



The plant-based glasses come in 23 designs and 6 colours | Photo source [Rolf Spectacles](#)

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EYEWEAR 3D PRINTED FROM CASTOR BEANS

 FASHION & BEAUTY

Sustainable eyewear manufacturer Rolf has released a new plant-based collection that is 3D printed and contains no screws

Spotted: Sustainability is reaching into almost every aspect of our lives, from travel to fashion. Now, it is also encompassing eyewear. Austrian eyewear manufacturer Rolf has developed a new range of frames, called Substance, that are 3D printed from castor beans. The combination of plant material and 3D printing eliminates waste.

Castor beans have been used for some time to produce a polymer blend that is stronger and lighter than conventional plastics. The plants themselves are grown for their oil, but the beans are not eaten, as they contain ricin, a highly toxic substance. Castor plants grow very quickly in tropical climates, and do not compete with food crops, making them a sustainable resource.

To produce the frames, the toxic peel of the bean is removed, then the remaining bean is ground to a powder. This is then mixed with water to create a paste that can be used in 3D printing. Instead of screws, the frame is held together with flexible hinges which are 3D printed, meaning that the glasses won't need maintenance or spare parts. They also make the frames extraordinarily pliable.

Rolf was founded in 2009, and has become known for using natural materials, including wood, titanium and stone, and for manufacturing all of its products by hand. Rolf founder, Roland Wolf, explains that using fast-growing castor plants adds another layer of sustainability, and that, "This makes the new material more sustainable and kinder to the environment than ever – and the perfect foundation upon which to build a new collection of glasses called Substance and meet the current demand for more climate-considerate products."

The use of plant materials for production is seeing an explosion in growth lately, as more and more brands strive to be sustainable. Seaweed has been used to make everything from [nappies](#) to [couture clothing](#), while we have also seen innovations such as chairs made from [brewery waste](#) and a pomegranate-based [biodegradable hoodie](#).

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Takeaway:

We are seeing a big increase in consumers demanding that brands step up and demonstrate their values, as the price of loyalty. Rolf's new plant-based glasses collection fits very well into this push for brands to demonstrate their concern for the welfare of society. While eyewear is not a major source of pollution, it is a very 'visible' way for people to signal both their fashion sense and their identification with values such as sustainability. Moreover, it helps that the glasses look good and are very comfortable as well.