

A close-up, high-contrast photograph of carbon fiber components, likely parts of a vehicle chassis or suspension. The image shows the intricate woven texture of the carbon fiber and the smooth, polished surfaces of the metal or composite parts. The lighting creates strong highlights and shadows, emphasizing the geometric shapes and textures.

EXKORE®

Rethink the core of
carbon-fibre production

BROCHURE

We are EX-CORE®

Ex-Core, originating in the world of high-performance sportscars, emerged from a 2011 research project by Dutch supercar manufacturer Donkervoort and has since become an independent company.

Born out of dissatisfaction with available carbon-fibre options, Ex-Core embodies an obsession with ultra-lightweight yet exceptionally strong materials, designed to be molded into seemingly impossible shapes while remaining cost-effective.

Not only does it minimize waste and energy consumption compared to conventional processes, but it has also secured multiple patents and EU grants. In 2022, Ex-Core became its own entity, and clients spanning motorsport, supercars, aviation, and luxury yachting have embraced the innovative carbon-fibre production method.

INTRODUCTION



EXCORE®

The EX-CORE[®] mission

Having uncovered the Ex-Core production process, we've been committed to organic growth across various industries.

We continuously refine Ex-Core and its production system for specialized applications, remaining dedicated to this path.

INTRODUCTION

Table of contents

We are Ex-Core	2	Technical specifications	18
The Ex-Core mission	3	Your Ex-Core journey	19
Table of contents	4	Success stories - Setting sail with Ex-Core	21
What is Ex-Core?	5	Take action today	22
How does it work?	6	Next steps	23
The five key benefits of Ex-Core	8		
1 One-shot efficiency	9		
2 Cost reductions	11		
3 Simplify complexity	14		
4 Light strength	16		
5 Production flexibility	17		

What is EX-CORE®?



A more environmentally friendly **production process**, not just material.



A **thermally expanding** syntactic foam core in combination with a **heated, enclosed** tooling system.



Developed in combination with carbon-fibre **prepreg** technology.

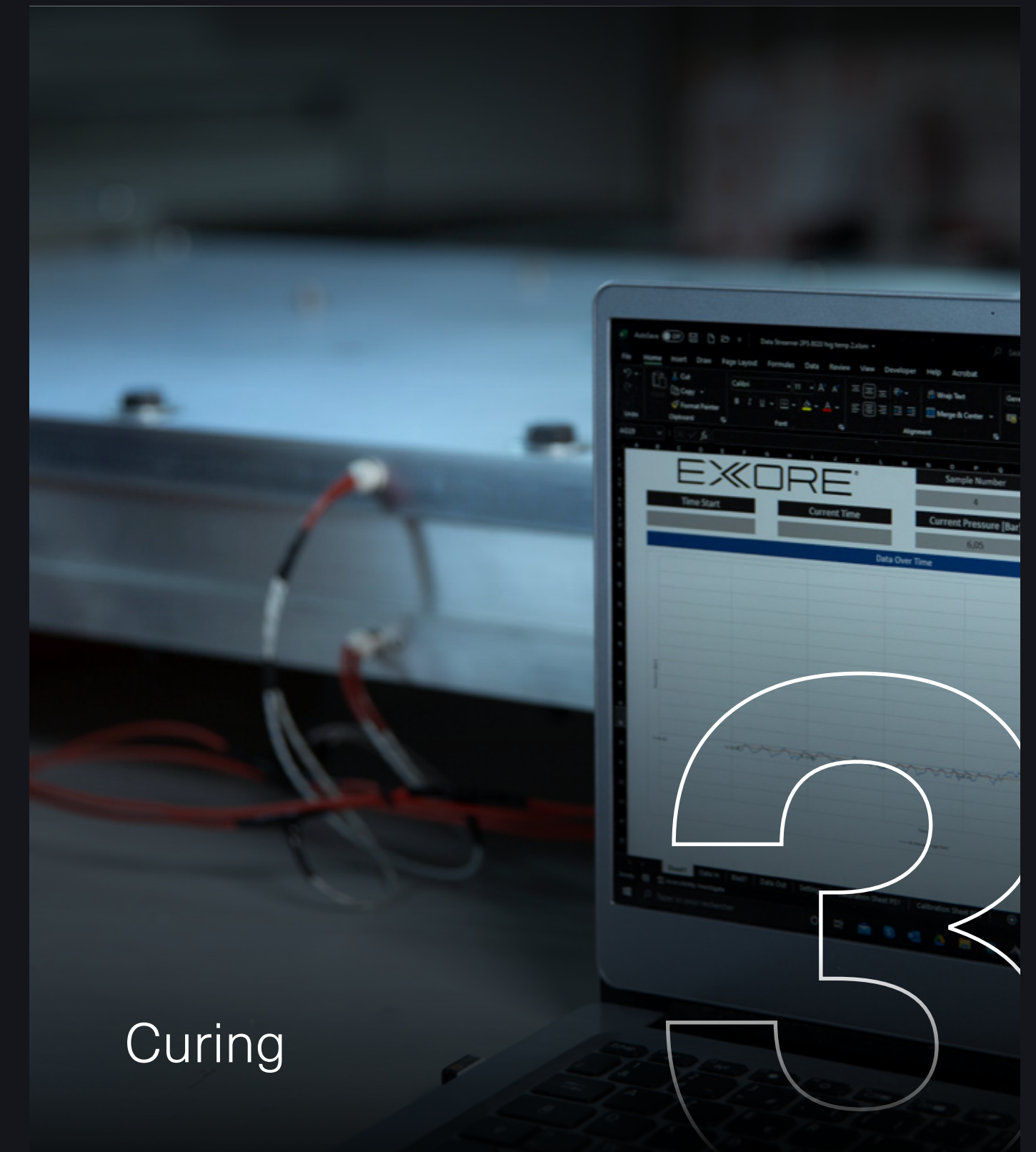


Foam cores produce pressure from the **inside out** during the curing stage, forming and strengthening the composite parts.

ABOUT EX-CORE®

EXCORE®

How does it work?



ABOUT EX-CORE®

How does it work?



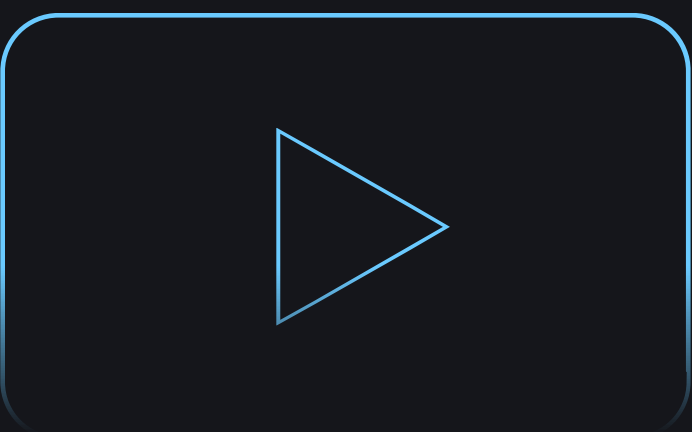
Watch now

Explainer video

Watch the Ex-Core explainer video.

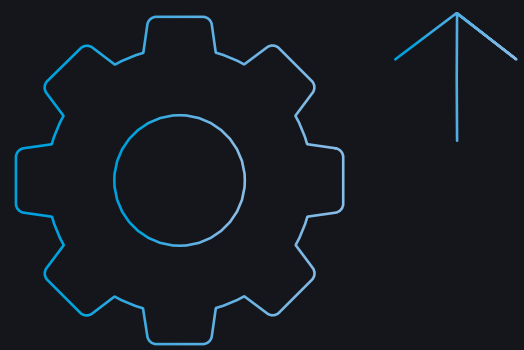


[Watch now](#)



ABOUT EX-CORE®

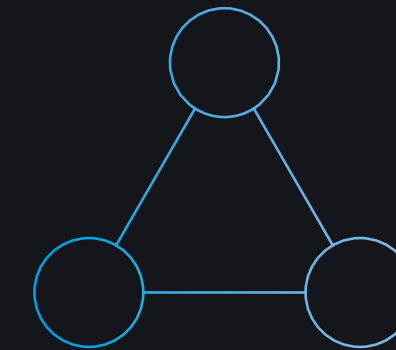
The five key benefits of EX-CORE®



1. One-shot efficiency



2. Cost reductions



3. Simplify complexity



4. Light strength



5. Production flexibility

ABOUT EX-CORE®

EXCORE®

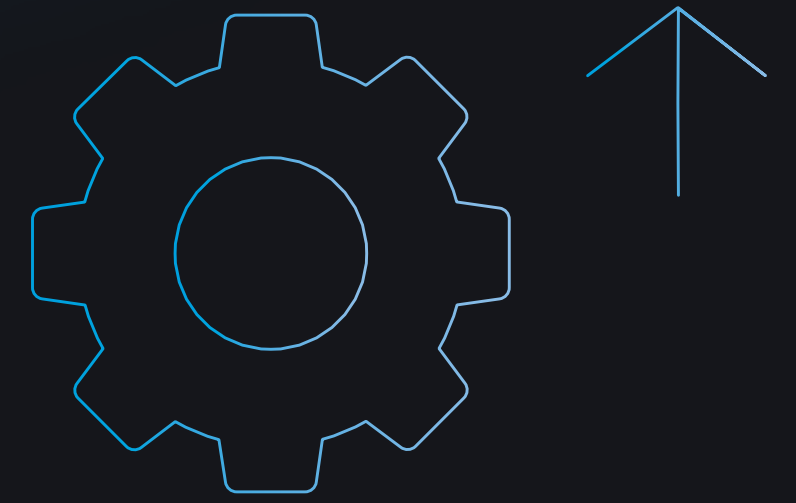
One-shot efficiency

1

A key reason why the Ex-Core CFRP system stands apart is by using a ground-breaking, one-shot production method.

This unique manufacturing process not only reduces production time, enabling Ex-Core clients to achieve faster and more efficient production of components but also eliminates the need for debulking, further reducing costly time and resources.

Additionally, it significantly increases production accuracy, leading to less wastage and a greater percentage of approved parts.



THE FIVE KEY BENEFITS

EXCORE®

One-shot efficiency

1

More sustainable



Low waste

Thanks to the enclosed mould there is no longer a need for consumables such as vacuum bags, breather cloth, peel ply, etc.



Saving energy consumption

Energy is saved thanks to the integrated heating inside the tooling surfaces.



Bio-compatible

Compatible with bio-resin as well as bio and natural fibres.

THE FIVE KEY BENEFITS

EXKORE®

Cost reductions

2

The Ex-Core production process slashes costs - and not just to its clients.

The same key Ex-Core advantages that deliver lower production costs also deliver lower environmental costs, making Ex-Core sustainable both financially and environmentally.

Ex-Core minimises waste by eradicating consumables like vacuum bags, breather cloth and peel ply, and by slashing material trimming rates.

It also uses far less energy in heating, and the Ex-Core only uses sustainable energy in its production process, ultimately lowering the carbon footprint of Ex-Core clients.



Cost reductions

2



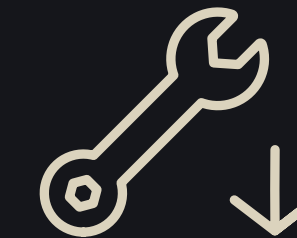
Reduced investment

Ex-Core technology does not require heavy and costly equipment like hot presses or autoclaves.



Faster process

The direct heating allows for a very efficient cure cycle.



Reduced assembly

One-shot production process eliminates any adhesive layer of bonding step and reduces costs of labor, consumables and materials.

THE FIVE KEY BENEFITS

EXCORE®

Cost reductions



Case study

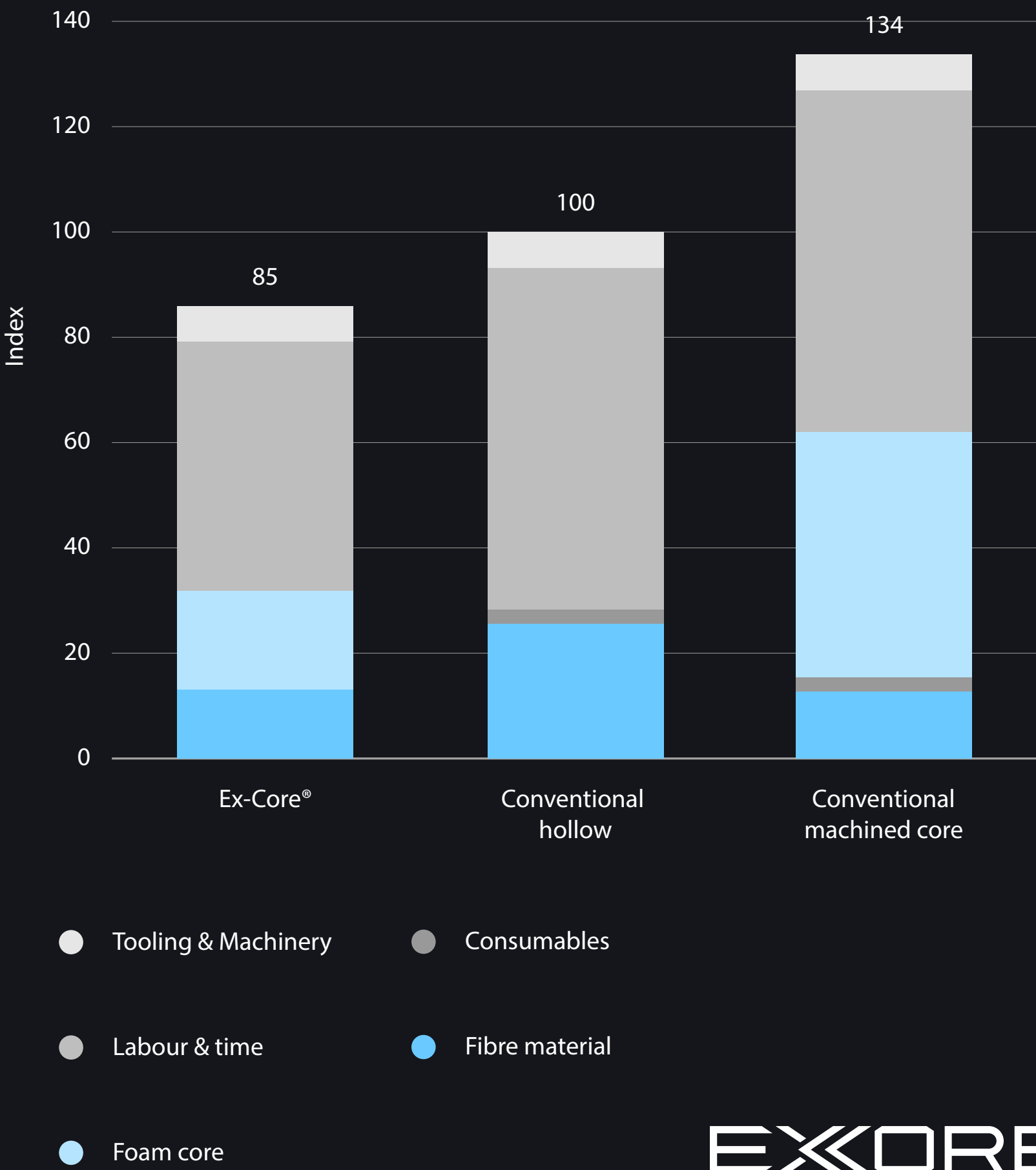
Rear wing fabrication cost comparison

To illustrate our concept's validity, this graph offers a valuable cost comparison for fabricating rear wings in the automotive industry, examining three distinct methods.

Our analysis draws from the production of 1000 units over a five-year lifecycle, with an annual output of 200 units.

- Ex-Core
- Conventional hollow (with autoclave)
- Conventional machined core (pre-formed and with autoclave)

THE FIVE KEY BENEFITS



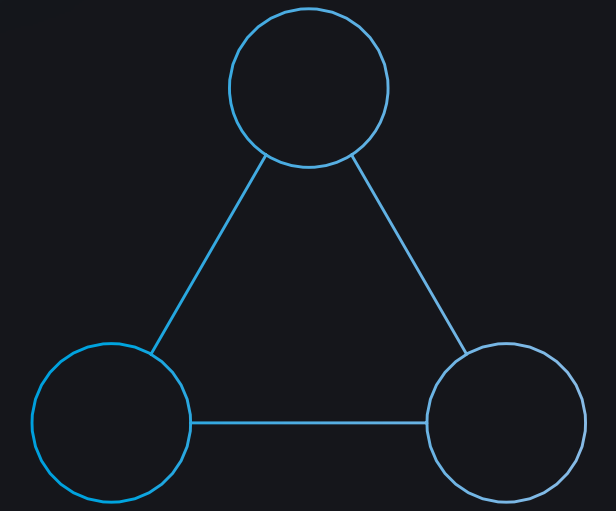
Simplify complexity



The inside-out nature of the Ex-Core system gives it the capability to create an enormous range of shapes with repeatable precision.

It can cope with sharp radii, intricate or irregular forms and even complex organic shapes, with no loss of strength and no lowering of production tolerances.

It can create all of these diverse shapes in a single manufacturing cycle, rather than layering them in a series of cycles.



Simplify complexity

3

Complete freedom in design

New design possibilities

Zero-radius corners, function integration, inserts, etc.

Minimum
section
thickness
2 mm

Maximum
section
thickness
~100mm

THE FIVE KEY BENEFITS

EXKORE®

Light strength



Once it has completed its initial expansion to push the carbon-fibre sheets against the surface of the mould, the Ex-Core syntactic foam then switches to its secondary role - adding stiffness.

This is how Ex-Core components can achieve higher bending and torsional rigidity than conventional components without adding weight.

Both stiffness and weight characteristics can be tailored for each component.



Production flexibility

5

The Ex-Core system can accommodate a wide range of production numbers, and even in-batch production flexibility, from small batch runs to high-volumes.

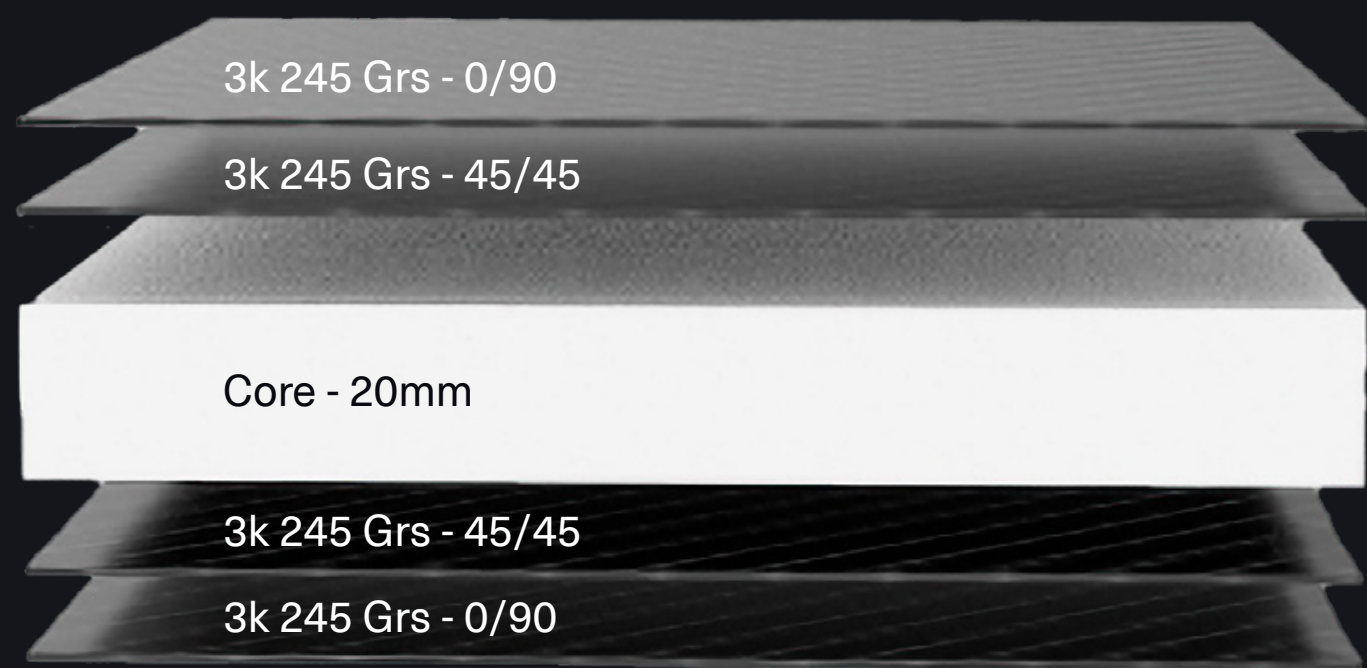
Ex-Core has been conceived to deliver widely different production volumes with no diminution of quality standards or efficiency.

This level of adaptability allows Ex-Core to cater to an enormous variety of production demands and scheduling, making it a versatile manufacturing asset.

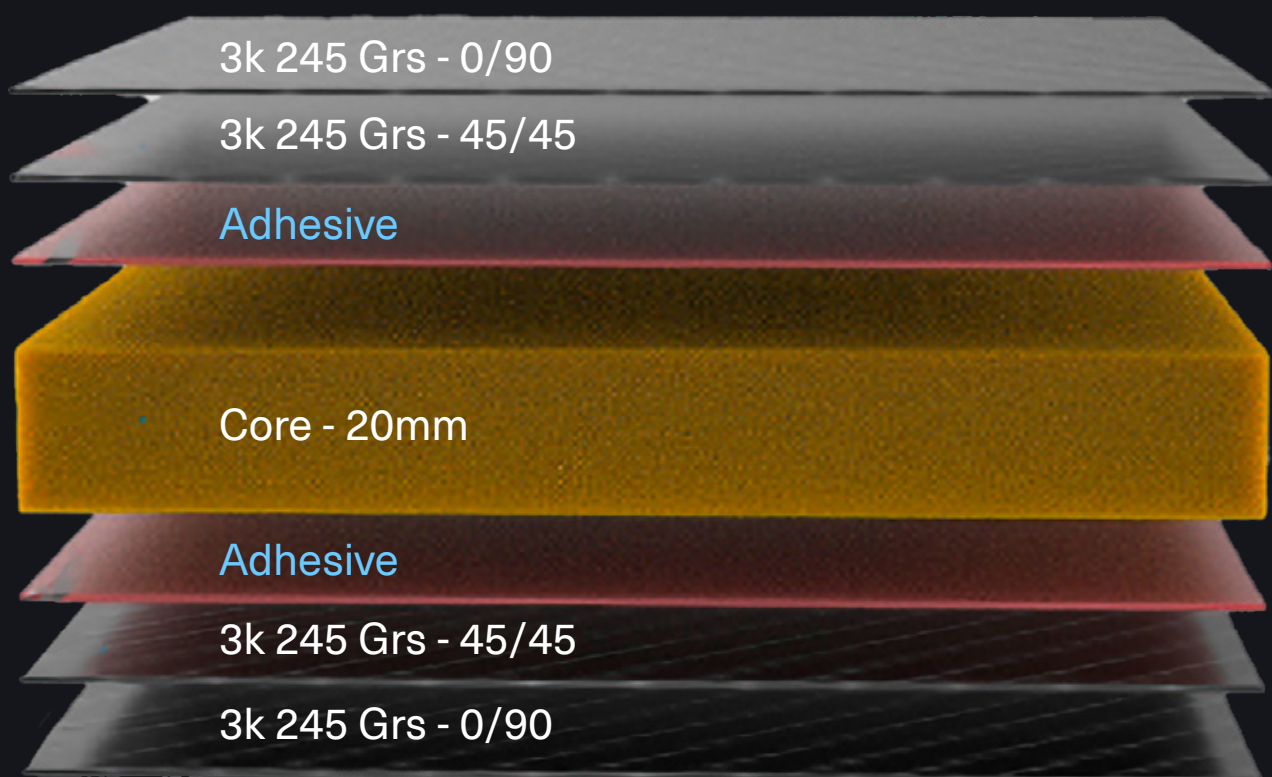


Technical specifications

Ex-Core



Conventional core



Uncured Ex-Core has
clay-like viscosity

MECHANICAL PROPERTIES

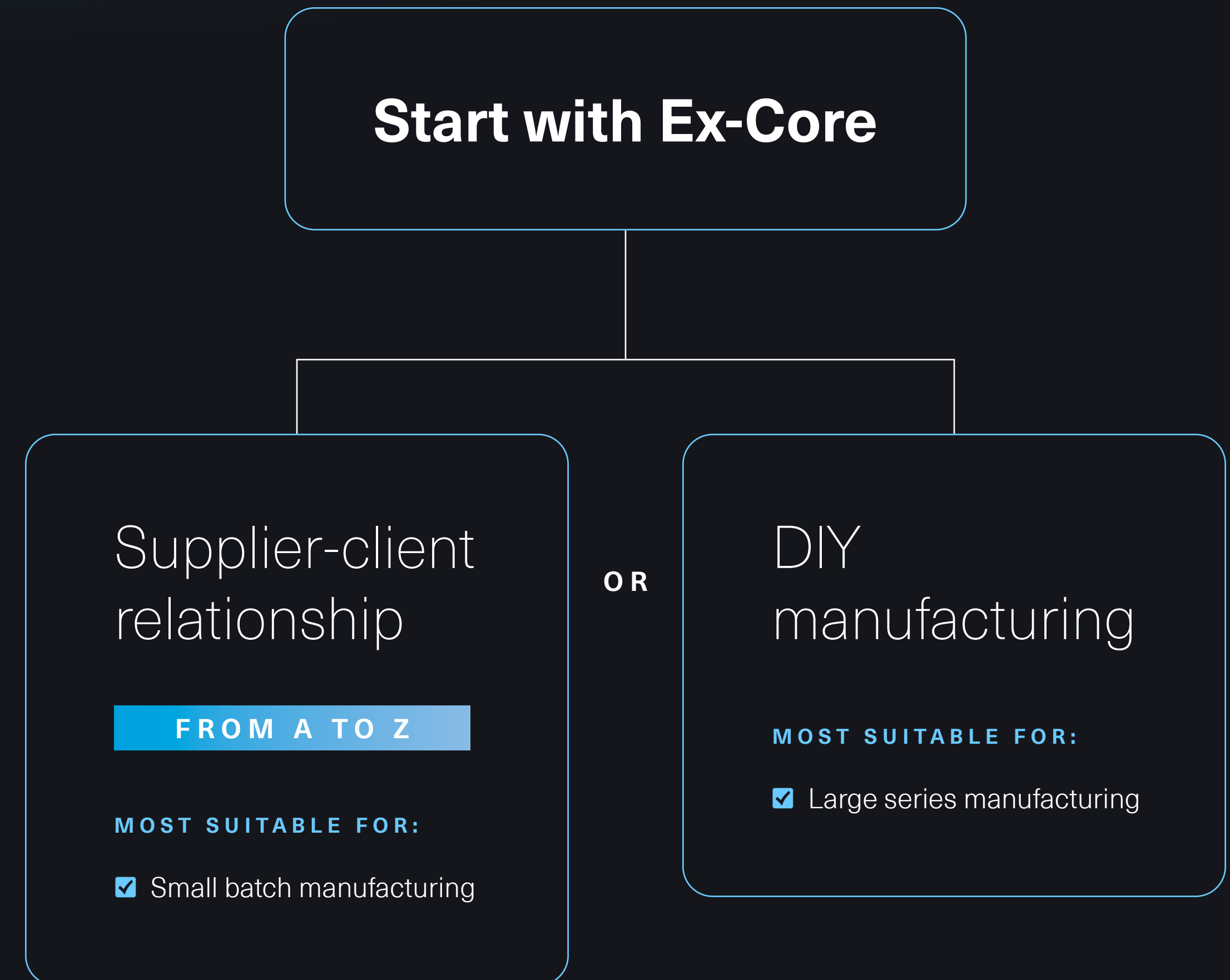


Your EX-CORE[®] journey

Ex-Core can adapt to your production processes, and the Ex-Core business model can also adapt to your needs, too.

Ex-Core offers two distinct options for its customers, and both are customisable to meet specific needs and preferences.

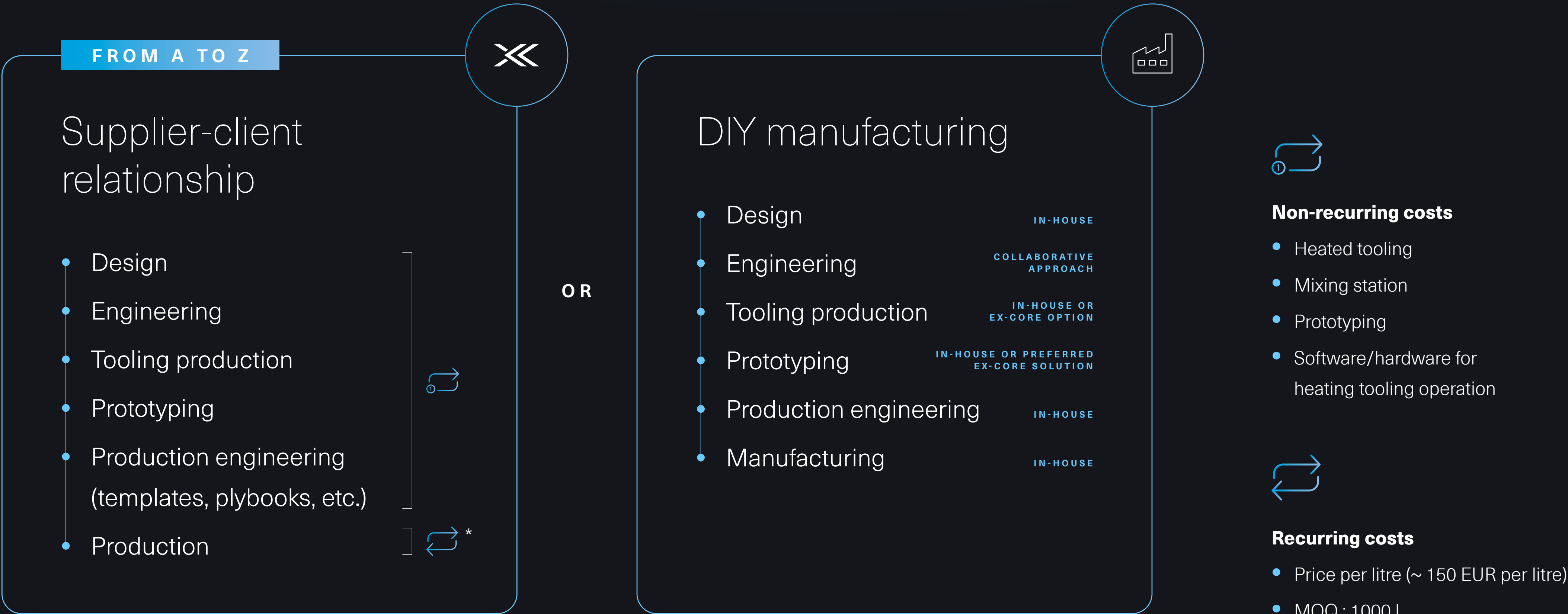
The two main Ex-Core options are a seamless, **supplier-client relationship** or the delivery of Ex-Core materials for clients who prefer to **create** their **own Ex-Core components**.



PROPOSITION

EXCORE[®]

Your EX-CORE® journey



* pricing per produced unit

PROPOSITION

EXCORE®

Setting sail with EX-CORE®

"Our design and engineering teams were in frequent conflict because their ambitions could rarely be accommodated in the same components. Ex-Core changed that for us when we became the first to use Ex-Core, and the Wajer 44's all-new windscreen design could not have been achieved without it."

Dries Wajer, CEO Wajer Yachts

WAJER

SUCCESS STORIES

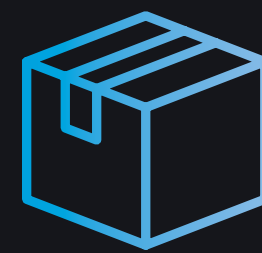
EXCORE®

Take action today



Connect with our experts

Reach out to our **team of specialists** who are eager to collaborate, answer your questions, and explore how Ex-Core can elevate your projects.



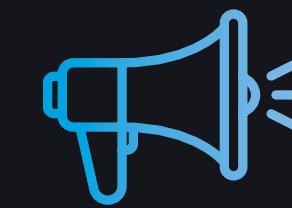
Request a sample

Experience the exceptional qualities of Ex-Core materials firsthand by requesting a sample tailored to your specific needs.



Schedule a consultation

Let's **discuss** your unique requirements and challenges. Our experts are here to provide customized solutions that drive your success.



Stay informed

Subscribe to our **newsletter** and stay updated on the latest advancements in composite materials, industry insights, and exclusive Ex-Core news.

[Subscribe here](#)

GET IN TOUCH

EXCORE®

Next steps

At Ex-Core Technologies, we do more than just shape the future of materials; we empower your path towards innovation and excellence.

Our commitment to cutting-edge composite solutions and unwavering dedication make us the ideal partner for your transformative projects. We're not just a supplier; we're your dedicated partner in success.

Join us in creating a boundless future of innovation. Reach out today to unlock Ex-Core's potential, your journey starts here.

Visit our website

excoretechnologies.com

Call us

+31 (0) 320 26 70 50

Email

enquiries@excoretechnologies.com

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On [LinkedIn](#)

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Rethink the core of carbon-fibre production

Pascallaan 96, NL-8218 NJ Lelystad
The Netherlands

enquiries@excoretechnologies.com
+31 (0) 320 26 70 50

www.excoretechnologies.com

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