

CGA'S ROLL-BOND

BATTERY COOLING:
WE MADE IT SIMPLE





CGA TECHNOLOGIES

LEADER IN THE PRODUCTION OF THE ROLL-BOND PANELS SINCE MORE THAN 40 YEARS

CGA has a completed integrated production cycle, from the casting to the finished product.

The Roll-Bond panel is the result of a well-established production process that foresees the construction of panels with highly customizable channel configurations, sizes and thicknesses. CGA's Roll-Bond consists of two sheets of

aluminium bonded together via a rolling process; after the bonding, the channels are developed using special inflation presses (designed by CGA).

CGA Technologies has chosen to use aluminium, a material that is **100% recyclable**. Choosing a CGA's Roll-Bond means preferring a product that is entirely eco-compatible.

SOME FIGURES



150

MILLIONS

Roll-Bond sold, since 1976



14K

TONS

Annual production capacity of aluminium coils



7K

TONS

Annual production capacity of Roll-Bond finished products

EXPERIENCE

BATTERY COOLING OUR HISTORY

YESTERDAY

The first project where CGA's Roll-Bond was involved in battery cooling starts in early 2000 with Maglev Train in Shanghai. CGA achieved the result by using a gas based refrigeration system. Starting from this pilot project, the natural evolution of this cooling system is the transition from gas to liquid refrigeration fluid.



TODAY

The result of 15 years of research at CGA Technologies led to the use of a particular ink, different from the graphitic based one, that allows CGA to guarantee the long-lasting quality of its cooling panels. The outcome of all these years of R&D are collected in the "CGA FACT BOOK" which contains the technical solutions developed by CGA for the various Roll-Bond applications. After the experimental phase with several automotive suppliers, CGA's Roll-Bond is a solution chosen for battery cooling systems already in series production.



INNOVATION

THE NATURAL EVOLUTION FOR THE AUTOMOTIVE INDUSTRY

AN OPPORTUNITY FOR THE AUTOMOTIVE INDUSTRY.

The automotive sector represents a natural evolution for CGA's Roll-Bond, given its reliability in terms of performance and durability, as guaranteed by CGA's production process.



100% proudly made in Italy



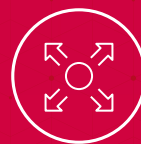
Production Process fully controlled



Pure aluminium, no corrosion, long term tests available

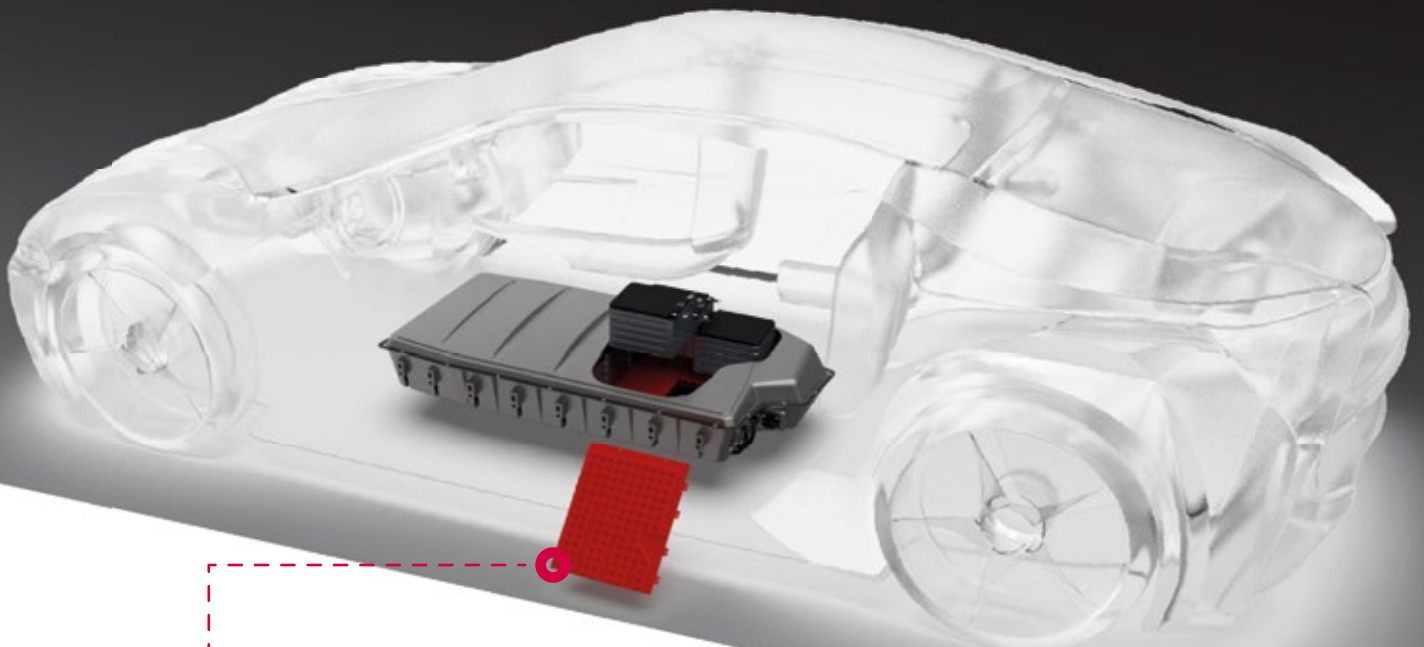


High dimension varieties: 2500 mm max length, 1000 mm max width



Maximum freedom in sizing and designing the channels of the circuit





AUTOMOTIVE

ELECTRIC MOBILITY IS THE FUTURE

- Roll-Bond Technology is highly reliable and it guarantees long product life and **excellent performances**.
- CGA's Roll-Bond has a high mechanical strength, guarantees 100% of primary thermal exchange and **low pressure drops** which are some of the most important features for cooling systems of electric power trains.
- Roll-Bond can be realized in big dimensions and can be easily **customized to every use** in automotive sector.
- The possibility to customize the Roll-Bond circuits allows **to reach directly the battery's hot spots**. This important feature guarantees a more efficient and effective cooling system.





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