blueSeal

air curtains by brightec

BlueSeal air curtains by Brightec – energy efficient climate control for temperature-controlled vehicles

Brightec has been leading the way in clean and sustainable solutions to vehicle climate control for nearly a decade with BlueSeal air curtains. By creating an effective climate barrier, BlueSeal significantly reduces the problem of hot or cold escaping from vehicles during loading and unloading while reducing operating costs from existing cooling/heating equipment. Air curtains have become an essential part of the food and pharmaceutical supply chain where maintaining product integrity during multiple deliveries is a critical factor.

The development of a mobile air curtain for vehicles was the result of a project for renewable energy company Econcern in 2005. Their R&D team, led by energy physicist and inventor Hans Opdam, was tasked with developing an energy-efficient and improved alternative to PVC strips as a method of controlling cold/heat loss during door openings. The aim was to significantly reduce cooling fuel consumption and the strain on existing cooling and heating equipment by means of a hygienic and secure solution.

The team presented the first version of their mobile air curtain in 2006. In 2009, Econcern filed for bankruptcy and Hans formed the company Brightec with his colleagues, developing their existing concepts to create a new, first version of the BlueSeal air curtain in 2010, with a number of patents granted for its unique system of manipulating airflow.

Hans says, of the company's foundations, "We are first and foremost a team of physicists and energy-efficiency engineers, Brightec develop our air curtains based on scientific findings and our origins come from identifying a problem with the efficiency of vehicle climate control, and working backwards to find the most effective solution for this."

The decision was made early to manufacture BlueSeal from their site in the Netherlands, ensuring a truly home grown, high quality product. "We strongly believe in developing our products in-house and offering our customers Western-European product quality", says Hans, "If an end-user spends a small fortune on a refrigerated vehicle he expects the accessories in the vehicle of equally high standard. Ensuring that all of the materials and components used in BlueSeal are of the highest quality is at the centre of our operation and we are proud to be able to release a truly well built, Dutch-made product."

During its first years in operation, BlueSeal has welcomed various performance tests by leading food suppliers that helped to support the team's conclusions. La Provencale in Luxembourg used BlueSeal on their distributions routes for a year, with savings of 32% in cooling fuel compared to units without a climate barrier, and an 8% saving over vehicles using PVC strips. BlueSeal has also received a hugely positive response from end users, with drivers welcoming easier loading without the physical hindrance of curtains.

Today, BlueSeal exports to over 22 countries worldwide as the leading producer of air curtains for commercial vehicles. Brightec operate primarily from their base in Amsterdam, with further manufacturing facilities in Holland.

In recent years BlueSeal has attracted an impressive client list including Gray & Adams, Solomon Commercials and Paneltex, as well as major food and pharmaceutical logistics companies throughout Europe.

The company remains a modestly sized but dedicated team including Hans' son Tom who joined Brightec in 2015, a fellow physicist who handles business development as the company has grown to reach new territories and markets. Despite its tremendous growth, Brightec remains a small family company committed to its roots in physics and energy technology. Driven by global climate change and the exhaustibility of fossil fuels, their vision is to continue creating products that help to create a sustainable future for the temperature-controlled transport industry.

Brightec have expanded the BlueSeal range in recent years to include BlueSeal Compact for vans and smaller vehicles, with a reduced height of only 87mm as well as BlueSeal Plus+, with an increased air flow velocity for countries with warmer climates. Further new models were unveiled at Le SELFI expo in Marseillie in May, offering additional functionality based on feedback received from bodybuilders and end-users.
This included BlueControl, a companion module for operators to increase awareness among drivers of the duration of door openings. BlueControl displays the amount of time that has passed since the door was opened, motivating drivers to keep this time as short as possible. In the food and pharmaceutical industries in particular, this can be critical to ensure that product integrity is not compromised. BlueControl also significantly reduces installation time for bodybuilders with an integrated sensor that detects door openings, making air curtains a plug-and-play device.

The other new addition to the range, BlueSeal LED, features enhanced safety lighting to BlueSeal's core model. BlueSeal LED uses a powerful but remarkably energy-efficient strip light that creates a well-lit area for drivers to load and unload goods from. This requires only an extra 10W power per metre and is an especially handy feature for early-morning or late-evening (un)loading where extra light adds safety to the working conditions of drivers.

Earlier this year, BlueSeal was subject to extensive testing as part of a project by the Centre for Sustainable Energy Use in Food Chains (CSEF) of Brunel University in London, which concluded that a saving of up to 48% of the cooling-energy used by the refrigeration unit is reached with BlueSeal fitted to a standard box van or 18 tonne truck, and a 48% saving for van sized vehicles.

"These numbers are in alignment with energy saving findings by our customers and we are always impressed with how the evidence supports our vision for what we're trying to achieve with BlueSeal," says Hans of the study, "while the concept of air curtains has been used for other applications, we have optimized the air flow to create an extremely efficient air curtain that works in unity with existing refrigeration equipment for transportation. Tests performed by scientific institutes and field tests performed by customers have consistently supported our trust in the products effectiveness."

The future for air curtains in vehicles looks promising as the transport industry is transitioning to more sustainable and cleaner refrigeration methods. Diesel based refrigerators are being replaced by methods where a vehicle needs to be more economical with the cold-storage on-board, BlueSeal provides the most energy-efficient means yet of maintaining this cold chain. Recently BlueSeal has been utilised on electric vehicles as a means of reducing energy consumption from cooling/heating equipment, with the technology working in tandem with the next generation of energy-efficient vehicles.

With future Brexit uncertainty surrounding European trading, Brightec remains committed to continuing its excellent working relationship with the UK; Business Development manager Tom Opdam says; "Britain is a frontrunner for adopting sustainable energy technologies and we have fantastic relationships with companies across the UK that are working with us to create a truly energy-efficient, environmentally friendly industry. We've found that many companies are looking to reduce their operating costs on cooling/heating equipment with a more economical use of their equipment and we are proud to help them achieve this with BlueSeal.

It's been a pleasure to hear from operators that have benefitted from making this a essential part of their supply chain and we are confident that we'll continue working closely with customers from the UK for years to come".

For more information on Brightec's products and BlueSeal air curtains please visit www.Brightec.nl or find us on Twitter, Facebook and LinkedIn at Brightec BV.