Newsletter

BPO we know how

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In this issue: Sustainable DSPLY for CC-Retail | Water descaler for Quooker | Kunststoffenbeurs 2022

Sustainable DSPLY for CC-Retail

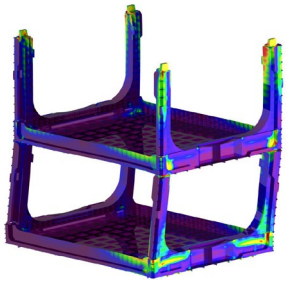
BPO has developed a revolutionary new display system in collaboration with paLRoRo and Hollarts. The durable display replaces cardboard displays in, for example, supermarkets with reusable plastic trays with interchangeable cardboard inserts.

Easy to use.
Since the sustainable DSPLY consists of separate trays, it is possible to quickly build different displays. Empty shelves in the display can also be replaced or removed directly on the shop floor. The uprights are easy to fold in and out and offer the possibility to add cardboard for different branding. The display can be combined with all types of standardised, reusable dollies and quarter pallets.

Tray unfolded and folded

Sustainable through reuse.
In today's market thousands of cardboard displays are used every year. A lot of cardboard is needed for these displays, and they are often printed differently per season. After a few months of use, these displays already become waste that must be recycled. The Sustainable DSPLY is made of plastic that lasts many more cycles and can be branded in different ways. Because the plastic provides stability, it is not necessary to close all the sides. Also, much less, and thinner cardboard is needed, which saves a lot of waste and therefore also limits the CO_2 footprint. CC-Retail has set up a pooling system for the displays, so that the material can be recycled within a closed system at the end of its lifespan.

More information can be found at https://cc-retail.com/nl/product/sustainable-dsply/



Simulation horizontal acceleration

Optimised for the load.
Using simulations, the uprights and the deflection of the bottom were analysed and optimised, among other things. The tops of the uprights have an ingenious and patented fit with the tray above, so that the uprights can withstand much more load and can be made slimmer. The displays can be stacked up to six high and must also be able to be transported. Horizontal accelerations in particular are critical here. By simulating this situation, the uprights and the angles of the tray could be optimised so that they meet the toughest transport requirements.

One of the biggest challenges in designing a tray with folding uprights is that a stacked display needs to be as stable as possible. In the design process, much attention was paid to tolerances and stacking, both folded and unfolded. By using injection moulding analyses, the geometry has been further optimised to minimise warping during production. This has resulted in a display that is stable and at the same time easy to fold and stack.

Folded trays stacked

DSPLY without carton *DSPLY with branding*

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Water descaler for Quooker

Quooker develops, produces, and sells boiling water taps and related products. BPO helped Quooker with the development of the Scale Control. The Scale Control reduces the water hardness to prevent limescale build-up in Quooker systems and improves the taste of the water in regions where the water hardness is high.

Quooker tap

Scale Control R

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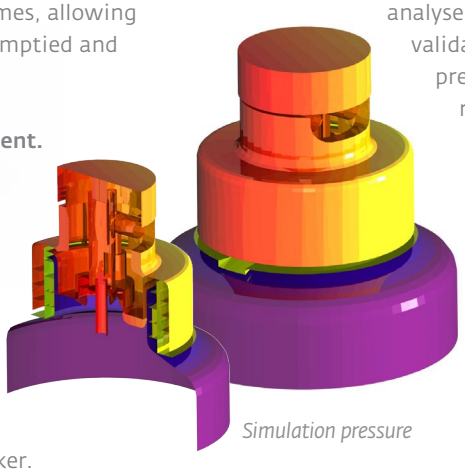
The Scale Control consists of a stainless-steel bottle containing resin granules that ensure that the hardness of the water that flows through the bottle is reduced. To allow the water to flow efficiently through the resin granules, the bottle contains an interior that brings the water to the bottom and distributes it there. The bottle is closed with a cap that is connected to the bottle by means of a screw connection. This connection is robust and can be tightened and loosened several times, allowing the product to be emptied and refilled.

Concept development. BPO has been involved in the project from the start to propose various solutions within the requirements and wishes set by Quooker. From this, three concepts were eventually developed in an iterative process with brainstorms and intensive collaboration with Quooker. During this concept development, we looked at various basic configurations for the product, ways to seal the bottle and techniques to connect the existing coupling backwards compatible. In addition, the optimal dimensions for the product have been investigated so that the desired volume is achieved, it fits well in a kitchen sink cabinet with space for (un)coupling and it can stand stably.

Process concept development

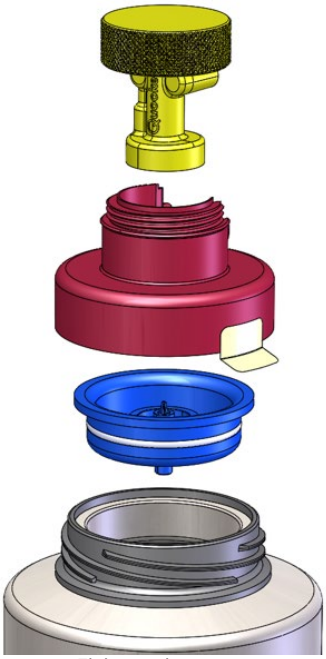
Finally, a choice was made from three fundamentally different directions. The chosen concept was then further developed by refining the main dimensions, determining technical details such as the exact screw thread and seals between the different parts. FEM analyses were also performed to validate the connections under pressure and to quantify the forces required to open the cap and coupling. The concept design has short tolerance chains, which made it possible to realise a reliable, leak-free product.



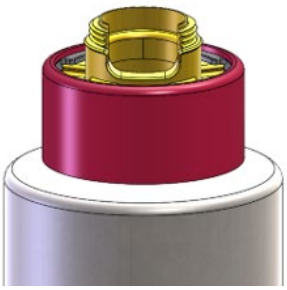
Simulation pressure

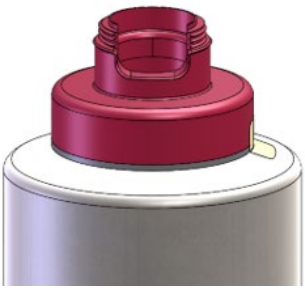
Sustainability. When the contents of the Scale Control are saturated, the bottle as a whole is exchanged. The used bottle is returned to Quooker. The product has been designed to be easy to open, empty, clean and refill. This allows the resin granules to be reused and prevents materials from being discarded with each cycle.

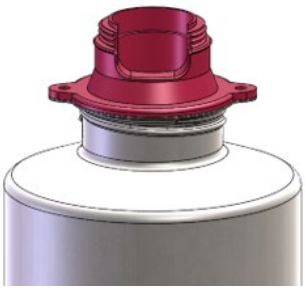
The Scale Control has now been successfully introduced in various countries. More information can be found at https://www.quooker.co.uk/scale-control-r-51-191-00.html



Elaborated concept







Water descaler concepts

Kunststoffenbeurs 2022

Visit BPO at the Kunststoffenbeurs in the Brabanthallen, 's Hertogenbosch! The fair will take place on 14 & 15 September and this year's theme is 'Future Proof Plastics – Innovative, Sustainable and Smart'. We will be showing the latest developments at our stand (329). For more information see https://kunststoffenbeurs.nl/home-en/ .

Kunststoffenbeurs 2022