

## RISE TO THE CHALLENGE: REEBOK AND DUPONT TATE & LYLE

Following a pledge in 2017, sports brand Reebok has now launched its first shoes made, mostly, from “things that grow”. The footwear has cotton uppers and soles made from materials derived from corn, developed by DuPont Tate & Lyle. This choice of material has helped give the shoe its name.

# Breakthrough shoe


Sports brand Reebok has launched the first shoe under the Cotton + Corn sustainable products initiative that it announced in 2017. Its focus with the Cotton + Corn programme is on producing footwear from “things that grow” rather than from non-renewable raw materials such as those derived from hydrocarbons. The first product it has made is a shoe it has called the NPC UK Cotton + Corn.

This shoe, named NPC in recognition of an iconic 1980s Reebok product, the Newport Classic, has an upper constructed entirely from cotton and a sole made from thermoplastic polyurethane (TPU) derived from corn. For the sole, Reebok worked with DuPont Tate & Lyle Bio Products, which has developed Susterra propanediol, a pure, petroleum-free, non-toxic product that has corn as its raw material. In addition, the shoe’s insole uses material derived from castor oil and the packaging the brand is using for the product is 100% recycled.

### Building block

When Reebok began speaking about bringing plant-based footwear to market, it made it clear that the corn it intended to use as part of the raw material is industrial grown corn (which means corn not suitable for human consumption, not food for people in any case). DuPont Tate & Lyle carries out a fermentation process using glucose from the starch found in the corn. The partner companies behind the development of Susterra describe the propanediol as a “building block

*The NPC UK Cotton + Corn is Reebok’s first plant-based shoe, but it performs and feels like any other footwear, according to the brand.*

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that delivers high performance” in a variety of applications. For polyurethane applications, Susterra propanediol works as a polyol or chain extender that gives manufacturers interested in developing bio-based solutions high levels of flexibility.

Susterra is said to generate up to 50% fewer greenhouse gas emissions over its life, compared to hydrocarbon-based materials that serve a similar function, and can help companies fulfil their sustainably goals without compromising on quality. The Susterra partners claim the product can offer improved flexibility and tear strength as well as high levels of resilience, adhesion, softness, transparency and abrasion resistance. It also gives shoes greater flexibility in cold weather.

### Dust to dust

“Most athletic footwear is made using petroleum to create synthetic rubber and foam cushioning systems,” says Bill McInnis, head of Reebok Future. “With 20 billion pairs of shoes made every year, this is not a sustainable way of making footwear. At Reebok, we asked ourselves if we could start instead with materials that grow, and use plants rather than oil-based materials. By using sustainable resources as our foundation, and then through ongoing testing and development, we were able to create a plant-based sneaker that performs and feels like any other shoe.”

Reebok says it also cares about what happens to its shoes when people are finished with them and claims that using plant-based materials such as corn and cotton at the beginning of the product’s life allow for easier compostability at the end. Bill McInnis says Reebok’s ultimate goal is to create a broad selection of bio-based footwear that will be composted after use, and he adds: “We’ll then use that compost as part of



*To add to its sustainability credentials, the shoe’s use of materials such as Susterra brings performance benefits including improved flexibility and tear strength.*

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the soil to grow the materials for the next range of shoes. We want to take the entire cycle into account; to go from dust to dust.”

He says the NPC UK Cotton + Corn is the only footwear product on the market with such a high proportion of its content, 75% in total, certified by the US Department of Agriculture as bio-based. “This is just the start for us,” Mr McInnis says. “We are on an ongoing path to create a different type of footwear so that you can feel good about what you’re wearing and where it came from.”

*DuPont Tate & Lyle’s Susterra sustains the sole of the Cotton + Corn shoe.*

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