxic chemicals. Instead, it combines tradition, innovation, and science to benefit the shared environment and promote a good quality of life for all involved.

**In transition or transitional:** transitioning production to organic certification usually takes place over a 36-month (three-year) period, unless using virgin land. It is an ongoing cycle of shifting conventional farming practices to an organic management system until the land qualifies to be certified organic under national or international organic standards. Also referred to as in-conversion cotton.

**Recycled material:** Material that would have been disposed of as waste, but is instead reprocessed by means of a manufacturing process and made into a final product or into a component for incorporation into a product.

# Disclaimer

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None of the guidelines will, on its own, be sufficient to realise a circular economy for fashion. However, all of them contribute towards that vision, and, collectively, they are an important and necessary step forward. These guidelines are considered a 'minimum bar'. All Participants are encouraged to take additional and/or more ambitious steps that contribute to achieving the vision. Regularly, the 'minimum bar' of the Guidelines will be reviewed and, where relevant and after consultation, raised to ensure The Jeans Redesign continues to represent true leadership.

If you would like more information about participation, please contact [jeans@ellenmacarthurfoundation.org](mailto:jeans@ellenmacarthurfoundation.org)