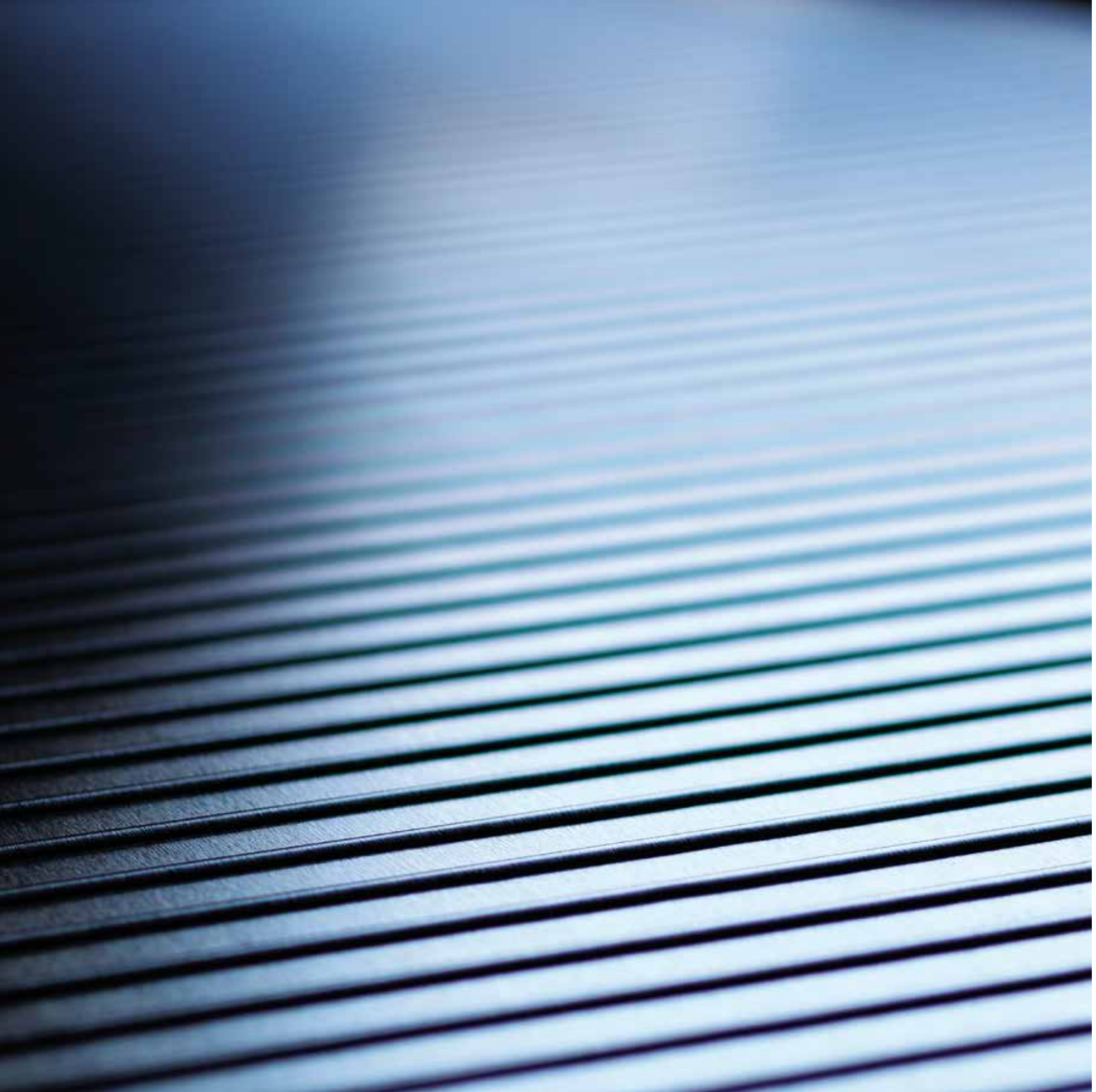
CGA
TECHNOLOGIES



CGA TECHNOLOGIES
IS THE GLOBAL LEADER IN THE PRODUCTION OF ALUMINIUM ROLL-BOND EVAPORATORS

Find out what's new at CGA Technologies: Eco-friendly, Innovative and Multifunctional Products

CGA Technologies is a world leader in the production of evaporators with aluminium ROLL-BOND technology.

Since 1976, when the first company Compagnia Generale Alluminio, CGA Technologies was founded, it provides its customers with total quality products.

The Experience, professionalism and unbroken technical updating of the 80 staff members working at the Company, the efficiency of household refrigeration, the 3,500 tons of ROLL-BOND sheets manufactured at the factory that extends over an area of 50,000 square meters, 16,000 of which are indoors, and the employment of renewable energies enable CGA Technologies to attain technological and state-of-the-art performances.

CGA Technologies is the only manufacturing Company in its industry having full control over the entire manufacturing process.

The manufacturing process required to make ROLL-BOND heat exchangers starts from the fabrication of an aluminium sheet, obtained by using a sandwich bonding technique by means of the rolling process. Surfaces are not bonded where the ink used on purpose during the rolling process is present, thus creating a pathway of unbonded areas within the sandwich.

The latter, through a specific air pumping process (inflation) turn into canalizations.

The sheets thus obtained can be then adapted to any needs of customers.

CGA Technologies Spa is a company that is “100% Made in Italy”, has more than 35 years experience and with a broad range of products, for example: high-efficiency heat exchangers for refrigeration systems and brand-new thermal, thermodynamic and radiant solar panels to air-condition buildings. The panels designed for the Automotive sector are the most recent products.

inside
by CGA TECHNOLOGIES

CGA Technologies guarantees its products with the “**Inside**” mark that means:

DESIGN FLEXIBILITY: shape and channelling of the ROLL-BOND panels.

EXPERIENCE: acquired by participating in major European projects.

PROFESSIONALISM: Human Resources represent the Company’s foundations and their involvement in the production process enhances the quality of the products.

QUALITY: CGA Technologies is a company certified by DNV for its quality system in compliance with ISO 9001:2008.

ECO-FRIENDLY: CGA Technologies has chosen to use aluminium, a material that is 100% recyclable. Choosing a CGA Technologies evaporator means preferring a product that is entirely eco-compatible.

The Roll-Bond panel is the result of a well-established production process that foresees the construction of panels with various channel configurations by using a sandwich bonding technique, formed using two 99.7% pure aluminium sheets, based on a rolling process and a consequent inflation process.

CERTIFICATION

TOTAL QUALITY

CGA Technologies means Quality. The entire production process is based on an internal Quality Management System (QMS) according to EN ISO 9001:2008.
CGA Technologies Certification is for 'Production and sale of flat heat exchangers made by double or more sheets of aluminium alloy laminated with a dedicated internal circuit for fluid circulation'.
CGA Technologies heat exchangers 'Aluminium ROLL-BOND', model 'One Side Flat, One Side Extra Flat and Safety ROLL-BOND', are certified by VDE for 'scratch test' according to
DIN EN 60335-2-24.
CLIMABOND® panel is certified with the test report 12.58.CGA.105 & 106 by WSPLab (D) according to DIN EN 14240:2004-04.
Next CGA Technologies important target to be achieved in the next months (in compliance to Internal QMS) is the extention to the 'Research & Design Area' of the existing EN ISO 9001:2008 certification.

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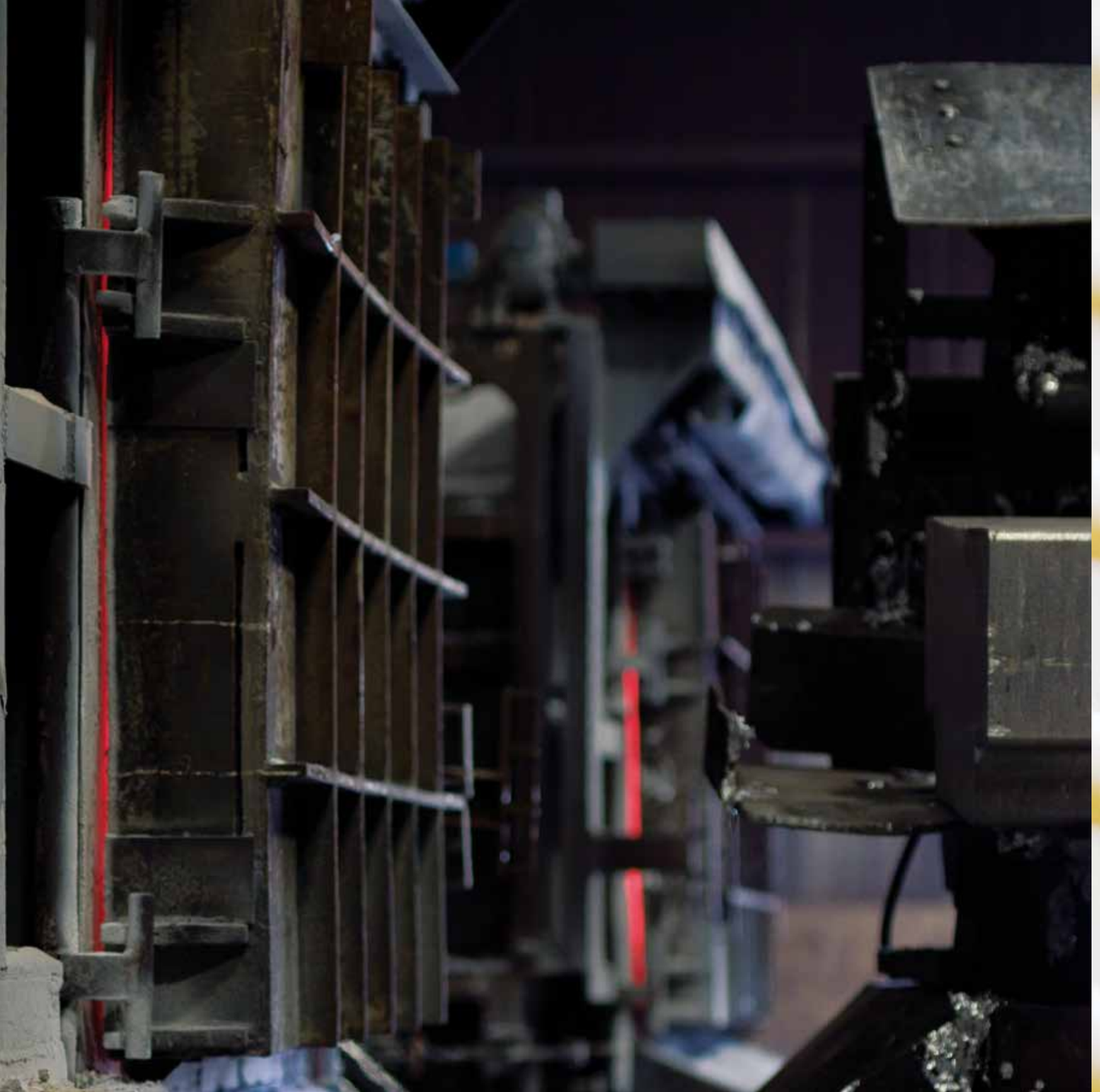

ROLL-BOND

THE ROLL-BOND ALUMINIUM HEAT EXCHANGER IS CGA TECHNOLOGIES' CROWNING ACHIEVEMENT.

The ROLL-BOND panel comprises two overlapping layers of aluminium sheet between which a channelling configuration is constructed in which the exchange fluid (gas or liquid) circulates.

The ROLL-BOND panel is an excellent heat exchanger that guarantees 100% primary exchange, thanks to the high thermal conductivity of aluminium.

The absolute production flexibility of the technology used enables an unlimited number of types of channelling to be created, making the roll-bond suited to any type of use requested by customers.

REFRIGERATION

The ROLL-BOND aluminium heat exchanger is CGA Technologies' crowning achievement.

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The absolute production flexibility of the technology used enables an unlimited number of types of channelling to be created, making the roll-bond suited to any type of use requested by customers.

The ROLL-BOND heat exchanger is supplied for use in high-efficiency domestic refrigerators and freezers and in professional units, for example, cold rooms for wine, cheese, cakes and deserts, ice cream used in catering and food services, for example, in the Large-Scale Retail Channel, and complies with the most demanding requirements established by the European New Energy Label.

Furthermore, the ROLL-BOND heat exchanger has applications in the medical field, for example, in transportable first aid and emergency units, blood banks, and cryostats in general.

The ROLL-BOND heat exchanger can be used in a hybrid form, with ventilation systems, also forced ventilation in a concealed configuration, and in view, using traditional gases (R134A or R600) and also the latest R1234yf.

REFRIGERATION

ALUMINUM ROLL-BOND: THE TRUE ENERGETIC ANSWER

A broad range of products is available which foresee different types of exchanger panels.

2CH (Double Channel). Double channel exchanger panel. Ideal for every type of application, both refrigerator and freezer. Maximum channelling volume and optimised heat exchange for a given radiant surface area.

OSF (One Side Flat). Ideal for rapid and concealed installation by bonding the panel to the refrigerator's internal surface.

OSEF (One Side Extra Flat), where one extra flat side of the panel can be used directly in view inside the refrigerator. The technology used for this particular product enables CGA Technologies to be the world leader for these applications.

POSF (Partial One Side Flat), used simultaneously in both the freezer area and in the refrigerator area. The installation time is reduced and wiring and charging the system are facilitated. In addition, there are fewer joints and welds.

Safety Bond. Comprising four aluminium layers, ideal for withstanding high internal pressures for special applications.

Maximum possible dimensions: 1000mm width x 3200mm length

Guarantee of reliability by more than 30 years experience and more than 150 million panels produced and sold.

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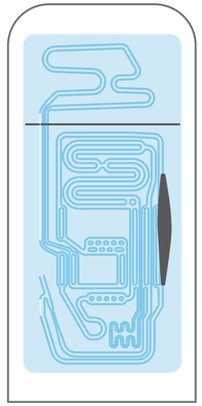
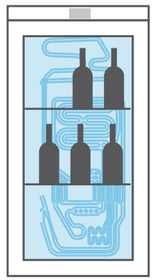




ALTERNATIVE ENERGIES

CGA, worldwide leader in aluminum heat exchangers production, developed the Roll Bond technology to the production of new absorber for Solar Thermal, Thermodynamic, Solar Heating and Cooling and PV Hybrid.

The result of investments in Research and Development made over the last 5 years with the most renowned Universities, Research Institutes and specialist Italian and European companies is a complete range of highest efficiency and lowest consumption products.

The Roll-Bond technology is an unavoidable factor in achieving the “Nearly Zero Energy Building”, a veritable European and global challenge for the next few years.

FracTherm® design by Fraunhofer ISE, Germany

SOLAR THERMODYNAMIC

"THE BUILDING EVOLUTION WITH ALUMINUM ROLL BOND"

Operates virtually in all weather conditions, even at night and in any climatic condition during both the winter and summer periods.

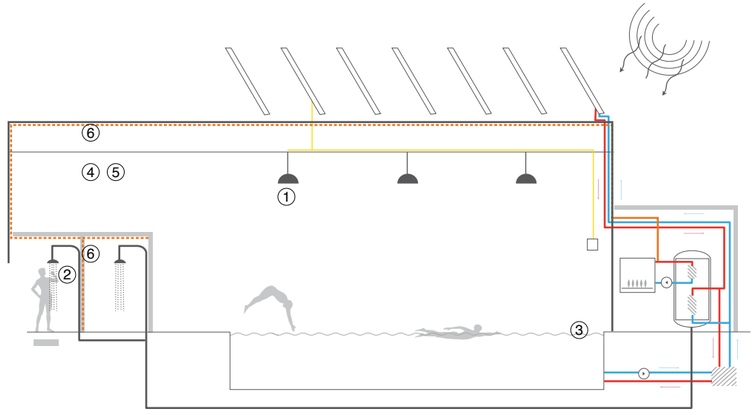
Used to produce hot water for both domestic and industrial plants, for example, greenhouses and farms and for public facilities, for example, swimming pools, schools and hospitals.

Readily integrated in facades, roofs with any type of exposure.

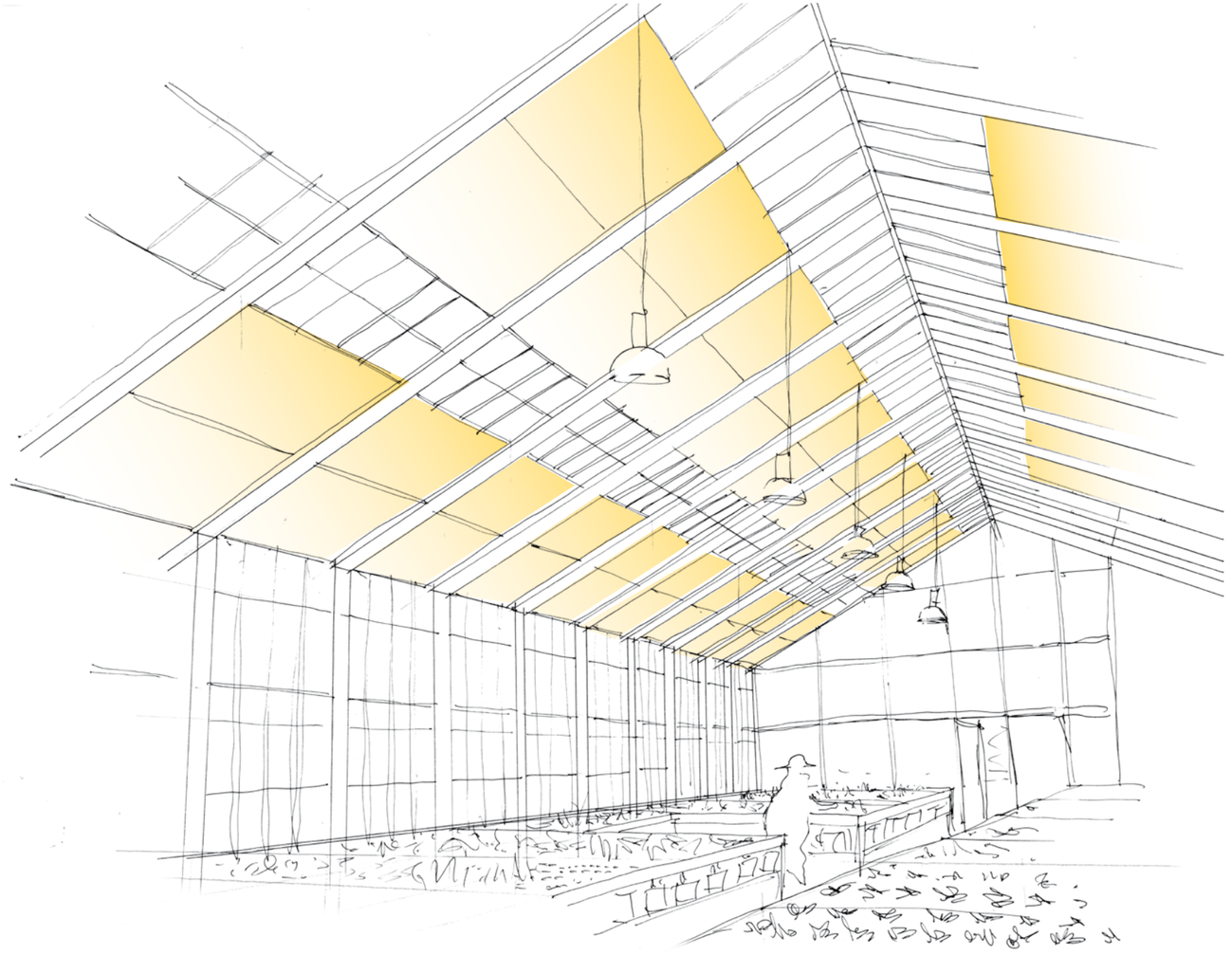
The panel can fully replace the traditional "passive" type aluminium panel on the facades of buildings, transforming a "decorative" surface area into a "decor-active" surface area.

The system comprises a series of ROLL-BOND panels inside which a gas normally circulates (R134A).

A heat pump is obtained, thanks to a low electric power compressor and a condenser included in an accumulation system, this arrangement is able to heat the water in the circuit up to approximately 50°C.



① ELECTRICITY
② SANITARY HOT WATER
③ POOL HEATING
④ HEATING SYSTEM
⑤ COOLING SYSTEM
⑥ CLIMABOND®



SOLAR HEATING AND COOLING

FROM PASSIVE TO ACTIVE SYSTEM IN ARCHITECTURE

Solar thermal can cover 50% of the total heat demand, if the heat demand is first reduced by energy saving measures.

The main ones are the active solar façade building as offices, hotel, hospital, school; the active solar renovation as social buildings or industrial buildings, solar heat for district heating and cooling too.

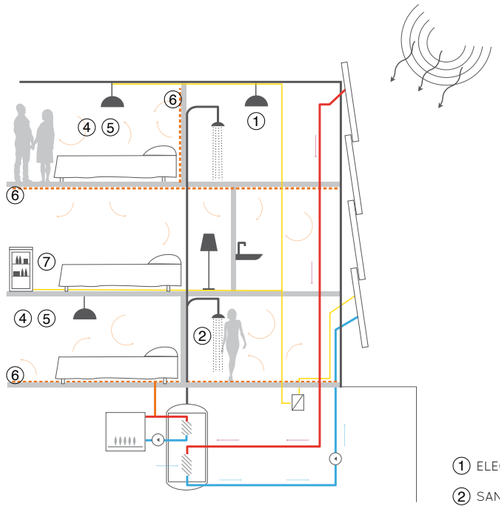
Roll Bond Technology is the newest driver of the Sustainable Energy generation all over the world.

From today, air conditioning and the production of hot domestic water are possible with a single and innovative solar absorber produced using ROLL-BOND technology.

The air conditioning system using an Heat pump by absorption" is now available with the new high-efficiency solar absorber that allows the maximum absorption of sunlight and the minimum emissivity.

For example, the system comprises a solar field composed of the "ROLL-BOND absorber"; two accumulators for the solar thermal-carrier fluid and one accumulator for the cold water to the utility, one absorption* machine (for example, a Water - Lithium Bromide single-stage type), a cooling tower to disperse the heat generated by the chiller, a make-up boiler that compensates the possible absence of solar radiation.

* Single Stage Water-lithium bromide.



① ELECTRICITY
② SANITARY HOT WATER
④ HEATING SYSTEM
⑤ COOLING SYSTEM
⑥ CLIMABOND®
⑦ REFRIGERATION

SOLAR THERMAL

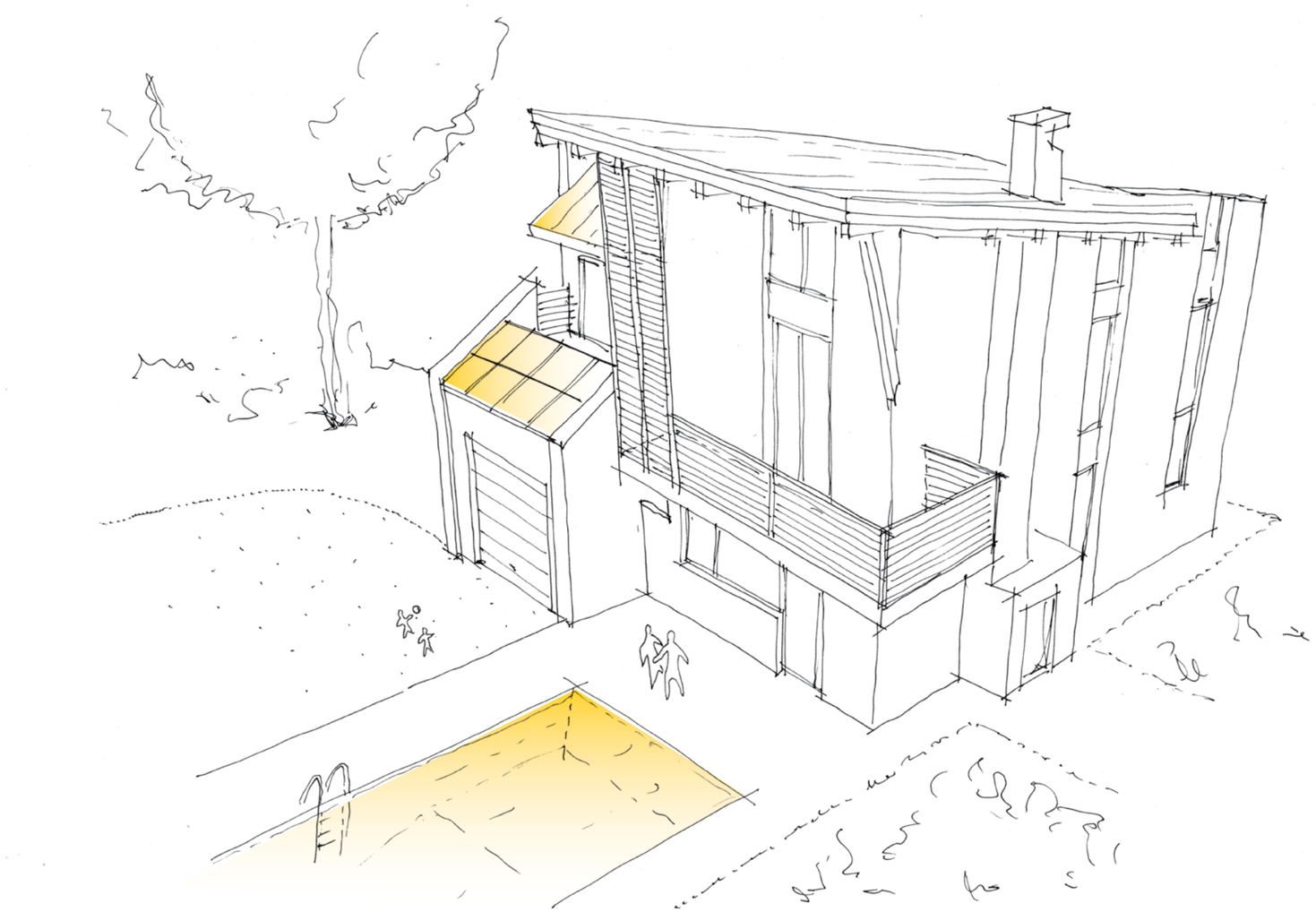
THE NEW ACTIVE PANEL FOR BUILDINGS

CGA Technologies has developed a complete range of natural circulation and pressurised solar absorbers using its own technology from 2000 to the present day.

The maximum dimensions which can be obtained correspond to 1 metre x 3.6 metres, thereby allowing applications which are also able to satisfy the most demanding architectural requirements. In addition, the surfaces can be flat or Double Channel.

The CGA Technologies solar absorber-exchanger is readily integrated both on the facade of buildings and on the roofs.

The systems constructed using the CGA Technologies absorber-exchanger enable domestic hot water or heating water to be produced, both for private use and for public facilities, for example, swimming pools, hospitals, schools, also integrating with District Heating systems.



CLIMABOND®

CLIMABOND® is a radiant panel to achieve maximum comfort in the home.

CLIMABOND® achieves wall, ceiling and floor cooling and heating.

The synergy between the high energy efficiency, maximum comfort and limited energy consumption makes the CLIMABOND® panel a cutting-edge technological solution and is designed for the building's best energy efficiency class.

CLIMABOND® combines with both metal and plasterboard panels to cool and heat domestic and commercial environments.

TECHNICAL DATA

Material	99.7% Aluminium
Class of reaction to Fire	A1
Maximum Operating Pressure	4 bar
Welding test pressure	5 bar
Maximum resistance to pressure	7 bar
Maximum operating temperature	80 ° C
Painting (where foreseen)	not containing harmful substances. Quantity not exceeding 1% of total weight.
Surface emissivity (Tile)	not less than 0.8
Head losses	less than 10 kPa at 40 kg/hour
Specific radiant power	(temperature difference 10°K) in aluminium suspended ceilings.
Performance exceeding	100 W/m2 of active surface in the cooling phase.

Contact the CGA Technologies Research and Development service for all specific technical information.

CLIMABOND®

THE NEW COMFORT IN ARCHITECTURE

CLIMABOND® radiant panels can also be integrated in internal plasterboard partition walls or ceilings and in active floors (operating theatres, work islands).

CLIMABOND® performance is certified by DIN-EN 14240 (Chilled Cealing) and by WSP Lab (Germany)

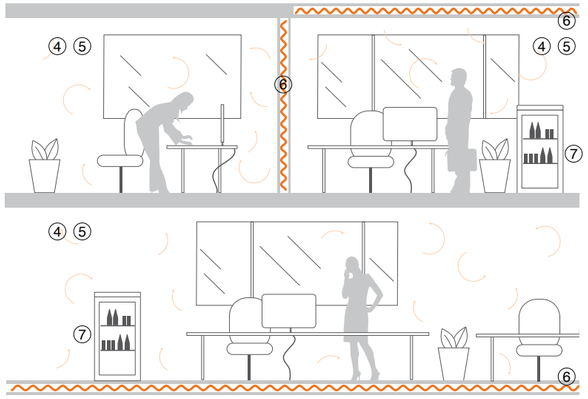
The CLIMABOND® panel guarantees perfect temperature distribution, providing a cooling and heating effect that is absolutely unparalleled and drastically reduces dust circulation.

The maximum thermal performance is guaranteed by an extremely uniform panel surface temperature.

The limited head losses permit a simple and rational distribution of the thermal-carrier fluid at a low energy cost.

Thanks to its high specific density each panel makes the best contribution to heat exchange with the environment with a distinct perception of well-being enjoyed by the user.

The CLIMABOND® panel can be used both “in view” with the environment and concealed, thanks to the load-bearing structure of the aluminium.



④ HEATING SYSTEM
⑤ COOLING SYSTEM
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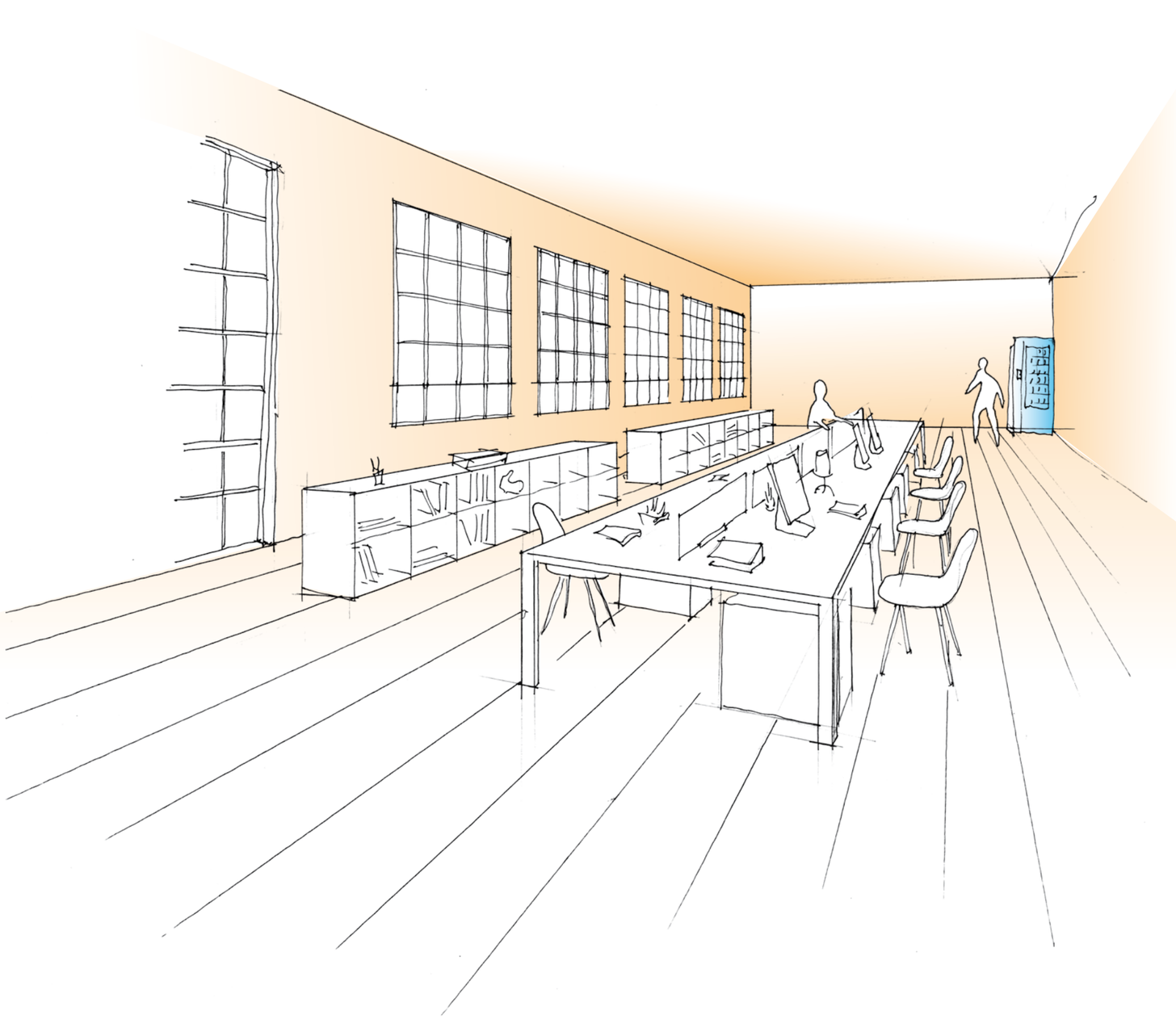


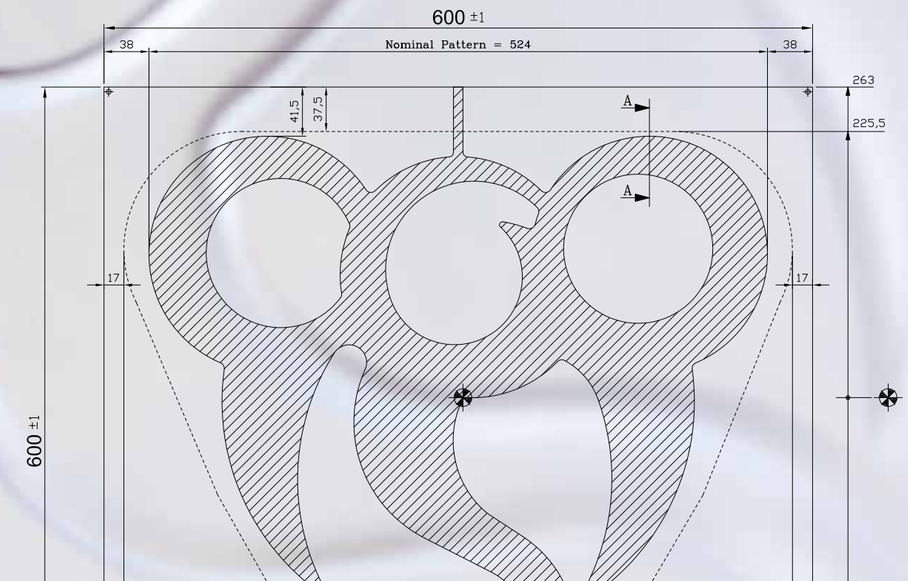
CLIMABOND®

FORM AND CANALISATION OF ROLL-BOND PANELS

Thanks to the unquestionable manufacturing flexibility of the technology employed, CGA Technologies makes it possible to develop an infinite number of forms and types of canalisations, making roll-bond an integral part of an architectural project as well.

“ Installation in 2012. *Azienda Agricola GORI* - Nimis (Udine) - Italy”

GORI



AUTOMOTIVE

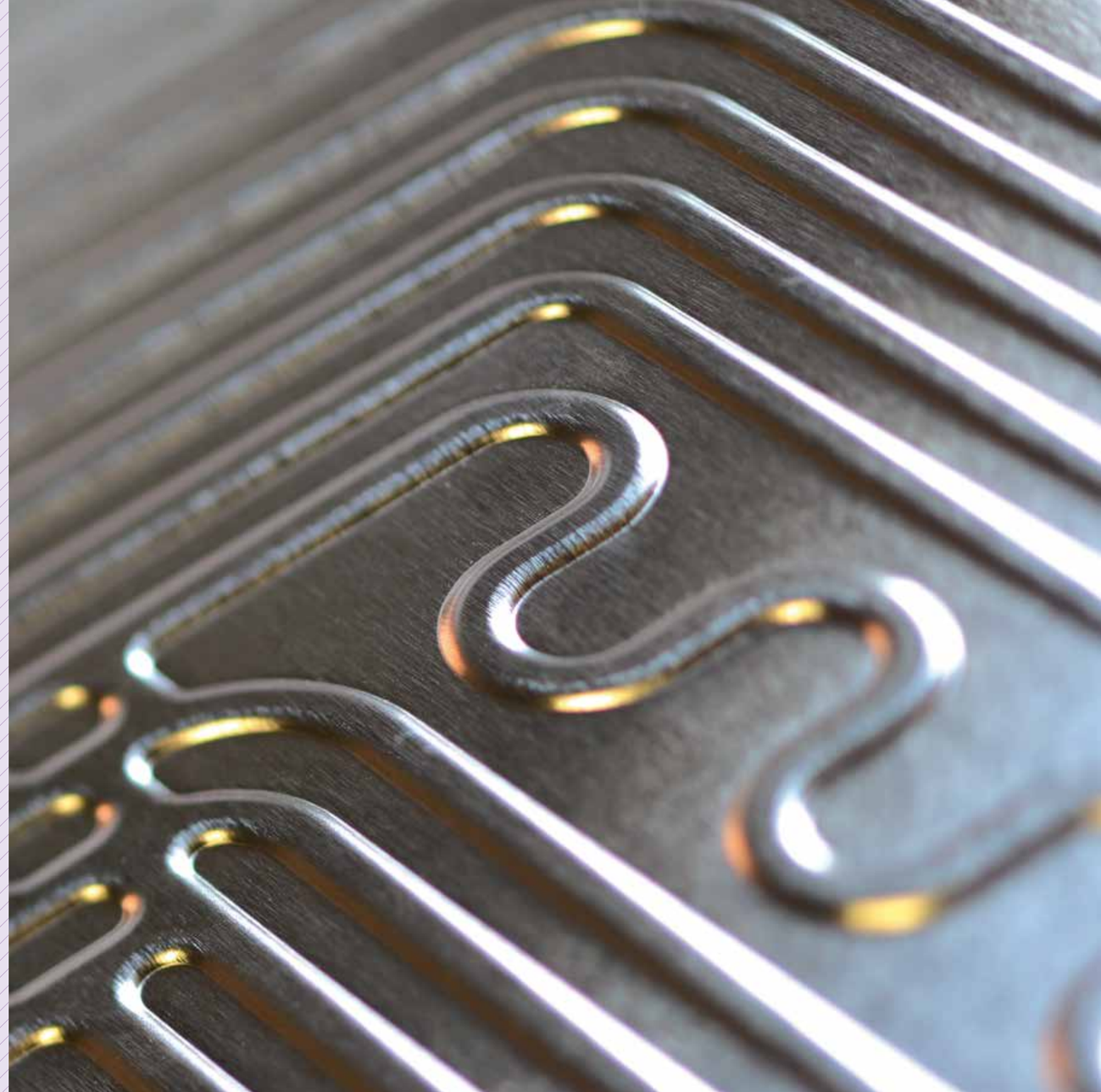
CGA Technologies developments are state-of-the-art for the application of the ROLL-BOND aluminium exchanger in the Automotive sector.

The ROLL-BOND panel comprises two overlapping layers of aluminium sheet inside which a channelling configuration is made in which an exchange fluid (gas or liquid) circulates.

The ROLL-BOND panel is an excellent heat exchanger and guarantees 100% primary exchange, thanks to the high thermal conductivity of aluminium.

The absolute production flexibility of the technology used enables an unlimited number of types of channelling configurations to be created with panel shapes produced to meet every requirement and can be customised.

The ROLL-BOND exchanger can be used with the latest R1234yf.

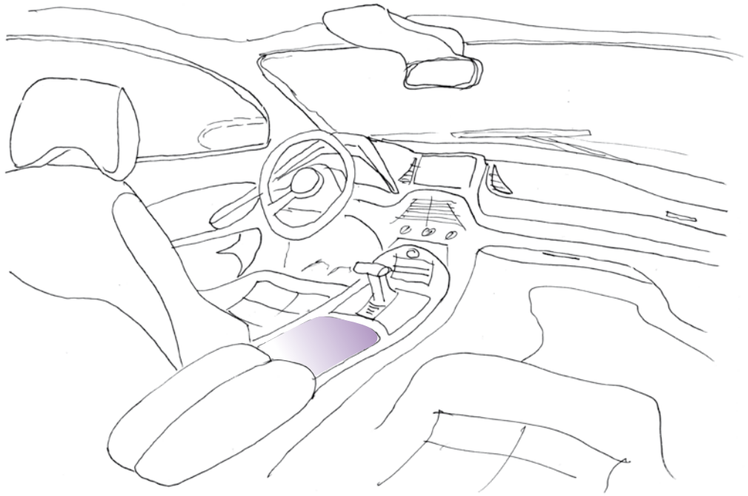


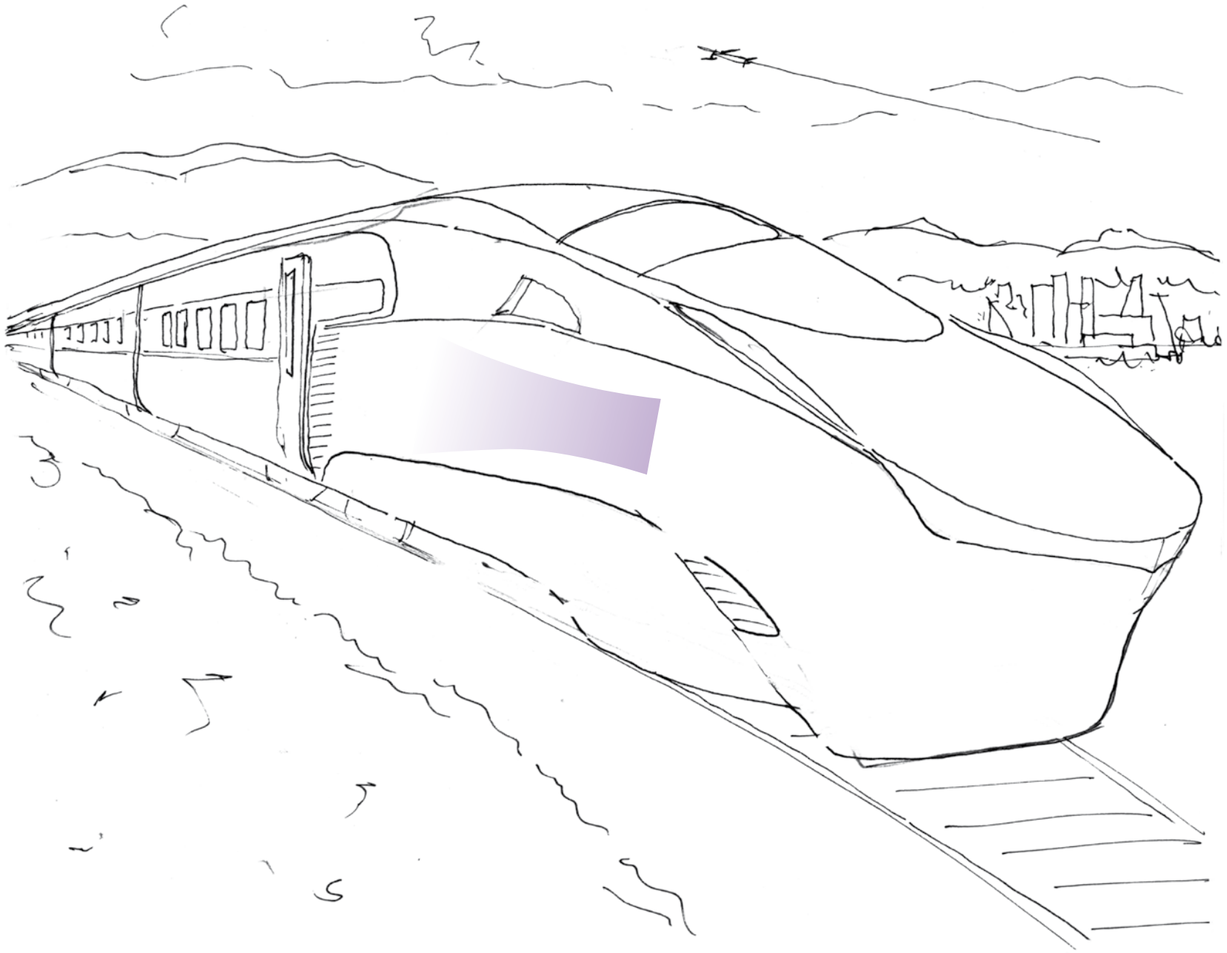
AUTOMOTIVE

FROM PASSIVE TO ACTIVE IN AUTOMOTIVE BUSINESS

Typical uses can be the following:
- cooled spaces for caravans, lorries ,earth moving machines, cars, buses;
- cooling batteries in the railway sector;
- preheating combustible fluids;
- heating driver and passenger seats;
- condensers to generate drinking water for aircraft.

A broad range of products is available which foresee various types of exchanger panels.





COIL

CGA Technologies directly provides to the market Aluminium Coil “100% produced in Italy”.

The Aluminium Coil produced meet the stringent qualitative restrictions taken by CGA Technologies for the production of ROLL-BOND aluminum exchangers.

COIL PRODUCT RANGE - BY CONTINUOUS CASTING PROCESS

DESIGNATION	CHEMICAL COMPOSITION	WIDTH COIL
1050A	to 99,5%	from 1.110 mm to 1.620 mm
3105	alloy AL and Mn -Mg	from 1.250 mm to 1.350 mm
5005	alloy AL and Mg	from 1.110 mm to 1.570 mm

As UNI EN 573-3

graphic: **anthes** ph: **fotoimmaginae**

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