Interestingly, the French word for sustainability is *durabilité*. And, of course, durability is at the heart of sustainability—isn’t it?

If a product is durable, it will last for a long time and this means that it won’t be discarded quickly, which keeps it out of the landfill longer. If it doesn’t need to be replaced often, the product’s total environmental impact is reduced across its lifecycle.

On the other hand, if something is designed to last for a long time, does that mean that it won’t break down for a long time after it has been discarded—and if so, how can that be viewed as sustainable? Take plastic bags, for example. In the case of a product that is designed to be thrown away after relatively few uses, biodegradability is better than durability. So maybe it all depends on context.
Durability vs. Sustainability

Durability is defined as the ability of a product to remain functional without the need for excessive maintenance or repair, whereas sustainability may be defined as the ability to meet current needs without compromising the ability of future generations to meet their own needs.

For the textile and apparel industry to produce goods which remain functional without compromising the ability of future generations to meet their own needs, this means ensuring:

- **sustainable sourcing**—choosing organic, biodegradable, recyclable, reclaimed, or recycled fabrics and components, or selecting fabrics that have been specially developed as regenerative or sustainable;

- **sustainable design**—developing a product which can be easily dismantled for reclamation and/or recycling, or designing a high-quality product with an extended life; and

- **sustainable chemicals**—making use of modern, easy-care finishes, which reduce laundering requirements and which impart stain resistance in order to keep products in use longer; reducing waste and pollution during manufacturing; and processing fabric without the use of toxic chemicals, such as bleach and toxic dyes.

Sustainable production, processes, and consumption are also essential when taking a responsible approach to sustainability, as is corporate social responsibility.

Sustainable Sourcing

Sustainable sourcing—using organic, biodegradable, reclaimed, recycled, or recyclable materials—enables the industry to reduce:

- **carbon emissions**—because the carbon impact of recycled fibers is lower than the carbon impact of producing virgin fibers;

- **use of hazardous synthetic pesticides and artificial fertilizers**—resulting in cleaner, safer water and healthier farm workers; and

- **landfill tax and other waste management and disposal costs**—because the fibers are being reused.

As people reject the concept of fast fashion and disposable products, there will be a major shift toward apparel that can be serviced and which lasts. Sitka Gear produces Gore-Tex hunting waders which are being sold as “the last wader you’ll ever own.” We offer a life-time guarantee on the product from manufacture defect and will fix them if they ever fail. Our goal is for Sitka waders to never end up in a landfill.

—Christina Rapa, textile specialist, W L Gore and Associates Inc., Sitka Gear
Organic

Organic materials, such as organic cotton fibers, are produced in a way which sustains the health of soils, ecosystems, and people by using natural processes instead of artificial inputs. The Global Organic Textile Standard (GOTS) is a leading textile processing standard for organic fibers, including ecological and social criteria, backed up by independent certification of the entire textile supply chain.

For more details, visit https://global-standard.org

Biodegradable

Biodegradable materials, such as wool, can be broken down into simpler substances through the action of enzymes from microorganisms. Once this process has been completed, the initial organic substances are entirely converted into simple inorganic molecules such as water, carbon dioxide, and methane. The International Wool Textile Organization (IWTO) is a recognized global authority for standards in the wool textile industry.

For more details, visit www.iwto.org

Recycled

Reclaimed or recycled materials are those which have been used before and are going to be reused to create a new product. Recyclable materials are those which are capable of being recycled or reclaimed at the end of use.

The Recycled Claim Standard refers to recycling in the following categories:

- material recycling—the point in the recycling lifecycle when a reclaimed material is processed into a recycled material;
- post-consumer material—material, including returns of materials from the distribution chain, which is generated by households or by
Psychology

When assessing the durability of a product, there is a certain amount of consumer psychology to consider. When we have products that we love, we want to keep them for a long time—but that is only really likely to happen if the product is well-made and of good quality. So, as well as reducing the environmental footprint of clothing, durability helps to drive quality standards up. There are two types of durability to consider in this context: physical and emotional.

Physical durability applies to products which resist damage and wear. It is impacted by a number of factors, including: garment construction; resistance to surface abrasion, odor, and staining; colorfastness; and communication with consumers about such issues as care, repair, and re-use options.

Emotional durability applies to the relevance and desirability to the consumer. It is impacted by such factors as whether the garment still fits, and whether the consumer still likes the garment.

Sustainable Design

It is estimated that 235 million items of used clothing, worth £140 million (US$182 million) and weighing about 300,000 tons, end up in household waste every year in the UK alone—where consumption of new clothing per person is the highest in Europe. Clearly, this is unsustainable.

But could the trend be addressed by a switch to more durable products?

- If designers used the principles of circular economy and use recycled (and recyclable) materials to create fresh new styles;
- if manufacturers applied the technologies available to design products which are durable, stain resistant, multi-purpose, and functional for many years of use; and
- if consumers chose to invest in good quality products—such as clothing, accessories, home furnishings and upholstery—which are intended to stand the test of time, in terms of durability and style; surely the “throwaway” culture would diminish and fewer almost-new products would end up in landfills.
One challenge the industry faces is to define what “sustainability” means to the various audiences. Most consumers we surveyed thought it meant “long lasting” and they think of cotton as the fiber that lasts longer, according to Cotton Incorporated’s Lifestyle Monitor research. Others defined it as “environmentally friendly” and “renewable.” No matter how sustainability is defined, it’s important that there is an awareness and continuous dialog around the topic across the industry.

—Melissa Bastos, director of market research, Cotton Incorporated

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A sustainable product starts with good design, because a product that is poorly designed and not used represents a total waste of resources. By contrast, good design and carefully chosen materials will help to increase the durability and reduce the environmental impact of a product.

So, the design of a product is key to its durability and sustainability. And a key priority in designing sustainably is to incorporate the principles of the circular economy (i.e., to design a product with its end-of-life in mind). This means giving careful consideration to the choice of materials, and designing to ensure:

- the product’s ability to be repaired—with detachable, replaceable, or repairable parts;
- the product’s ability to be adjusted for different sizes;
- color fastness, pilling, stain resistance, and an anti-odor finish—to retain aesthetics;
- multifunctionality—such as reversible garments and wearable technology;
- labelling providing care and laundry instructions, and personalization or customization.

When designing a product with its end-of-life in mind, it is also important to bear in mind how it can be taken apart without damaging the materials. The number of components, fastenings, and accessories should also be minimized, and glues should be avoided when possible, to make it easier to detach and separate the individual parts of a product at its end-of-life.

Designing for circularity explores opportunities to create continuous value at a product’s end of use, taking into consideration which components are used and how they can be looped back into the system at the end of use. If all the components are durable, and if a product can be disassembled and reassembled multiple times, you have a perfect example of durable sustainability.

**Sustainable Chemicals**

There are many chemicals used in the textile industry which enable garments to incorporate easy-care finishes, which reduce laundering requirements and

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At Polartec, we don’t see any conflict between durability and sustainability as we use postconsumer recycled polyester in our fabrics. Power Air, as an example, is a premium fabric platform which is functional, durable, and sustainable. These textiles will be used by apparel brands and made into amazingly designed garments that are built to last. Polartec is a premium provider of innovative textile solutions, and with the assistance of Milliken’s research team we are continuing to investigate technology that promotes accelerated biodegradation in synthetic fibers.

—Doug Kelliher, vice-president, product management, Polartec
which impart stain resistance in order to keep products in use for longer.

The danger is, of course, that the drive for low cost fashion is resulting in shortcuts with regard to safe practices in respect of textile chemicals. This is why brands and retailers are encouraged to use digitized solutions, which consider environmental and safety performance, when choosing their suppliers. A range of options exist, including the bluesign system, EcoChain, REACH, ZDHC, and more.

- **The bluesign system** focuses on people, the environment, and resources. Through its comprehensive approach, the bluesign system reduces the textile industry’s impacts on people and the environment, ensures responsible use of resources, and guarantees a high degree of consumer protection.

- **EcoChain** is an environmental intelligence system used to assess current realities, determine key leverage points, and monitor results. It helps companies to calculate and analyze their environmental impact at company, process, product, and value chain levels.

- **Registration, Evaluation and Authorization and Restriction of Chemicals (REACH)** is an EU regulation which addresses the production and use of chemical substances, and their potential impacts on both human health and the environment.

- **ZDHC** is a group of apparel and footwear brands and retailers working together to lead the industry towards zero discharge of hazardous chemicals by 2020. By collaborating with ZDHC, organizations can mitigate risk, respond to changing customer demands, cut costs, and preserve valuable resources. The four focus areas are the Manufacturing Restricted Substance List (MRSL) and Conformance Guidance, Wastewater Quality, Audit Protocol, and Research.

**Not Business as Usual**

The answer to the question, “Can durability be sustainable?” is yes, of course. It’s like going back to the future, to a time when goods were made to last, and when the quality of the product (materials and workmanship) was such that it would be reused or repurposed many times, but rarely discarded entirely.

For durable sustainability to play its part in reducing the impact of fast fashion on the environment, it is necessary for the whole supply chain to work collaboratively—and for “business as usual” to be reconsidered at all stages. Key elements for the industry to consider include the introduction of circular economy principles, product lifecycle assessments, and strategic partnerships with government and finance as well as other commercial organizations—and perhaps, this approach will contribute to the development of a new trend in high quality, durable slow fashion!

**Reference**


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