Reformation

Fiber standards methodology

Our Sustainability team built a fiber benchmark to classify and rank fibers that are commonly used in the fashion industry. We used primary data whenever available; otherwise we referenced secondary data and existing life-cycle assessments (LCAs) for select fibers. This is an overview of the primary and secondary data that we used in the process.

The basis for our Ref Fiber Standards is the Higg MSI and Made-By Fiber Benchmark. We researched the specific fibers included in these two tools, and compared the differences in rankings. We also referenced Fashion Fibers: Designing for Sustainability by Annie Gullingsrud.

We analyzed these tools to understand how the fibers were ranked (i.e. classes vs. number scale) and identified fibers we needed to research deeper. We studied LCAs and alternative resources that were specific to the fibers. We also engaged industry leaders for their perspective on certain materials and fibers that are open to debate.

A majority of the tools and research were cradle-to-gate, excluding garment use and end of life. However, our standards take into consideration garment care implications, like microfiber shedding. As a precaution, we grouped recycled synthetics by application and machine wash frequency.

In general, to rate our fibers we layered the LCAs, MSI, Made-By Fiber Benchmark, garment care implications, commercial viability and potential for circularity. Our standards also include certifications for specific fibers. These certifications are required to ensure content and/or manufacturing processes are as sustainable as possible.

Research citations

Almroth, B. M. C., Åström, L., Roslund, S., Petersson, H., Johansson, M., & Persson, N. K. (2018). Quantifying shedding of synthetic fibers from textiles; a source of microplastics released into the environment. Environmental Science and Pollution Research, 25(2), 1191-1199.

Bhajekar, R. (2018, July 06). General Description - Global Organic Textile Standard. Retrieved from https://www.global-standard.org/the-standard/general-description.html

Bloch, M. (2010, January 4). PVC plastic's environmental impact. Retrieved June 15, 2018, from https://www.greenlivingtips.com/articles/pvc-and-the-environment.html

Gullingsrud, A. (2017). Fashion fibers: Designing for sustainability. Bloomsbury Publishing USA.

https://msi.higg.org/page/msi-home

http://www.cottonedon.org/Portals/1/Briefing.pdf . (n.d).

http://enka.de/download/ENKA%20CanopyStyle%20audit%20FINAL%20DRAFT.pdf . (n.d).

https://www.rainforest-alliance.org/business/sites/default/files/site-documents/forestry/documents/ Aditya-Birla-Canopy-Verification-Report-14-June-2017.pdf . (n.d).

https://www.rainforest-alliance.org/business/sites/default/files/site-documents/forestry/documents/ Lenzing-Canopy-Verification-Audit-Public-Report_sans-Russia_23May2017.pdf . (n.d).

https://textileexchange.org/wp-content/uploads/2016/06/Organic-Content-Standard_v2.0.pdf . (n.d).

http://www.made-by.org/consultancy/tools/environmental/. (n.d).

https://ota.com/sites/default/files/indexed_files/USDA_Transitional_Certification_Factsheet.pdf . (n.d).

Laurenti, R., Redwood, M., Puig, R., & Frostell, B. (2017). Measuring the environmental footprint of leather processing technologies. Journal of Industrial Ecology, 21(5), 1180-1187.

Material Snapshot: Hemp. (2018, June). Retrieved from https://designforlongevity.com/articles/material-snapshot-hemp

Material deep dive: Linen. (n.d.). Retrieved June 5, 2018, from https://designforlongevity.com/articles/material-deep-dive-linen?c=czR2b2RZdEVFeU8x WXR5OGFrcUM0eUR0cXZ5NUVPYjIXM2JtTXVLc0ZxYkh6eU4v&s=NVIyZ0pkNUtRSE8 xWTkyNIIrcUM0eUR0cXZ5NUVPYjIXM2JtTXVLc0ZxYkh6eU4v

Muthu, S. S. (2016). Environmental impacts of the use phase of the clothing life cycle. In Handbook of Life Cycle Assessment (LCA) of Textiles and Clothing (pp. 93-102).

Rahman, M. M., & Bala, B. K. (2009). Ecological and environmental sustainability of jute production system in Bangladesh: Life cycle assessment. SAARC Journal of Agricultural, 7, 51-66.

Ricklin, B., & Swicofil AG Textile Services. (n.d.). Ramie - the natural fiber with strength for noble apparel. Retrieved from http://www.swicofil.com/products/007ramie.html

STANDARD 100 by OEKO-TEX®. (n.d.). Retrieved from https://www.oeko-tex.com/en/business/certifications_and_services/ots_100/ots_100_star t.xhtml