

# The Doorway™

M.C. Gill Corporation Group of Companies

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## *A Vintage Year for* **ALCORE BRIGANTINE**





# *A Vintage Year for*







The word Bordeaux calls to mind a setting where old-world tradition meets modern-day technology. The region is a landscape punctuated by gnarled, grape-heavy vines, centuries-old architecture and wineries (Château Lafite-Rothschild, Château Margaux and Château Latour) that are synonymous with excellence. The vintners in the Aquitaine region in Southwest France produce some of the finest wines in the world. Their craft is rooted in time-honored traditions, an interesting juxtaposition to the concentration of aerospace scientists who share this temperate region.

# ALCORE BRIGANTINE

Nearly two decades ago, a small aircraft company called Brigantine Aircraft opened its doors in Bordeaux, France. Their original objective was to manufacture business jets, but their plans did not materialize. Instead, they happened onto an opportunity to manufacture the frame and structural components for commercial cutting machinery used in the retail clothing industry. Brigantine Aircraft was experienced in the production of commercial-grade aluminum honeycomb and felt that composite materials would provide the appropriate structural properties for this project. Accordingly, the majority of their efforts were channeled into this one application, leaving only a small number of other industrial customers on their client list.

**In 1989** the company moved into a new plant south of Bordeaux in Anglet near the Biarritz airport. It was a challenging time in the region. Deregulation of the airline industry and a shifting focus on safety were creating new opportunities. Yet, in this economic environment Brigantine Aircraft was struggling, so the principals evaluated the situation and decided their business model needed to change.

**In 1995** Brigantine Aircraft welcomed new owners who tasked the company with manufacturing aluminum honeycomb for a more diverse market mix. A staff of 15 employees ran the daily operation producing materials for the railway, shipyard, building and industrial equipment industries. Soon after, Brigantine Aircraft initiated negotiations with Aerospatiale (now EADS Airbus) to acquire their aerospace-grade aluminum honeycomb line located in Nantes.

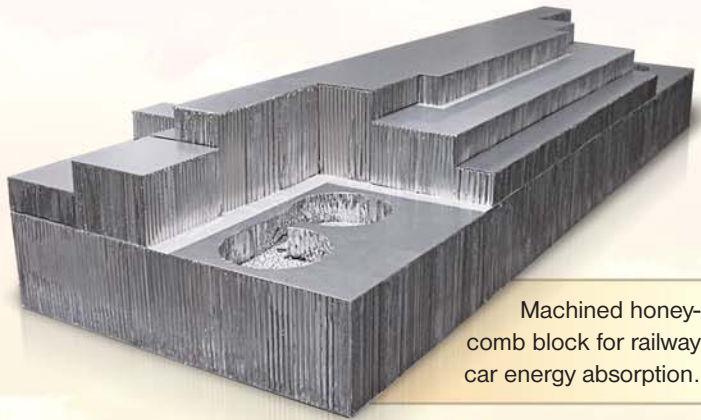
**In 1998** Brigantine Aircraft found itself competing against Alcore Inc., (a relatively new U.S. company formed through a series of mergers within the chemical manufacturing industry) for the Aerospatiale line. Fortuitously, both realized they could achieve more success by collaborating efforts rather than competing against each other. Alcore was largely focused on the U.S. aerospace market while Brigantine Aircraft serviced non-aerospace industries in Europe. After Brigantine Aircraft successfully purchased the Aerospatiale line they were acquired by Alcore and emerged as Alcore Brigantine.

**In 2001** Alcore Brigantine offered a unique combination of capabilities, including a strong European commercial customer base, expertise in structural core technology, and specialized honeycomb production facilities (for both industrial/commercial grade core and aeronautical/space applications). In 2001, M.C. Gill Corporation recognized that potential and acquired Alcore, Inc. and Alcore Brigantine.





**Today** Alcore Brigantine's offices are strategically located approximately 300 kilometers from Toulouse (Airbus headquarters) and 20 miles from the Spanish border.



Machined honeycomb block for railway car energy absorption.



Above: Interior railway panels during finishing process.



Left: Foil for aluminum honeycomb block manufacturing.

At the time of the acquisition (2001), Alcore Brigantine specialized in the manufacture of aluminum honeycomb as a kinetic energy absorption material for the aviation, high-speed rail and automotive markets. They also supplied non-aerospace industrial-grade sandwich panels. The non-aerospace business represented over two-thirds of their revenue with aerospace accounting for the remaining one-third. The aerospace products were primarily aluminum honeycomb core and 5-axis machined aluminum honeycomb.

In the convening decade, vertical integration between M.C. Gill Corporation and its subsidiaries has helped Alcore Brigantine to achieve some major milestones, including:

- improved facilities and upgraded equipment
- renewed focus on core competencies to attract and retain key customers
- enhanced qualification portfolio
- defining their unique production capabilities.

Precision Process Shop (PP1) prepares 5-axis machined parts.



Alcore Brigantine currently commands a combination of office suites, manufacturing space and warehousing in an industrial center near the Biarritz airport. This arrangement allows management to facilitate efficient work flow for reduced production times and improved quality. State-of-the-art equipment is installed within the manufacturing plant with dedicated cutting, profiling and heat forming stations. These include two dedicated presses for block curing, four sandwich panel bonding stations, a 3-axis machine, five 5-axis

machines and four heat-set ovens.

Warehousing areas accommodate both raw materials and finished goods to assure closely controlled material flow. Most recently, they celebrated the completion of a new Precision Process N03 (PP3) workshop for non-metallic honeycomb machining. Their new 5-axis milling center became operational in August 2008, bringing Alcore Brigantine's capabilities to four dedicated milling centers. At the same time, Alcore Brigantine welcomed a new Contamination Control Area (CCA) workshop to process composite products in development, including thermal stabilization, forming, slicing and potting.



Precision Process Shop (PP2) prepares heat-formed parts for engines' inner-fixed structures.



5-axis machined multi-component part with inspection tags.





Non-metallic core is heat formed, potted and 5-axis machined for Airbus A330 flap track fairing.



Alcore Brigantine has a broad array of core competencies in aerospace-grade structural core materials technology with in-house design and special processing expertise. They can form; trim and 5-axis machine aluminum cores and non-metallic cores. Alcore Brigantine manufactures and details sandwich panels from simple shapes to complex parts for rail, shipbuilding and architectural applications. They also excel in a line of chemical treatments for aluminum core products and they remain experts in the design and manufacture of energy absorption devices in aerospace, railway and highway safety markets.



Sawing aluminum honeycomb block before expansion.





## *A Vintage Year for* **ALCORE BRIGANTINE**

As proof of their commitment to quality, Alcore Brigantine is diligent toward enhancing their certification portfolio. They successfully earned NADCAP audits for Quality Systems and Composite Core Processing for three successive years entitling them to an 18-month extension. NADCAP is a worldwide cooperative program of industry prime contractors that governs precise standards used to measure the competency, capability and consistency of suppliers and associated products within the aerospace and automotive industries. Its mission is to provide international, unbiased, independent manufacturing process and product assessments and certification services to add value, reduce costs, and facilitate relationships between primes and suppliers.



Top: Fitting PAA core details per customer requirements.  
Middle: Aluminum foil transferred to print line.  
Bottom: PP1 shop staff inspect parts after 5-axis machining.







Alcore Brigantine is also designated EN9100 certified. The AS/EN 9100 certification was introduced in 1997 by the International Aerospace Quality Group (IAQG) to encourage international quality, safety and technology standards in air transport. The AS/EN 9100 standard meets the complex and unique demands of the aerospace industry. The certification can be applied to all areas in aviation such as the design and manufacture of equipment, airport and airline operations, aircraft accessory supply, spares supply and maintenance.



Top: Interior railway car panels. Above: Quality inspection station.

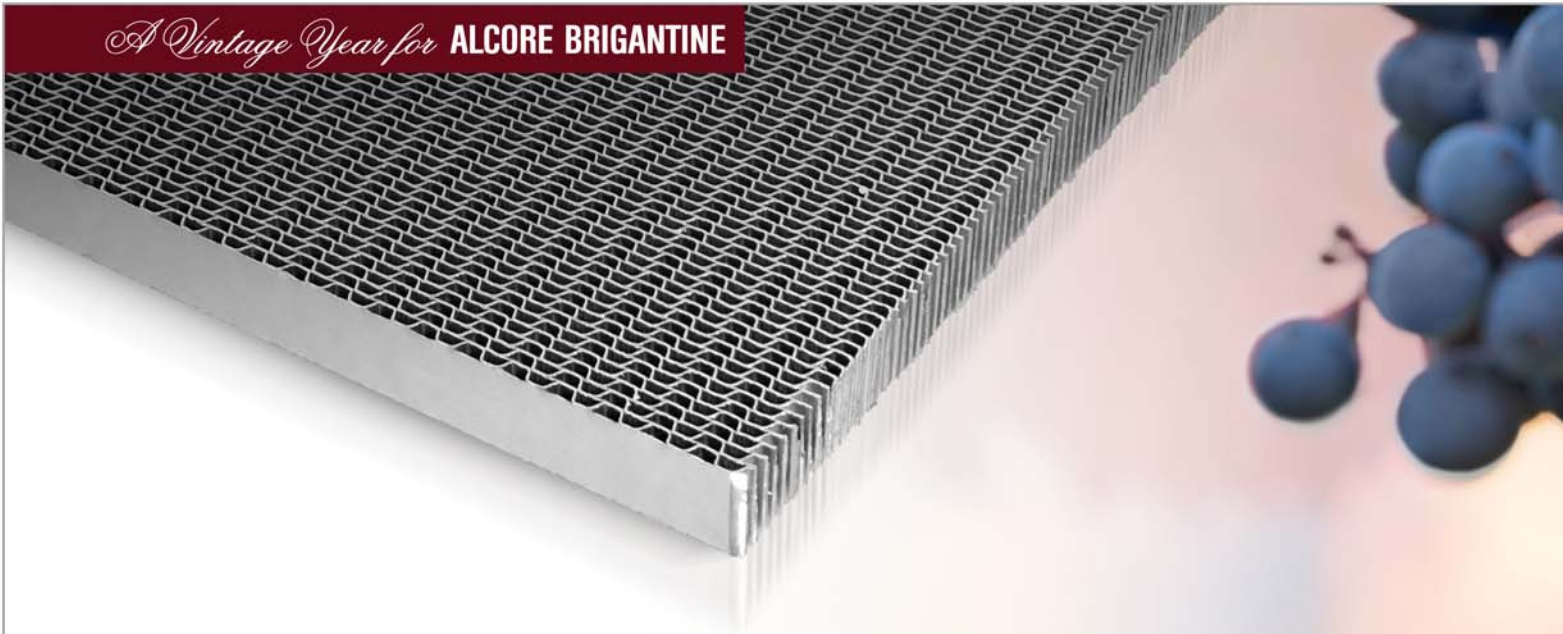
AS/EN 9100 emphasizes areas that have the greatest impact on safety like management, verification and validation, process control, purchasing, inspection and testing, and control of non-conformances. The AS/EN 9100 certification enables an organization to demonstrate its commitment to quality, safety and reliability.



Non-metallic 5-axis machined core detail for A330 flap track fairing.



## *A Vintage Year for* **ALCORE BRIGANTINE**



Although many things have changed, some remain the same. Alcore Brigantine's largest supplier is still Alcore, Inc., providing approximately 85% of their PAA (phosphoric acid anodized) aluminum core. This relationship has allowed Alcore Brigantine to shift many long-time customers from Aerospace products to their newer PAA technology. M.C. Gill Corporation headquarters continues to provide strategic management support, organizational guidance and strong brand recognition.



At a time when many businesses are thinking of slowing down, Alcore Brigantine is ramping up for future demands. Production continues with greater scrutiny on optimizing industrial processes, offering exciting new products and reaffirming their long-standing commitment to customer service. Proud of their long history and a tradition of manufacturing excellence, Alcore Brigantine is positioned well, optimistic about their future and expects 2009 to be a very good year.





# Alcore Brigantine

- Commercial and aerospace grade honeycomb manufacturing.
- In-house design and special processing expertise.
- 5-axis machining for aluminum and non-metallic cores.
- Sandwich panel detailing for rail, marine, highway and architectural applications.

## THE M.C. GILL GROUP OF COMPANIES



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*Alcore does not sell sandwich panels. Contact M.C. Gill for these products.*



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# Trivia

## How Come?

Why do we press harder on a remote control when we know the batteries are dead?

Why do banks charge a fee on “insufficient funds” when they know there is not enough money?

Why does someone believe you when you say there are four billion stars, but check when you say the paint is wet?

If people evolved from apes, why are there still apes?

Why is it that no matter what color bubble bath you use, the bubbles are always white?

Is there ever a day that mattresses are not on sale?

Why do people constantly return to the refrigerator with hopes that something new to eat will have materialized?

Why do people keep running over a string a dozen times with their vacuum cleaner, then reach down, pick it up, examine it, then put it down to give the vacuum one more chance?

In winter why do we try to keep the house as warm as it was in summer when we complained about the heat?

## Good Advice

1. The nicest thing about the future is that it always starts tomorrow.
2. Money will buy a fine dog, but only kindness will make him wag his tail.
3. If you don't have a sense of humor, you probably don't have any sense at all.
4. Seat belts are not as confining as wheelchairs.
5. A good time to keep your mouth shut is when you're in deep water.
6. How come it takes so little time for a child who is afraid of the dark to become a teenager who wants to stay out all night?
7. Why is it that at class reunions you feel younger than everyone else looks?
8. There are worse things than getting a call for a wrong number at 4 AM. It could be a right number.
9. No one ever says, “It's only a game,” when their team is winning.
10. I've reached the age where the happy hour is a nap.

# THE FUNNY SIDE

## The Experiment

A professor stood before his philosophy class and had some items in front of him. When the class began, he picked up a large empty jar and proceeded to fill it with golf balls.

He then asked the students if the jar was full. They agreed that it was.

The professor then picked up a box of pebbles and poured them into the jar. He shook the jar lightly. The pebbles rolled into the open areas between the golf balls. He then asked the students again if the jar was full. They agreed it was.

The professor next picked up a box of sand and poured it into the jar. Of course, the sand filled up everything else. He asked once more if the jar was full. The students

responded with a unanimous “yes.”

The professor then produced two cups of coffee from under the table and poured the contents into the jar, effectively filling the empty space between the sand. The students laughed.

“Now,” said the professor, as the laughter subsided, “I want you to recognize that this jar represents your life.

“The golf balls are the important things – your God, family, your children, your health, your friends, and your favorite passions – things that if everything else was lost and only they remained, your life would still be full.

“The pebbles are the other things that matter, like your job, your house, and your car.

“The sand is everything else – the small stuff.

“If you put the sand into the jar first,” he continued, “there is no room for the pebbles or the golf balls. The same goes for life. If you spend all your time and energy on the small stuff, you will never have room for the things that are important to you.

“Pay attention to the things that are critical to your happiness. Play with your children. Take time to get medical checkups. Take your partner out to dinner. There will always be time to clean the house and fix the disposal.

“Take care of the golf balls first – the things that really matter. Set your priorities. The rest is just sand.”

One of the students raised her hand and inquired what the coffee represented. The professor smiled. “I'm glad you asked. It just goes to show you that no matter how full your life may seem, there's always room for a couple of cups of coffee with a friend.”

