

UNLOCKING QUALITY

SABMiller implements new generation of lightweight crown corks

This article sets out to explain the thinking behind SABMiller's decision to approve and implement a new generation of lightweight crown corks for its bottled beer products. It will also share the practical experience of using these caps for the past three years, and demonstrate that they have met or exceeded every requirement for use as a beer closure, whilst at the same time increasing the sustainability of SABMiller's products.

SABMiller is the world's second-largest brewer and is a FTSE-20 company, with shares trading on the London Stock Exchange, and a secondary listing on the Johannesburg Stock Exchange. It employs around 70,000 personnel in more than 80 countries, from Australia to Zambia, Colombia to the Czech Republic and South Africa to the USA.

Every minute of every day, more than 140,000 bottles of SABMiller beer are sold around the world. In the year ended 31 March 2015, SABMiller sold 324 million hectoliters of lager, soft drinks and other alcoholic beverages, generating group net producer revenue of US\$ 26,288 million and EBITA of US\$ 6,367 million.

Sustainability and value from supply chain innovation

SABMiller continues to be at the forefront of industry innovation on both consumer facing and non-consumer facing innovation

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SABMiller uses Pelliconi's smart crown, a 0.18-mm crown cork.

within the packaging arena. Over the past five years, SABMiller has focused on optimizing the performance of its crowns for both non-returnable and returnable bottles.

As part of the carbon reduction project, SABMiller had conducted a number of studies on different pack formats to better understand where significant areas of carbon reduction opportunity were held as well as identifying areas that could be released to improve the carbon footprint of packaging using internal business processes.

SABMiller utilizes billions of crowns each year and were one of the first in the industry to make the decision to eliminate PVC from the business (a core material in the crown liner compound). This decision was based on the continued commitment to improving the longer

term sustainable sourcing, use and disposal and landfill of packaging, thus reducing unsuitable materials to put in the world's landfill.

This presented SABMiller both opportunities and challenges in terms of improving the types of materials used but also their functional performance, as PVC is an extremely good liner material to provide gas barrier properties.

"Open innovation"

SABMiller's global packaging team, led by Director of Packaging Derek McKernan, used its "open innovation" principles to identify the key solution providers within the crown's manufacture and supply chain. Whilst SABMiller sits at the center of the supply chain, there are key innovation partners throughout the value chain who SABMiller can collaborate with to develop an innovative alternative.

So, SABMiller turned to the crown supplier Pelliconi, who was by then already working with its upstream tinplate and compound material suppliers on lightweighting, and together co-developed a specification for new products that had not entered the market.

SABMiller's approach was to "connect and develop" the suppliers and provide a clearly articulated "problem statement" whilst discussing with the suppliers what additional opportunities could be delivered.

"We identified a number of opportunities that could help us maintain the functional performance of the crown, whilst improving the sustainability through alternative designs," said Doug Hutt, Global manager of Packaging for metal at SABMiller. SABMiller identified an opportunity to standardize onto industry standard sourced tinplate for "both" Europe and the US giving procurement an opportunity to better optimize pricing.

As a second step, SABMiller identified an opportunity to down gauge to a lower gauge 0.18 mm standard. This would result in a new industry leading crown design whilst eliminating PVC.

Superior performing crown

SABMiller identified a core "campus brewery" location for testing out the performance of the crowns on the beer and to eliminate any design feature and versely impacting the quality of the beer.

As part of the testing and verification process, SABMiller linked up with VLB (Versuchs- und Lehranstalt für Brauerei) beverage industry leading 3rd party packaging performance testing house, to ensure any trials conducted were independently verified. The results from VLB also assisted significantly in the early stages, in identifying some key issues that needed to be resolved. This resulted in a superior performing crown to the previous industry standard PVC crown.

The transition from a 0.24-mm crown to 0.21-mm crown, and finally a 0.18-mm SmartCrown (Pelliconi's brand for light-weight crowns) does not at first seem that significant, but when you take these small modifications and multiply them by the tens of billions of crowns used annually by SABMiller, the net result is a reduction in total annual steel consumption in excess of 30 thousand tonnes, which equates to over 60 thousand tonnes fewer CO₂ emissions.

Conclusion

Work continues to build on the development that established a PVC free twist crown, and develop a low gauge 0.18 mm version of the crown as well. SABMiller, as a result of this innovative work, has now established new industry standards, not only for the brewing industry but also the entire carbonated beverage sector, significantly impacting CO₂ beyond just its own impact.

"This is a classic example," Doug Hutt concludes, "of the value that can be obtained by linking up the entire value chain to drive forward innovation on a broader scale." □



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