

# Greener Materials



## Finding Greener Materials: Example 2

by Mark Chamberlain, Megan Graham, Natasha Johnston,  
Stacy Parker (2017)

Note: This is a company-anonymized version of the file.

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### Comments:

Good work. You listed the material being replaced & why, listed 5 alternatives, had URLs / contact info, and a price on the top pick, which is all good. You also clearly listed the winning choice, had a decent argument for it, and placed it all in an easy-to-follow presentation with pictures of the winner, which is all great!

Some things to consider:

- 1) Is the performance similar to fleece? Does it stretch? How long does it last? Did you come across any performance info in your research?
- 2) This is an extremely expensive material (probably around 10x as much as fleece).
- 3) Whole system-wise: Your LCA discussions indicated that electricity use from washing & drying was the biggest impact. Cutting electricity impacts in half might easily be done with a garment that needs to be washed half as often, which might be accomplished with a different material that never gets smelly or repels stains. Curious how SeaCell stands up here. It's fine that you didn't address it, since it's a non-obvious route to take for material substitution and involves big assumptions about user habits, but it's something to think about in coming weeks.



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### FINDING A BETTER MATERIAL //

Fleece

**MATERIAL REPLACEMENT FOCUS //** The identification of a suitable candidate for virgin polyester replacement required a certain amount of care in determining what characteristics the material must have in order to perform equal to or exceed the current fabrication choice in terms of sustainability. The polyester fabric that makes up the bulk of the garment (441g) represents the material with the greatest environmental impact, and as a result was the most crucial material to explore.

**JUSTIFICATION //** Negative environmental impact from polyester are clear. It is made from petrochemicals and is not biodegradable. Fabricating polyester relies on large amounts of water, electricity, and chemicals during the manufacturing phase that can be harmful to the environment and humans.

**FABRIC AMOUNT NEEDED //** Estimated yardage per garment is (Based on 60" wide fabric)

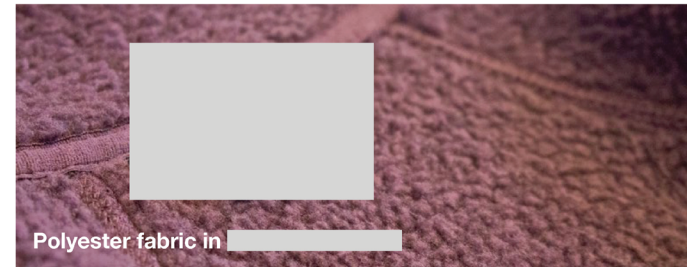
### SUGGESTION FOR TOP MATERIAL REPLACEMENT

#### TOP ALTERNATIVE CONSIDERATIONS //

- ① **SeaCell®** — is a cellulose-based fiber is mixed with seaweed and woven into the fabric. One of the benefits is the release of skin nourishing minerals when worn from the seaweed. It also produces a breathable and soft fabric. As an important note, the type of plant used, known as brown algae, is certified organic. [smartfiber.de](http://smartfiber.de)
- ② **Repreve®** — is part of UNIFI Brands portfolio, Repreve is made from recycled #1 PET plastic bottles and is available on the market today most notably used by Patagonia. PET is derived using the same raw materials as polyester making the resulting fabric just as soft and durable as virgin polyester and the process gives the bottles a chance at a new life!. [repreve.com](http://repreve.com)
- ③ **CRAILAR®** — Described as a "dirt to shirt" process, CRAILAR fabric combines hemp and flax bast fibers to minimize chemical and water usage. Bast or "woody stems" are often cast aside after harvesting the plants for food or industrial use, but the CRAILAR process transforms waste into a cotton like material with unique moisture wicking and wear resistance properties. CRAILAR is a USDA 100% BioPreferred certified product. Currently on the market as part of the Hanes Inc, Lexis Strauss, Target, Carhart, Georgia Pacific brand product portfolios. [crailar-fti.com](http://crailar-fti.com)
- ④ **infinito® yarns & reworx® textiles** — Fabricated from cellulosic fibers and synthetic polymers, infinito® yarns / reworx® textiles, focus on industrial composting for end of life strategies. The fabrics provide a high-performance polyester alternative that is durable enough to stand up to industrial laundering but light enough to offer cooling control for the wearer. A Gold Certified Cradle to Cradle product, the suggested uses include corporate wear and work wear. [infinito.de](http://infinito.de)
- ⑤ **S.Café® fabric** — A fabric made from coffee? Its true- Café Fabric from Singtex is made by combining polyester manufactured from PET bottles and roasted coffee grounds. The coffee yarn is used to create fabrics that have quick drying capabilities and odor control. The product reduces environmental impact by employing a low-temperature, high-pressure and energy saving manufacturing process. The fabric, in development since 2011, carries a Basic Cradle to Cradle certification and can be found in nearly 50 recognizable brands products including Timberland, American Eagle, LL Bean and New Balance. [scafefabrics.com](http://scafefabrics.com)

### Collaborative Product Design // 9.1—Better Material // 3.23.2017

Mark Chamberlain, Megan Graham, Natasha Johnston, Stacy Parker



Polyester fabric in

### TOP MATERIAL REPLACEMENT CHOICE

#### SeaCell® fabric

The majority of the SeaCell fabric is cellulose derived from wood pulp through the lyocell process. This means it is bio-degradable and, if the wood-pulp is certified, is responsibly sourced.



[http://huffington1378.rssing.com/chan-24631977/all\\_p66.html](http://huffington1378.rssing.com/chan-24631977/all_p66.html)

The seaweed additive is dried, crushed, finely ground, and incorporated into the cellulose fiber. The raw materials (cellulose and seaweed) are renewable and can be responsibly sourced.

#### J&O Fabrics

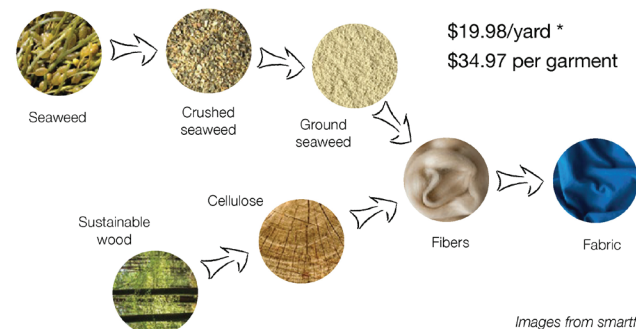
9401 Rt 130 South or  
9401 South Crescent Blvd  
Pennsauken, NJ 08110  
856-663-2121

[jandofabrics.com](http://jandofabrics.com)

\$19.98/yard \*

\$34.97 per garment

\* Based on retail and not wholesale



Images from [smartfiber.de](http://smartfiber.de)