
4pizero
a technology of
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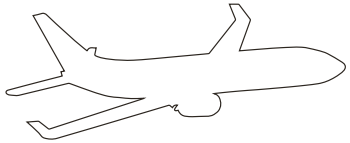
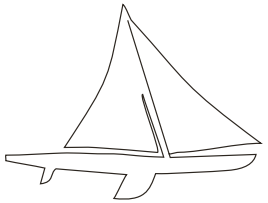
WHAT IS 4PIZERO TECHNOLOGY

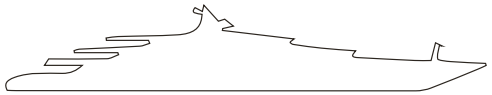
Introducing a new technology for the production of hyper-light and non-combustible furnishings for boats, cruise ships, aircrafts, and beyond.

4Pizero technology has been developed with complete CAD-PDM-CAM-ERP-MES management software and integrated with the 4.0 production machines, allowing the passage from today's artisan techniques to 4Pizero improving mechanical performances, while reducing production times and final costs.

4Pizero does not use commercial panels, a major difference from current technologies, but rather creates the sandwich panels during the creation of the components.







Legend

CAD= Computer-Aided Design
PDM= Product Data Management
CAM= Computer-Aided Manufacturing
ERP= Enterprise Resource Planning
MES= Manufacturing Execution Systems

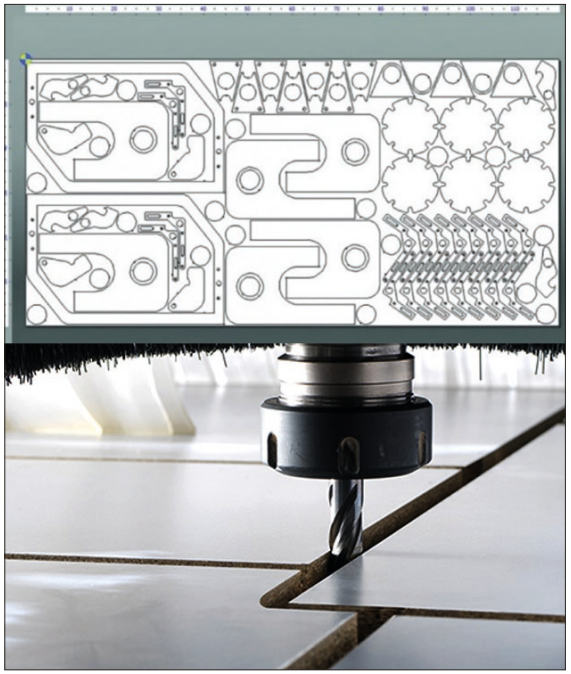
WEIGHING THE ADVANTAGES

	Current Technologies	4Pizero Technology
price - quality benefit	more price - standard quality	less price - higher quality
quantity benefit	one component produced at a time.	multiple components produced simultaneously.
resource - waste benefit	produced on commercial prepackaged panels	sandwich panel is produced during the production of the project components, allowing customization.
production benefit	during the production of interiors, the structural integrity of the commercial panel is compromised for inserting internal reinforcements, often done by hand.	the sandwich and components are produced simultaneously with a highly automated 4.0 process, drastically reducing the phases done by hand and guaranteeing an uncompromised, high quality panel.

A COST COMPARISON

Current Technologies

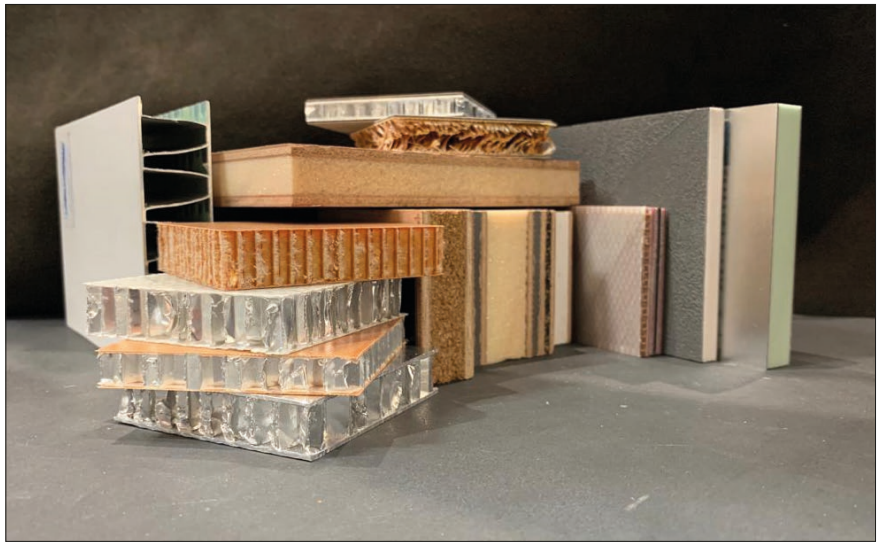
produce one component at a time
with a high price.



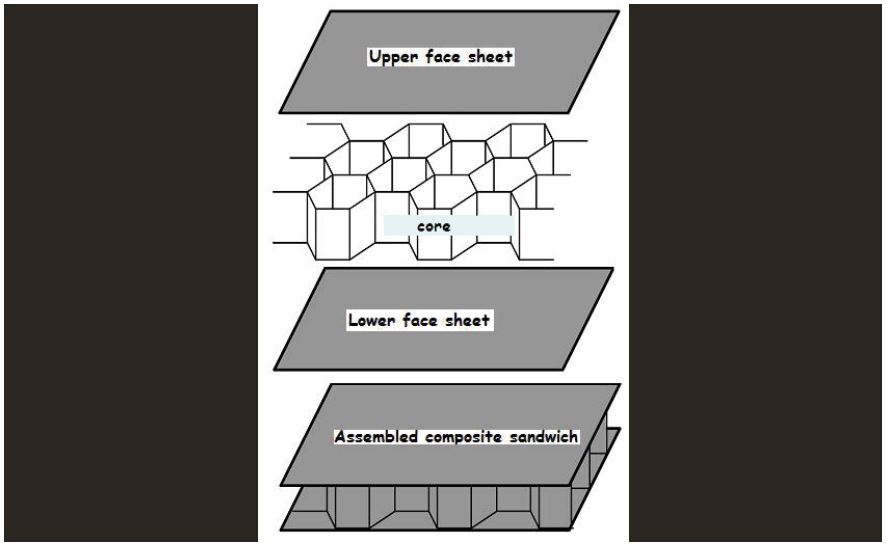
4Pizero

produce many components at a time
with a low price.

CUSTOM MADE PANELS

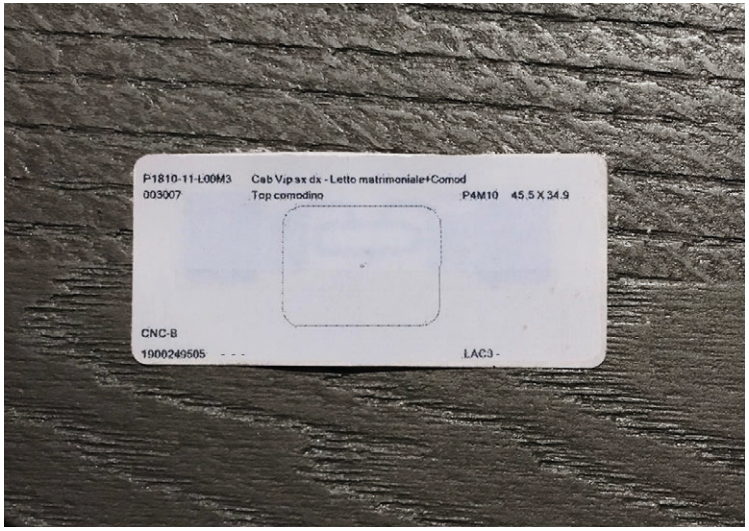


One of the major factors that sets 4Pizero apart is that no prepackaged mass produced panels are utilized in the process. Instead, with the 4Pizero system, panels are custom made specifically to the details of the project.



This allows a strategic approach to the placement of reinforcement, edging and connection detail, resulting in precise components of durable connection points.
The possibilities of the project are endless, design and its impact no longer being restricted by the parameters of commercial panels.

RFID



RFID stands for Radio Frequency Identification, it is a technology 4Pizero uses that allows identification of every single piece created in the mass production with a capacity of the identifying 300 pieces simultaneously.

The labels follow the pieces throughout the entire course of production and shipping, updating details digitally as needed. The RFID process optimizes the tracebility of the products allowing for the maximum time efficiency in the production, setting 4Pizero apart from standard panels.

PRODUCTION FLOW

Offer Development

STEP 1

3D Project by Customer

Development of 3D CAD drawings with all project details.

STEP 2

Definition of Project Needs

Customer defines the target weight and/or the application of non combustible materials.

STEP 3

Selection of 4Pizero Product

Selection of the best 4Pizero product for the project.

STEP 4

LIBRARY

Determination of Core Reinforcements

System will develop information and details necessary for the selection of hardware reinforcement, holes substructures and edge materials.

STEP 5

Cost Calculations

Based on the information of the 3D CAD drawing and Materials Library, we present our best offer.

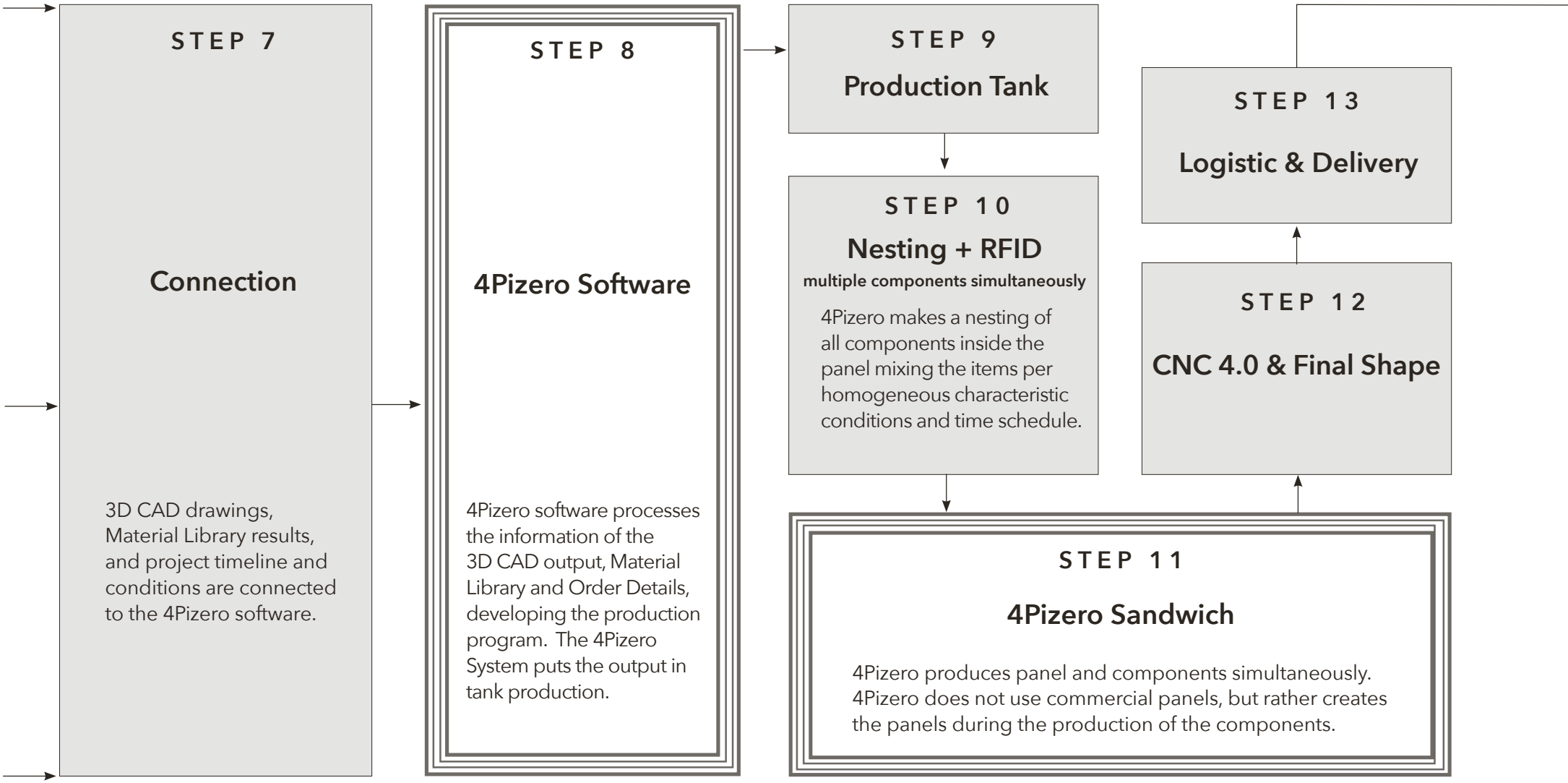
STEP 6

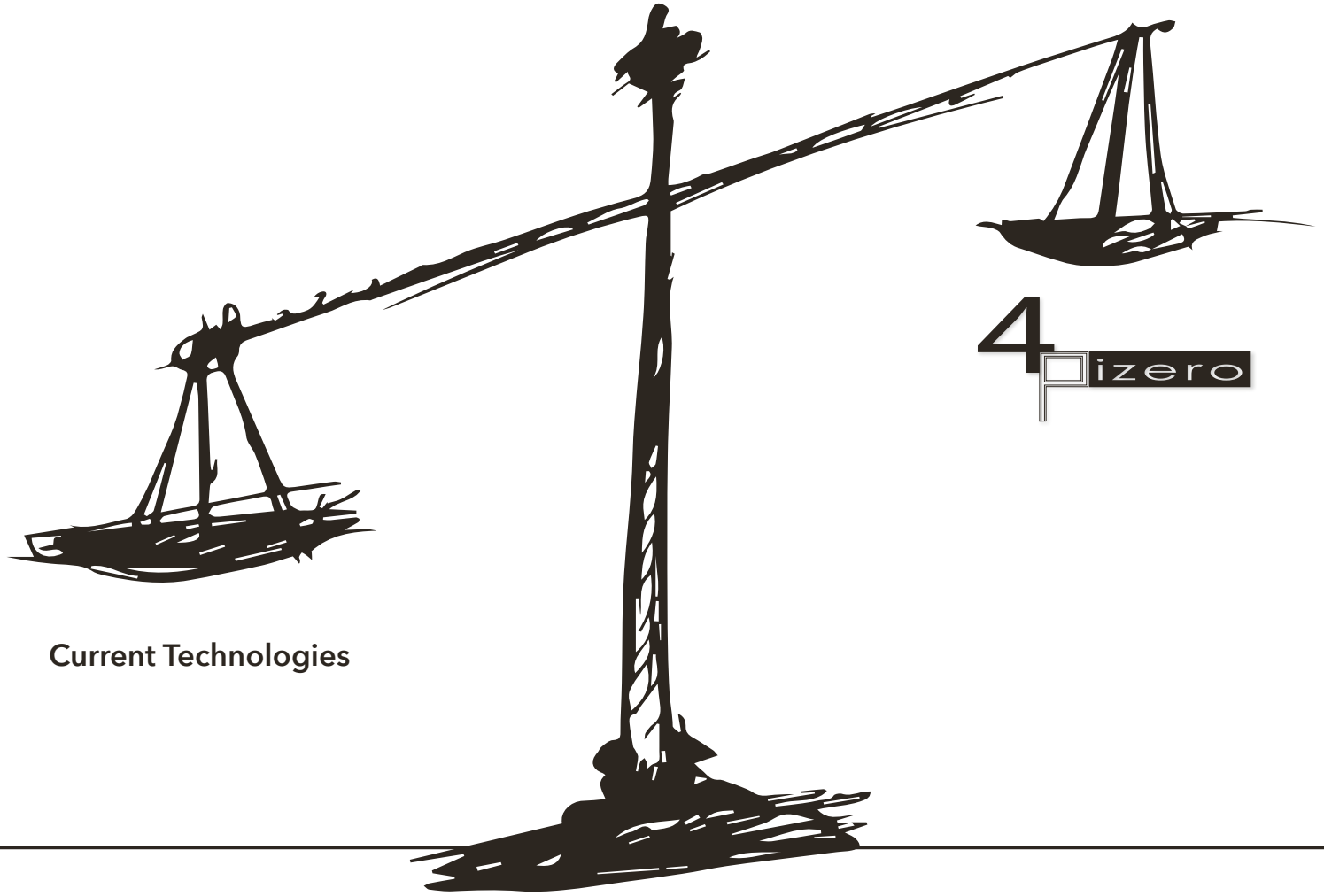
Order

Time schedule and conditions of the production of the project are determined.

PRODUCTION FLOW

Production





enlighten it

4PIZERO FAMILIES

Lightweight sandwiches:

L1 Carbon Sandwiches

carbon weight reduction

65% > from Standard

L2 Aramid & Glass Sandwiches

composite weight reduction

50% > from Standard

L3 Wood Sandwiches

wood weight reduction

40% > from Standard

Non Combustible:

NCMP -LW

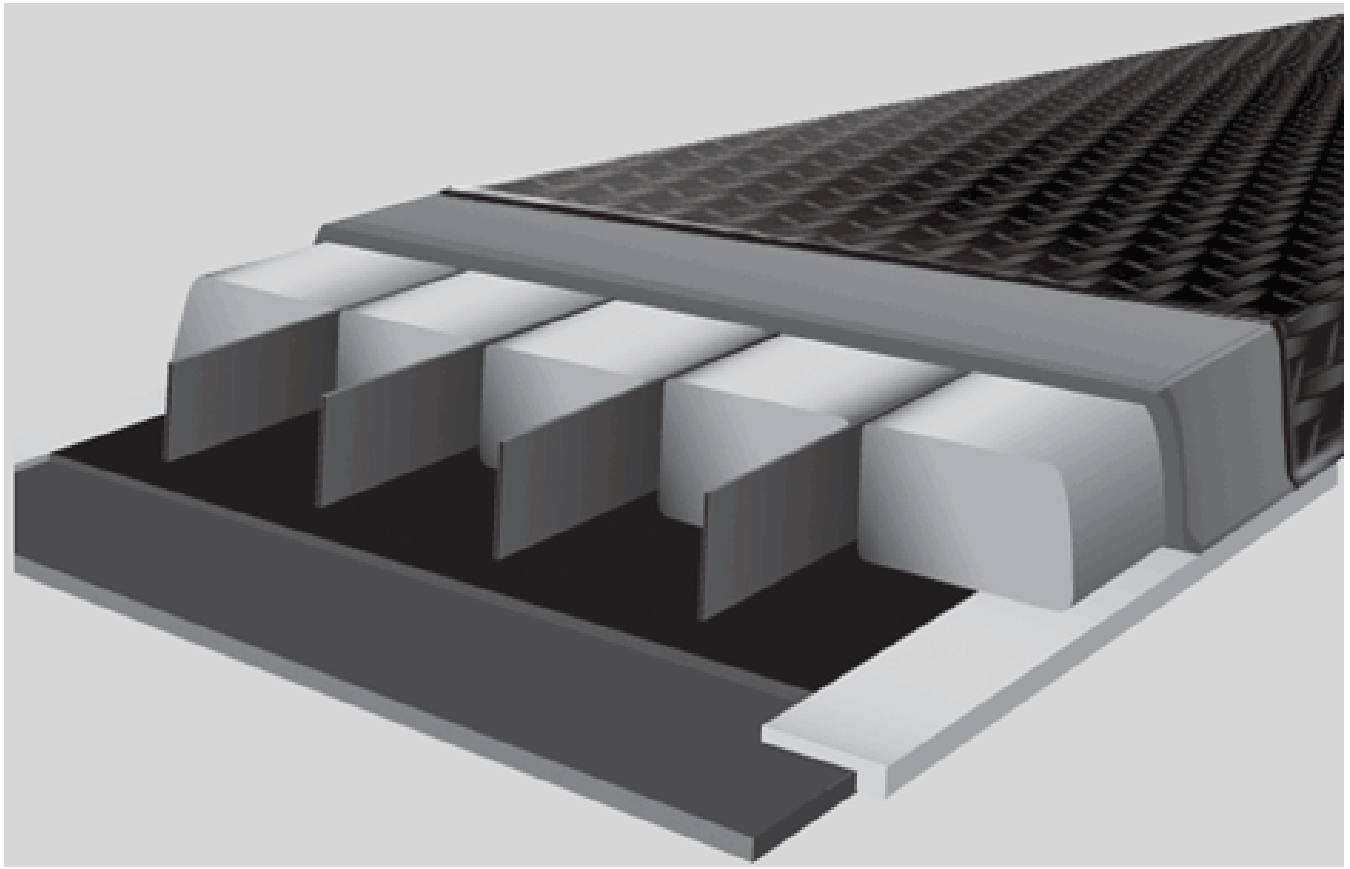
Non Combustible Paolini Material Lightweight

NCMP

Non Combustible Paolini Material Non Lightweight

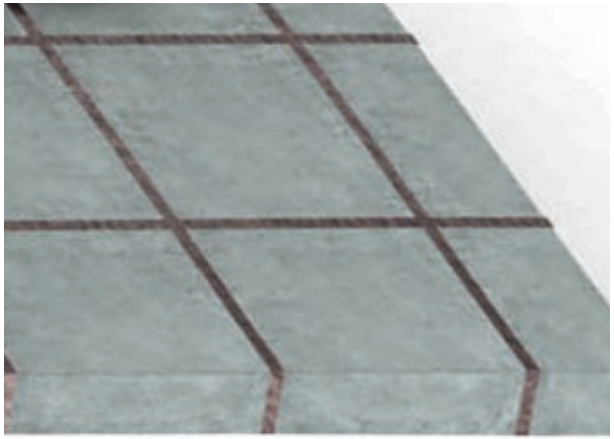
L1 - SS Carbon

Super Sandwich 4Pizero

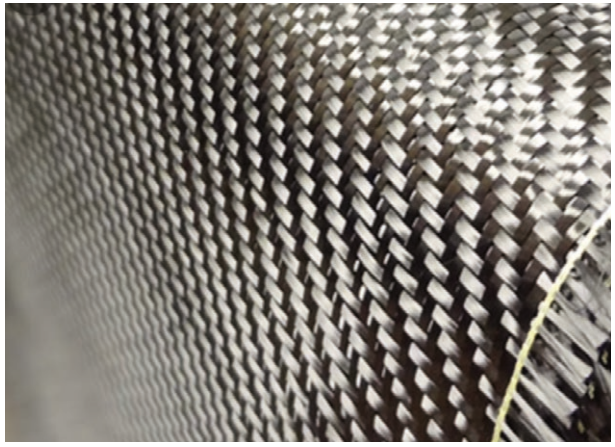


The **L1-SS Carbon** sandwich is composed by Carbon facades + 2 Layers of 3 mm PVC and 4Pizero foam core.

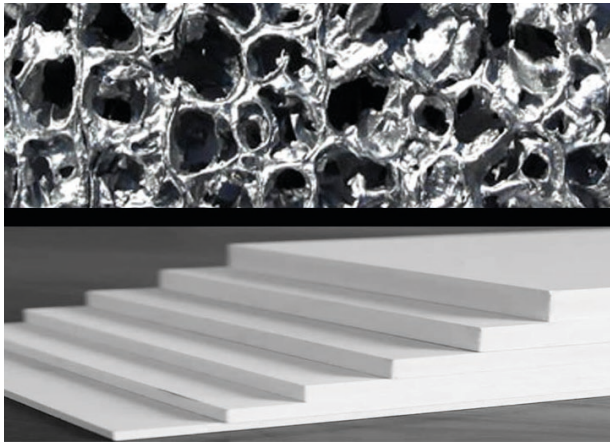
L1 - SS Carbon



Core: 4Pizero foam, carbon frame, aluminum foam



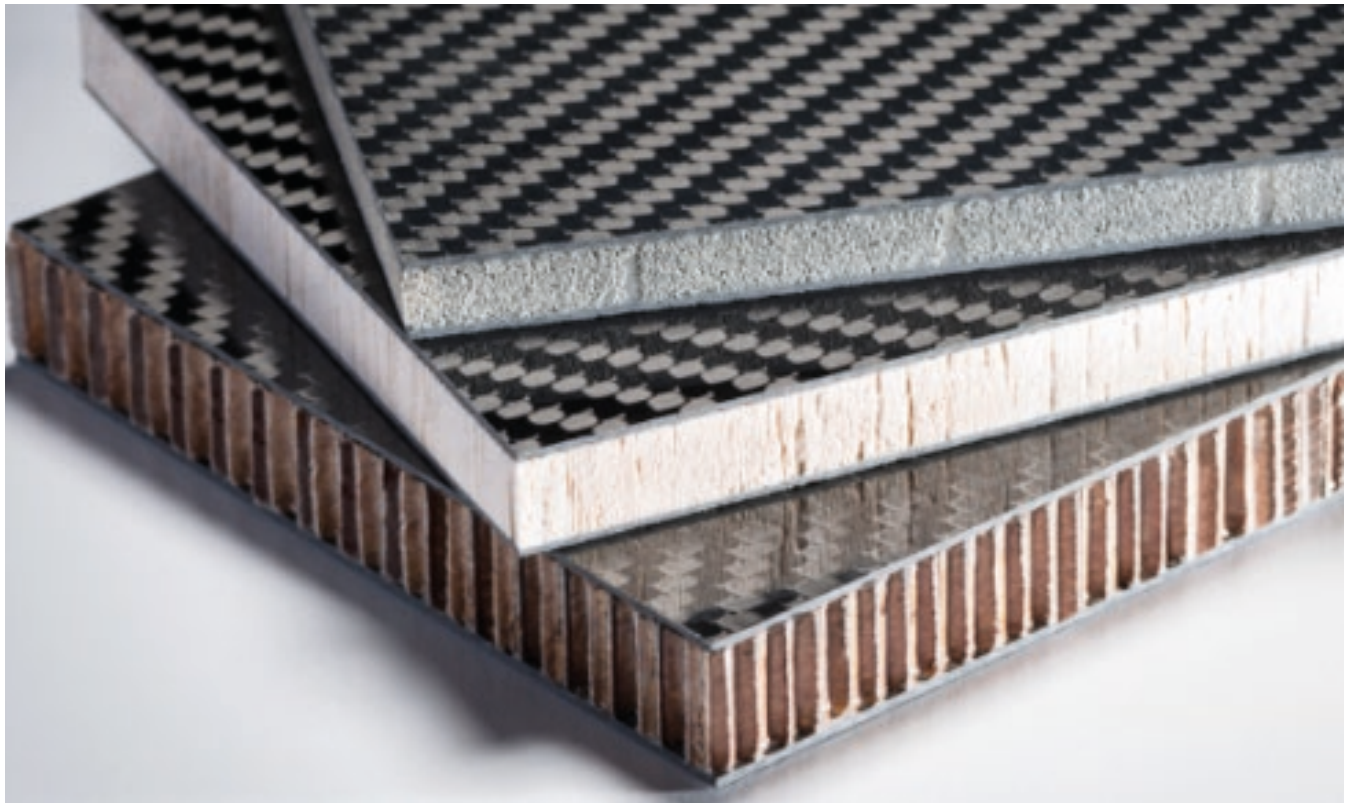
Facades 1-2: Laminated Carbon Fiber



Hardware reinforcements: PVC from 55 to 300 kg/m3

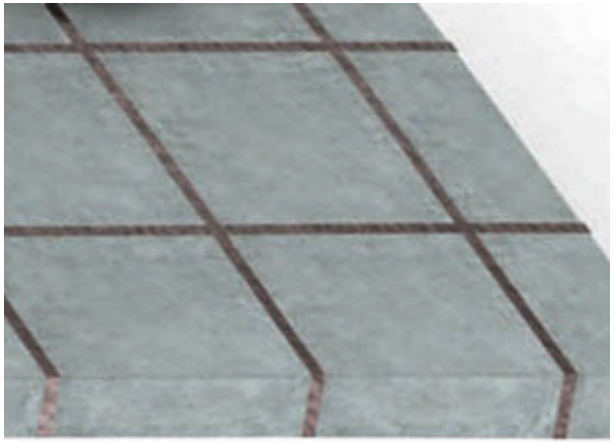
	Sandwich	Layers		Materials				
L1-SS Carb		Facade 1	Thickness	Custom				
		Double Sandwich	Density	PVC 55 Kg/m3	PVC 80 Kg/m3	PVC 100 Kg/m3	PVC 130 Kg/m3	
		Core	Density	4P0 C10 Kg/m3	4P0 15 Kg/m3	4P0 25Kg/m3	4P0 40 Kg/m3	4P0 55 Kg/m3
		Double Sandwich	Density	PVC 55 Kg/m3	PVC 80 Kg/m3	PVC 100 Kg/m3	PVC 130 Kg/m3	
		Facade 2	Thickness	Custom				

L1 - L Carbon

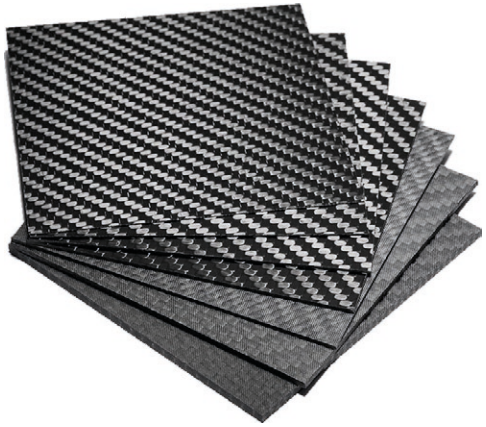


The **L1-L Carbon** sandwich is composed of carbon fiber facades with a 4Pizero or other material core.

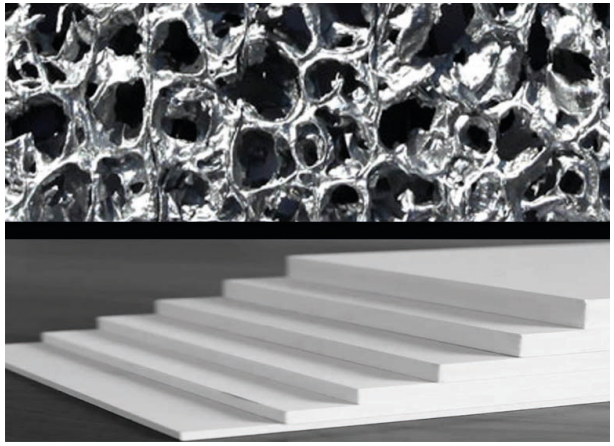
L1 - L Carbon



Core: 4Pizero foam carbon frame



Facades 1-2: Carbon Fiber



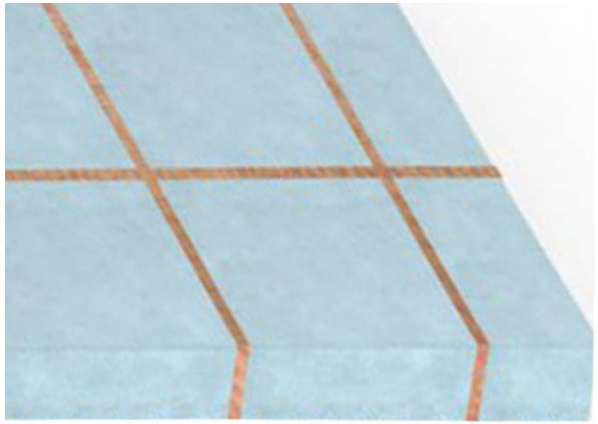
Hardware reinforcements: PVC or aluminum from 55 to 300 kg/m3

		Layers		Materials				
L1-L Carb		Facade 1		C 0,2 mm	C 0,4 mm	C 0,6 mm	C 0,8 mm	C 1 mm
		Core	Density	4P0 C10 Kg/m3	4P0 15 Kg/m3	4P0 25Kg/m3	4P0 40 Kg/m3	4P0 55 Kg/m3
		Facade 2		C 0,2 mm	C 0,4 mm	C 0,6 mm	C 0,8 mm	C 1 mm

L3 - 0 Wood

The **L3-0 Wood** sandwich is composed by wood facades and 4Pizero foam core.

L3 - 0 Wood



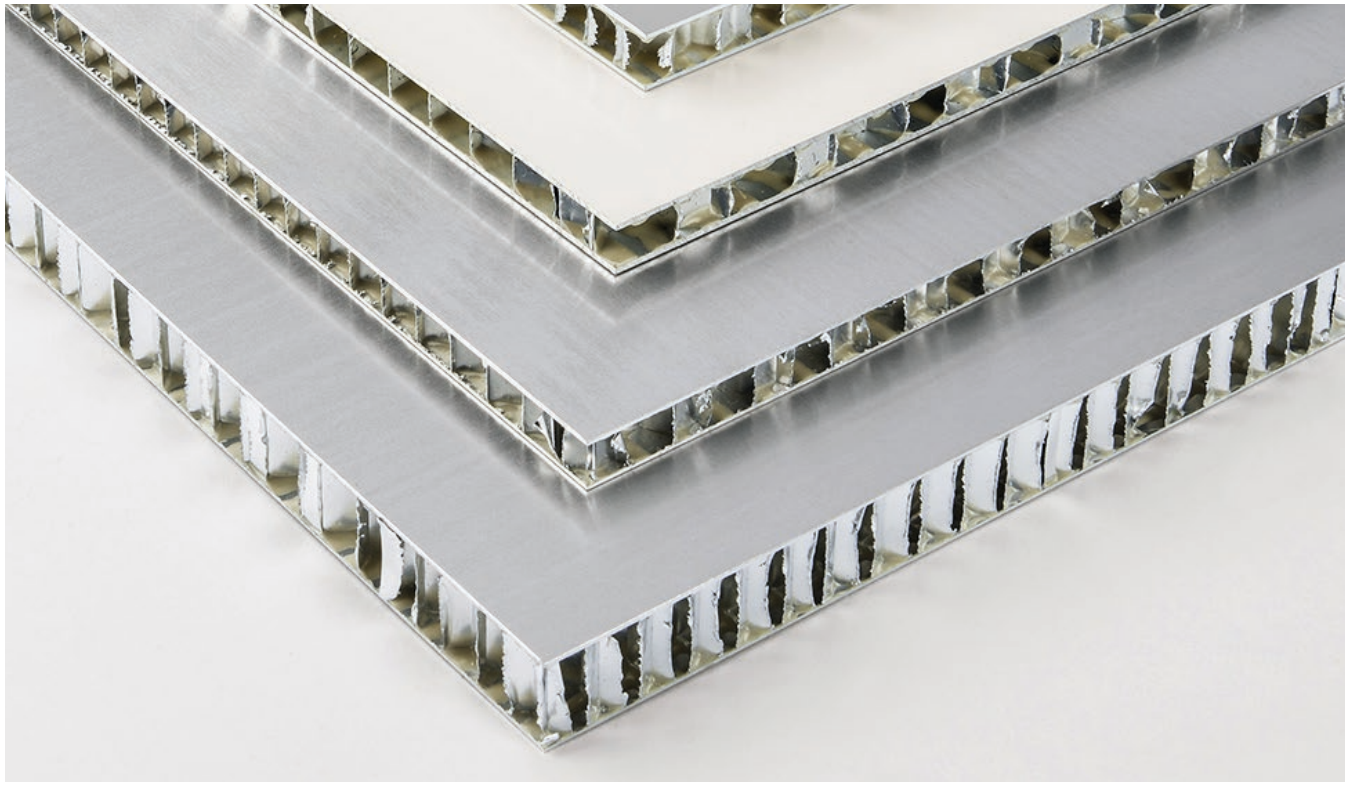
Core: 4Pizero foam, wood structure

Facades 1-2: Okumè Plywood

Hardware reinforcements: PVC or solid wood from 135 to 300 kg/m3

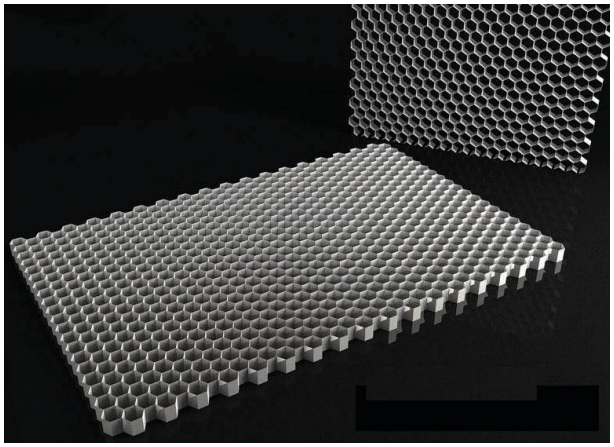
		Layers		Materials				
L3O		Facade 1		Okumè Plywood 1,8 mm	Okumè Plywood 2 mm	Okumè Plywood 4 mm	Okumè Plywood 10 mm	Okumè Plywood 15 mm
		Core	Density	4P0 C10 Kg/m3	4P0 15 Kg/m3	4P0 25Kg/m3	4P0 40 Kg/m3	4P0 55 Kg/m3
		Facade 2		Okumè Plywood 1,8 mm	Okumè Plywood 2 mm	Okumè Plywood 4 mm	Okumè Plywood 10 mm	Okumè Plywood 15 mm

NCMP - LW

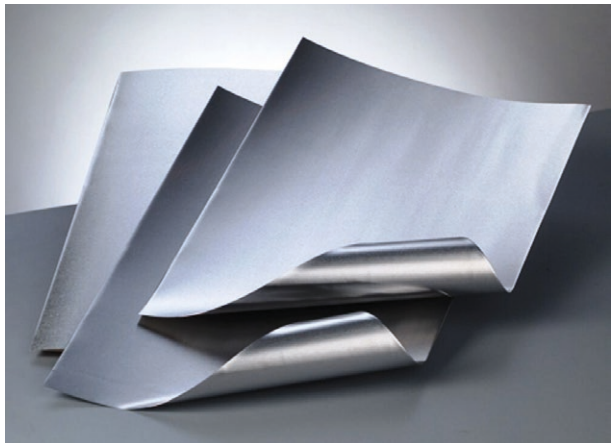


The **NCMP - LW** sandwich is composed of light and non combustible materials.

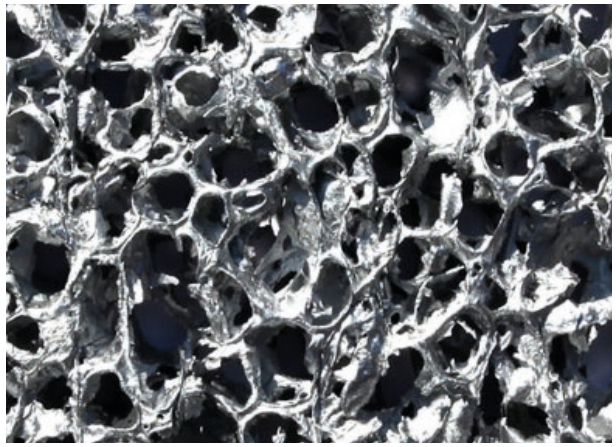
NCMP - LW



Core: Alveolar Aluminum



Facades 1-2: Aluminum from 0,3mm to 2mm thick

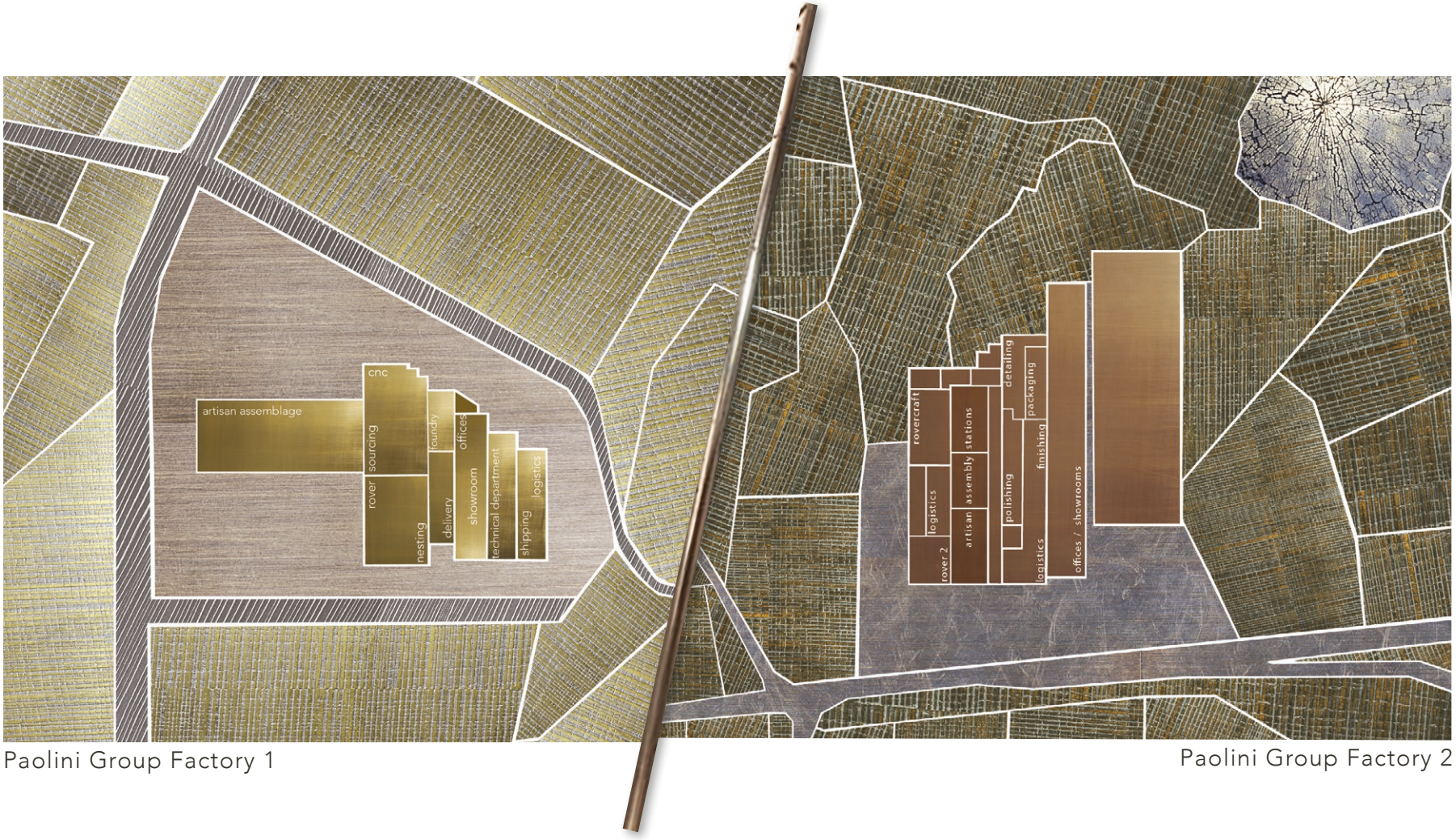


Hardware reinforcements:
Aluminum foam density on request

	Sandwich	Layers		Materials				
NCMP - LW		Facade 1	Thickness	AL 0,3 mm	AL 0,6 mm	AL 0,8 mm	AL 1,5 mm	AL 2 mm
		Core	Density	20 Kg/m3	30 Kg/m3	40 Kg/m3	55 Kg/m3	112 Kg/m3
		Facade 2	Thickness	AL 0,3 mm	AL 0,6 mm	AL 0,8 mm	AL 1,5 mm	AL 2 mm

OUR TEAM

OUR FACTORIES



Paolini Group Factory 1

Paolini Group Factory 2

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