Newsletter

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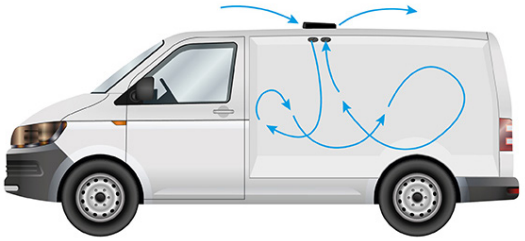
Easy Aero roof ventilator

The Easy Aero roof ventilator is an innovator plastic roof ventilator for your cargo or delivery van. The ventilator that is driven by wind expels moisture, dangerous gases and heat from the vehicle. BPO has developed the project by assignment of Imbema Rhiwa. The result is a unique product: very efficient, without any moving parts and it can be installed without a floor opening, so there is no need for making holes in the bottom of the van.

The starting point of the development was of course to make sure that a good ventilation is safeguarded. The first idea was to have the air come into the van via the roof and have it escape through some sort of exhaust in the bottom of the vehicle. This is the principle of most currently available roof ventilators. Using computational fluid dynamics (CFD) analyses it was researched how to use and guide the flow of air as efficiently as possible. In the end, a complete different functional principle was developed: fresh air enters the van via a hole in the roof and air exits via a hole close by the first hole. BPO has managed to guide the air in such a way that 'short circuiting' is prevented, all the air within the cargo bay of the vehicle is made to move, creating one big air circulation.



Push en Pull air circulation in a van

Imbema Rhiwa has tested the ventilation using the product extensively. Like the simulations predicted, the ventilator works very well in practice and it is proven to reach the predicted efficiency of 70 cubic meters per hour.

Visualisation of the assembled roof ventilator

Good ventilation properties were not the only requirements for this product. In the design, BPO also accounted for a simple installation: in just three steps the product can be installed in the van. Also, an extra drainage hole in the floor of the vehicle, as required for many current ventilators, is not necessary. Important for the newly developed innovative product was of course an attractive unit price. The Easy Aero roof ventilator is assembled from four relatively simple and easy to produce injection moulded parts. The unit price can therefore be very competitive.

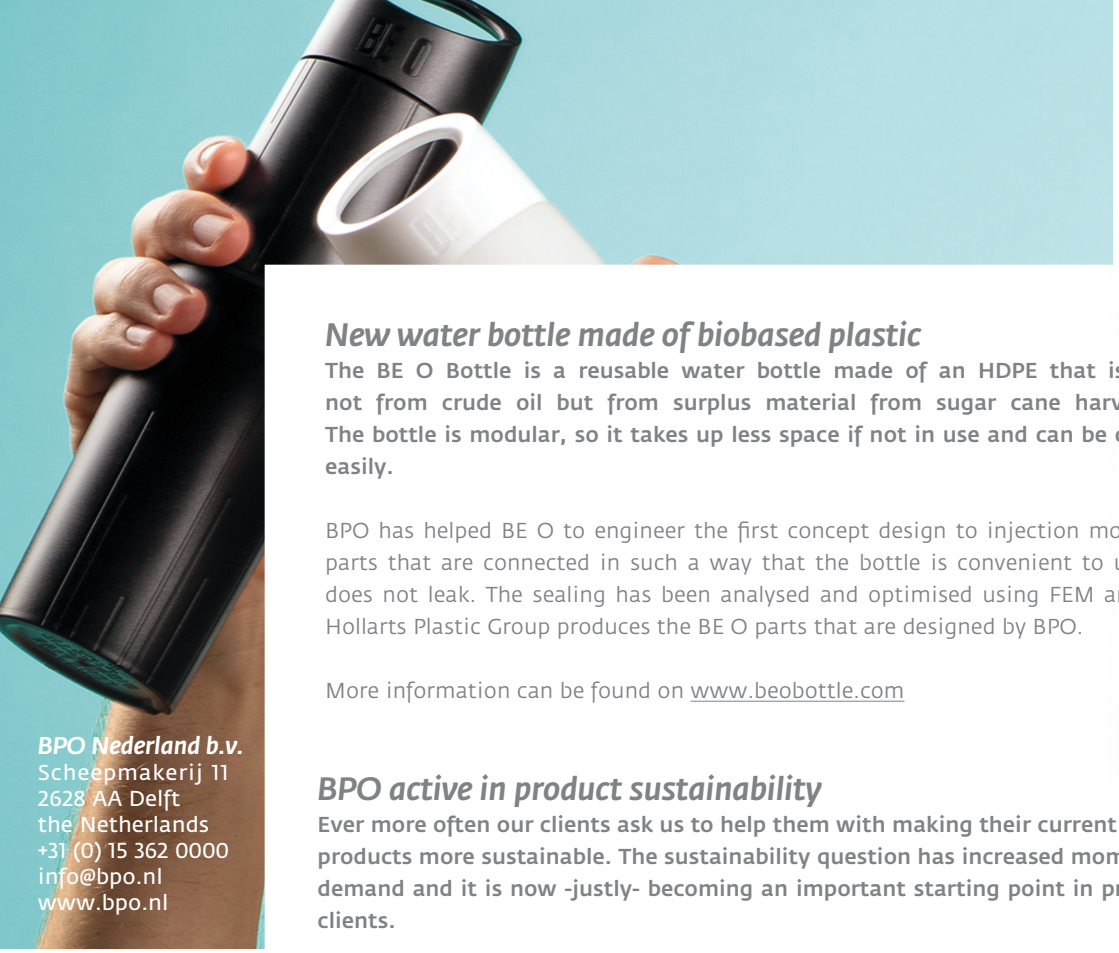
Finally, good looks increase the potential of a product. BPO has specifically tried to create a robust design, combined with a sleek look. The strong construction without any moving parts in a sleek and aerodynamic design makes the design not only visually attractive but also robust and sustainable. The design has to potential to have a long life, since there are no moving parts that require maintenance and lubrication. Next to this, Imbema Rhiwa has decided, based on BPO's advice, to make all parts of the ventilator out of one type of plastic, ABS. This makes sure that the material can be easily recycled at the end of its life.

An interesting piece of knowledge about the Easy Aero roof ventilator is that the ventilator is watertight, also in special situations. The product can not only withstand an intense rain shower, it can also go through a car wash with water jets from all sides.

Imbema Rhiwa has introduced the product on trade fairs first. It has been received with enthusiasm by clients and subsequently it was decided to start the mass production of the ventilator. The product is now available to buy.

More information can be found on the following website: www.easy-aero.com

Exploded view from the Easy Arrow



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New water bottle made of biobased plastic

The BE O Bottle is a reusable water bottle made of an HDPE that is made not from crude oil but from surplus material from sugar cane harvesting. The bottle is modular, so it takes up less space if not in use and can be cleaned easily.

BPO has helped BE O to engineer the first concept design to injection mouldable parts that are connected in such a way that the bottle is convenient to use and does not leak. The sealing has been analysed and optimised using FEM analyses. Hollarts Plastic Group produces the BE O parts that are designed by BPO.

More information can be found on www.beobottle.com

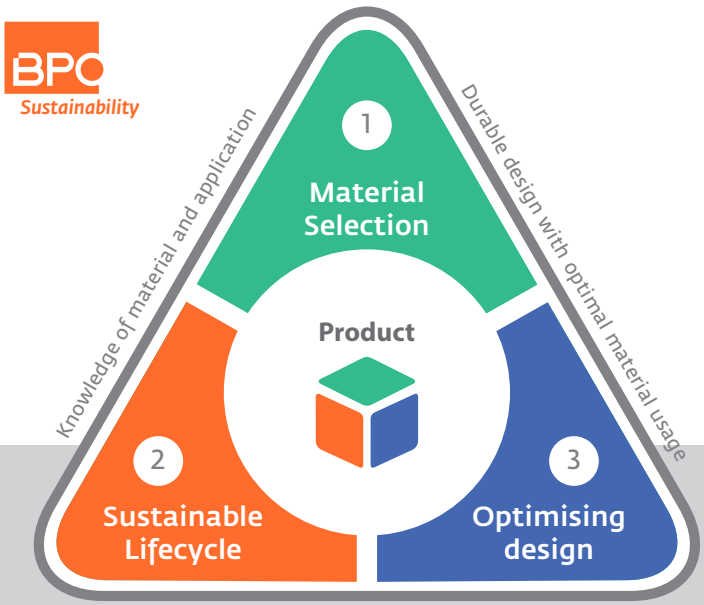
BE O bottle CAD overlay

BPO active in product sustainability

Ever more often our clients ask us to help them with making their current or new products more sustainable. The sustainability question has increased momentum, predominantly by consumer demand and it is now -justly- becoming an important starting point in product development for many of our clients.

This increased momentum is desperately needed, because at this moment plastics are often seen in a bad light. This bad reputation can be attributed to unnecessary and excessive use of packaging materials and single-use products, although in the end the root cause of all of this can be found in human needs and individual behavior.

To improve the reputation of plastics, it is important to cater to the consumers with "green" solutions. Unfortunately, many new material and bio-alternatives do not provide real solutions, also caused by deficient or incomplete information. For instance, consumers often cannot see or understand the difference between bio-based and bio-degradable plastics, leading to bio-based plastics being thrown in the organic waste and bio-degradable plastics in the plastic/metal/drink cartons refuse. Unfortunately sorting machines at waste processors do not work well with compostable plastics, resulting in contaminated waste flows. This shows that there is still a long way to go for both consumers and industry. Having said that, there are solutions that guarantee a positive effect on the environment and that is where we at BPO like to direct our efforts towards.



Optimising all product lifephases

It is in our BPO-genes to develop products with a minimal weight and minimal cycle time, as this saves material and energy. Also, significant cost reductions can be achieved by measures taken for increased sustainability. Sometimes, the result can be a paradox: for instance, for a client we have recently made a redesign suitable for a fully recycled material. This redesign has a 12% increased product weight, but because it was made of recycled material, the material costs were decreased by 25%.

Another solution that BPO applies regularly is the designing for "planned obsolescence". This entails for instance the redesigning of assembled product that have parts made of several different materials or plastics, to make all the parts of only one type of plastic. That way the product can be recycled as easily and purely as possible. Often this is quite a challenge, since high-end engineering polymers or even metals must be replaced by standard thermoplastic polymers that have to be able to withstand the same strict requirements.

Furthermore, BPO likes to think about other sustainable solutions as well. Using a life cycle analysis (LCA) we can verify where most gains can be made in sustainability for your product. By redesigning for sustainable materials or production techniques, reuse or repairability, we can reduce the negative impact of products on the environment. This way we are taking steps into the right direction and we can improve the reputation of plastics, a material that has many exceptional and unique properties, if used correctly and in a sustainable way. Of course, BPO is not able to change the behavior of consumers, and unfortunately there is still a long way to go. Only a wide discussion in the whole of society and the education of consumers can change "our" behavior. But like everyone, we can do our part for the greater food.

Kunststoffen 2019

This autumn, BPO can again be found at the plastics fair "Kunststoffen" in Veldhoven September 25 & 26 (Netherlands). We cordially invite you to our booth (129).

Kunststoffen 2019