

Corex Honeycomb

BCP and Corex Honeycomb Supporting Innovation in the Rail Sector

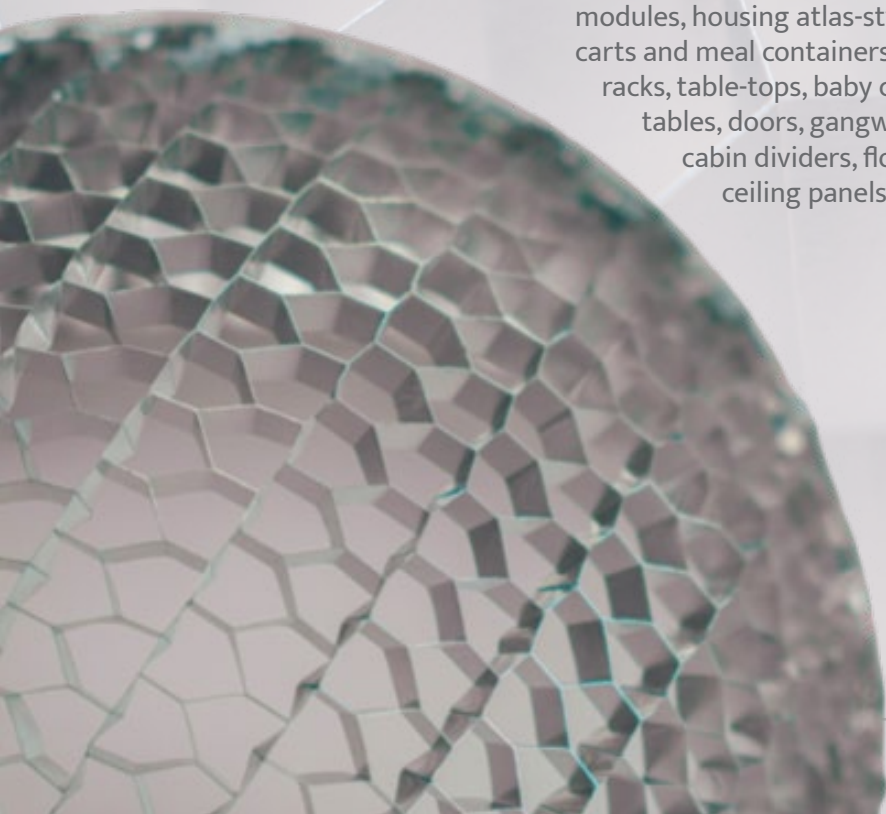
BCP has been designing and manufacturing aluminium honeycomb composite panels for more than 30 years and has a reputation for working with customers to solve their engineering problems.

Composite panels and structures offer a lightweight and durable alternative to conventional materials, such as plywood and

metal fabrications, when used for external and internal train components. They can be used for a variety of applications including galleys, universal access toilet (UAT) modules, housing atlas-style aisle carts and meal containers, luggage racks, table-tops, baby changing tables, doors, gangway panels, cabin dividers, floor and ceiling panels.

The panels are made of aluminium honeycomb core sandwiched in between two aluminium alloy skins. The layers of the panel are bonded together with an extremely strong engineering adhesive and pressed together until the adhesive cures. The lightweight aluminium core keeps the two skins in position, resists shear forces, and provides insulation as well as removing weight, while the two skins provide durability, weather and impact resistance, and resist in-plane forces of tension and compression. The result is a complete aluminium composite panel.

Panels can be painted in customer colours or finished with a high-pressure laminate (HPL) for a durable and visually appealing finish in the train operating company's



brand RAL, and laminated with an anti-bacterial surface where required.

As well as flat aluminium composite panels, BCP also produces lightweight and durable curved panels. They can be engineered to be extremely strong and supportive, yet not add excess weight. Their durability also means they are able to withstand a large amount of interaction with external forces while still remaining in good condition.

Aside from their lightweight properties, there are several benefits of using aluminium honeycomb composite panels for train infrastructure and interior products. They include:

- Durability and strength
- Less re-work due to tighter tolerances
- Lower energy consumption (lower weight is the key advantage to saving energy)
- Enhanced surface finishes
- Lower maintenance and refurbishment costs
- Better whole-life cost compared to alternatives
- Easier installation due to lightweight properties

The core used in BCP's panels is manufactured by its sister company, Corex Honeycomb – the UK's only manufacturer of high-quality aluminium honeycomb.

The Corex Honeycomb range can be supplied in a variety of



forms including expanded or unexpanded, full blocks or cut slices, perforated or unperforated, corrosion-treated or untreated, using aluminium alloy grade 3000 or 5000. The core, which is fabricated using a complex manufacturing process, is available in a choice of cell sizes.

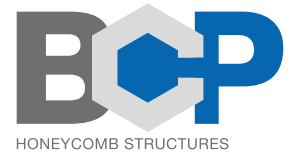
The range also includes a flexible aluminium honeycomb (SuperFlex) and non-metallic honeycomb including Cormaster (Nomex® and Kevlar®) and polypropylene. SuperFlex has excellent formability, retaining its cell shape and therefore its strength when used to manufacture curved panels.

Corex Honeycomb has been supplying the rail sector for over 20 years, with many tonnes of aluminium honeycomb used in parts made for the rail industry through European manufacturers.

Rail projects Corex Honeycomb has been involved with include: The personal rapid transit pods at Heathrow Airport, the Hitachi Class 800 and 801 series trains and the Eurotunnel vehicle shuttles.

With a unique combination of properties, aluminium honeycomb composites are increasingly becoming the preferred material for a wide variety of refurbished and new build rolling stock applications. The BCP and Corex Honeycomb teams have extensive experience in the manufacture of a variety of train infrastructure and interior products and the multi-disciplined team of engineers offer expertise in consultancy, design, simulation, prototyping and full-scale production.

For more information about BCP and Corex Honeycomb visit: www.bespokecompositepanels.com and www.corex-honeycomb.com



SUPPORTING INNOVATION IN THE RAIL SECTOR

Many tonnes of our honeycomb and related composite products are used in parts made for the rail industry through European manufacturers

ONLY UK
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30
YEARS
EXPERIENCE IN COMPOSITES

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