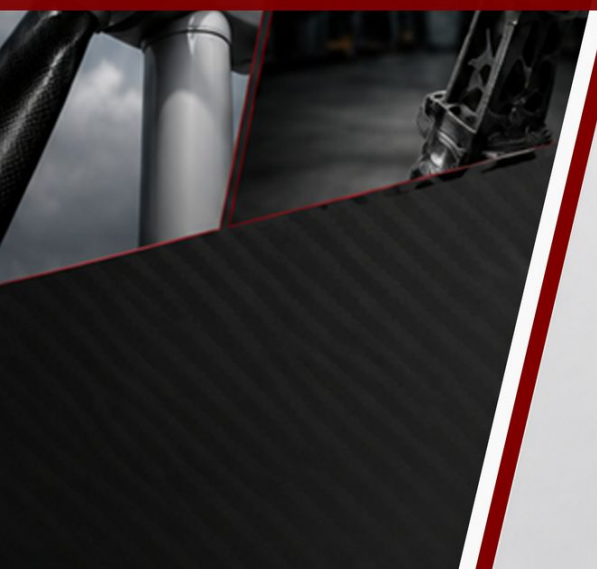


SOLOMON
KOMPOZİT

SOLOMON COMPOSITE®

ADVANCED COMPOSITES ENGINEERING

- 3D Modeling and Reverse Engineering
- Prepreg Carbon Fiber Product Manufacturing
- Prototype and Final Product Design
- Composite Mold Manufacturing



For us, carbon fiber is more than just a material choice. It is a comprehensive engineering discipline in which performance, lightweight design, strength, manufacturability, and lifecycle objectives are considered and optimized together.

WHO ARE WE?

Solomon Composite® operates in the field of advanced composite engineering and manufacturing. Our focus is on prepreg carbon fiber component production, reverse engineering, 3D modeling, mold development, and project-specific composite solutions.



Solomon Composite was founded on the competitive engineering mindset, hands-on manufacturing experience, and technical expertise in carbon fiber developed by our mechanical engineer founders through their involvement in the Formula Student teams of Istanbul Technical University and Yildiz Technical University.



Today, we bring this engineering expertise to our customers through an end-to-end project approach—from concept development and technical evaluation to CAD design, mold and prototype manufacturing, controlled production, and quality monitoring.

At Solomon Composite®, our goal is not simply to manufacture carbon fiber components, but to develop lightweight, durable, aesthetically refined, and high-engineering-value solutions for automotive, motorsport, marine, defense, aerospace, and industrial applications.

OUR BRANDING STRUCTURE

SOLOMON COMPOSITE®

Core Engineering & Manufacturing Brand

Manages reverse engineering, CAD modeling, mold development, prototyping, prepreg manufacturing, quality control, and project management through an end-to-end approach.

SOLOMON MARINE®

Marine Solutions

Develops lightweight, durable, corrosion-resistant, and aesthetically refined carbon fiber components and accessories for

CS CARBON®

Automotive & Lifestyle Products

Develops high-quality carbon fiber components for automotive, motorsport, and lifestyle applications.

ENGINEERING INFRASTRUCTURE

One integrated engineering, manufacturing, and quality infrastructure; industry-specific solutions.

WHY SOLOMON COMPOSITE?

Engineering and Manufacturing in One Integrated Workflow

We manage reverse engineering, CAD modeling, mold development, prototyping, prepreg manufacturing, and quality control within a single, integrated project workflow.

Product-Specific Engineering

We do not simply replicate an existing component; we engineer it around its intended use, installation requirements, target weight, strength expectations, and production volume.

Controlled Prepreg Manufacturing

We carefully control critical production parameters—from material storage conditions and layup to vacuum bagging, curing, and final inspection.

Flexibility from Prototype to Production

We develop flexible, project-specific solutions for one-off custom parts, prototypes, validation samples, low-volume production, and the transition to serial production.

Performance and Aesthetic Integration

We balance lightweight construction, strength, functionality, fitment, and surface quality within a single product.

Transparent and Traceable Project Management

We manage project scope, technical acceptance criteria, responsibilities, and changes through clear communication from project initiation to final delivery.

WHAT IS CARBON FIBER?

Dry woven carbon fiber fabric, not impregnated with resin.



Dry woven structure
The fibers are woven dry, in a defined weave pattern.

Resin-free
There is no resin between the fibers.

Lightweight and high-strength
Used as a reinforcement material in composite structures.

Carbon fiber is an advanced reinforcement material that offers high strength and stiffness despite its low density. Carbon fiber fabric is produced by arranging carbon filaments in a defined weave pattern.

At this stage, the fabric does not yet contain resin and is not, by itself, a finished composite component. By combining the carbon fibers with a suitable resin system under controlled conditions, followed by layup and curing, lightweight, durable, and high-performance carbon fiber composite structures can be produced.

CROSS-SECTION VIEW



The fibers pass over each other in a dry state.
Contains no resin.

WHAT IS PREPREG?

The final performance of a carbon fiber component depends on more than just the type of carbon fiber fabric used. The resin system, layup sequence, fiber orientations, vacuum quality, and curing parameters collectively determine the component's strength, stiffness, weight, and service life.

Prepreg is a carbon fiber reinforcement material that has been pre-impregnated by the manufacturer under controlled conditions with a precisely defined resin content. Ready-to-use prepreg layers are cured under specified temperature, time, vacuum, and, when required, pressure conditions to produce lightweight, high-strength composite structures with consistent and repeatable properties.

Carbon fiber reinforcement material pre-impregnated with resin, ready to use.



Pre-impregnated with resin
Impregnated homogeneously with resin from the start of production.

Controlled resin ratio
The resin content is precisely controlled.

Cures into its final structure
Cures under heat and pressure into a composite part.

CROSS-SECTION VIEW



The fibers are homogeneously wetted with resin.
Ready to use.

BENEFITS OF PREPREG TECHNOLOGY

CONTROLLED FIBER-TO-RESIN RATIO

Controlled resin application helps reduce unnecessary resin weight and achieve a more balanced composite structure.

PRECISE LAYUP CONTROL

The number of layers, fiber orientation, and stacking sequence can be tailored to the component's specific operating conditions.

REPEATABLE MANUFACTURING

Controlled material and curing conditions help ensure more consistent results across multiple parts.

LOW VOID CONTENT TARGET

Proper layup, vacuum bagging, and curing processes help minimize air voids within the composite structure.

HIGH SPECIFIC PERFORMANCE

Enables high strength and stiffness to be achieved at a low weight.

SURFACE QUALITY AND TRACEABILITY

A controlled process enables more consistent surface quality while allowing material and production parameters to be recorded and tracked.

Carbon Fiber Manufacturing Methods and Their Advantages

Manufacturing Method	Low Cost	Lightweight	High Strength	Fiber–Resin Homogeneity	Good Surface Quality	Complex Shape Manufacturing	Low Void Content	Weave Appearance
Prepreg Method	—	✓	✓	✓	✓	✓	✓	✓
Wet Layup	✓	△	△	—	△	△	—	✓
Vacuum-Bagged Wet Layup	△	△	△	△	✓	△	△	✓
Vacuum Infusion	△	✓	✓	✓	✓	△	✓	✓
Resin Transfer Molding	—	✓	✓	✓	✓	✓	✓	✓
Pultrusion	△	✓	✓	✓	△	—	✓	△
Filament Winding	—	✓	✓	✓	△	—	✓	△
Carbon Fiber Skinning	✓	—	—	—	△	△	—	✓

✓ *This advantage is strongly present*

△ *Partially present / depends on conditions*

— *Not a main advantage of this method*

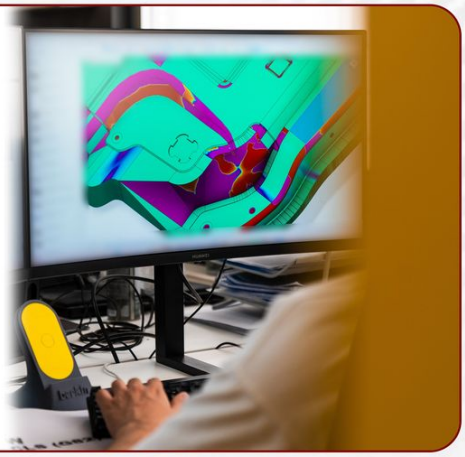
PROJECT DEFINITION AND DEVELOPMENT

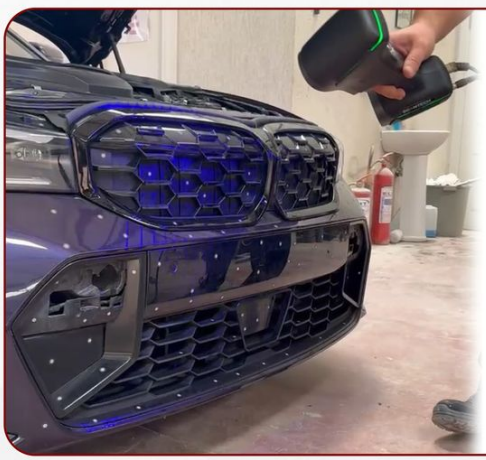
1 2 3 4

From requirements analysis to digital geometry, we define the technical and manufacturing approach.

Project Evaluation, Part Size, Production Volume

Part size, intended use, production volume, surface requirements, tolerances, tooling needs, and lead time are evaluated together.



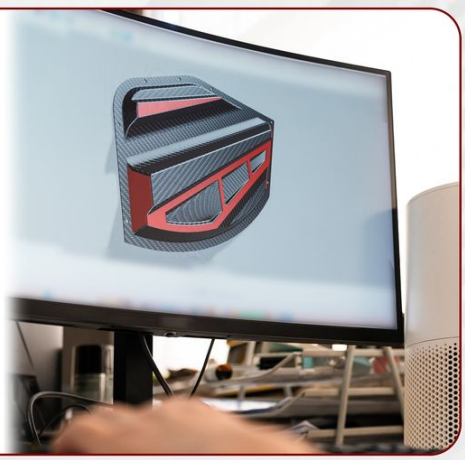


3D Scanning and Digital Geometry

The existing part or surface is scanned and converted into digital reference geometry.

CAD Development and Manufacturability

Product geometry is developed and optimized for function, fitment, mold design, and manufacturing.



MOLD, MATERIAL & PRODUCTION PLANNING

1 2 3 4

The right mold strategy, material selection, and controlled production planning.



Mold / Prototype Solution

Depending on prototype or production requirements, suitable composite or aluminum tooling is developed, tested, and validated based on part geometry, surface requirements, and curing conditions.

Material Selection

Prepreg carbon fiber is selected according to project requirements, and incoming materials undergo acceptance inspection.





Cold Chain, Cutting and Layup Planning

Material is stored at -18 °C; shelf life, storage conditions, layup sequence, fiber orientation, and local reinforcements are planned accordingly.

PRODUCTION, CURING AND FINISHING

1 2 3 4

Controlled manufacturing steps, process monitoring, and surface / assembly operations.

Layup, Vacuum Bagging and Sealing

Layers are laid according to the defined fiber orientations and sequence; the vacuum bagging system is prepared and checked for leaks.





Curing and Process Monitoring

Components are cured in 0.36 m^3, 1 m^3, and 10 m^3 curing ovens, where material-specific temperature, time, and vacuum parameters are computer-controlled and critical process data is recorded.

Finishing, Surface Treatment and Assembly

Trimming, drilling, edge finishing, surface preparation, painting, clear coating, and required assembly operations are carried out.



QUALITY CONTROL AND TRACEABILITY

1 2 3 4

Dimensional verification, process records, and a reliable delivery approach.



Dimensional Verification and Documentation

Dimensional inspection, fitment checks, and functional validation are performed according to project requirements.

Process Records and Traceability

Material batch information, shelf life, production data, and critical process parameters are recorded for full traceability.





Continuous Improvement and Reliable Delivery

Repeatable quality is supported through feedback, performance analysis, and process improvements; products are prepared for shipment with appropriate packaging.

OUR QUALITY MANAGEMENT SYSTEMS

At Solomon Composite, we support our commitment to quality, traceability, and continuous improvement through certified management systems. From material selection and process control to production records and final product validation, all processes are managed in line with customer requirements, technical criteria, and defined quality standards.



Our certifications reflect our systematic approach to engineering, manufacturing, and service processes, our commitment to established standards, and our goal of maintaining sustainable quality.

ISO 9001:2015
The Quality Management System
Certificate Number: **QMS-016938**

ISO 14001:2015
The Environmental Management System
Certificate Number: **EMS-016938**

ISO 45001:2018
The Occupational Health and Safety Management System
Certificate Number: **OHSMS-005284**

OUR INDUSTRY SOLUTIONS

SECTORAL APPLICATIONS

High performance, lightness and sustainable solutions with carbon fiber.

Automotive & Motorsports

Lightweight structure, high performance and reliability.

Marine

Corrosion-resistant, long-lasting and lightweight solutions.

Premium & Lifestyle Products

Aesthetics, quality and distinctive design value.

Industrial & Automation

Efficiency, repeatability and reliability in harsh conditions.

Aerospace & Defense

Low weight, high strength and critical safety.

Energy, Sports & Medical

High performance, durability and human-centric solutions.

VALUE DOMAINS	Automotive and Motorsports	Marine	Premium and Lifestyle Products	Industry and Automation	Aerospace and Defense	Energy, Sport, and Medical
Low Weight	✓	✓	✓	✓	✓	✓
Stiffness	✓	✓	✓	✓	✓	✓
Durability	✓	✓	✓	–	✓	✓
Corrosion Resistance	✓	✓	✓	✓	✓	✓
Design Freedom	✓	✓	✓	✓	✓	–
Premium Perception	✓	✓	✓	–	✓	✓
Quality and Traceability	✓	✓	✓	✓	✓	–

UNIVERSAL BENEFITS OF CARBON FIBER

LIGHTNESS
Less weight, higher efficiency.

HIGH PERFORMANCE
Excellent strength and stiffness.

DURABILITY
Resistance to corrosion, chemicals, and fatigue.

DESIGN FREEDOM
Optimum solutions in complex geometries.

SUSTAINABILITY
Long life, low maintenance, and lower resource use.

SOLOMON KOMPOZİT®
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