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Lightweight
Competence
Center

INTRODUCTION

The **Lightweight Competence Center** aims to be a reference in the development of multimaterial manufacturing technologies for the automotive industry.

The Center includes three distinctive areas to tackle lightweight strategic projects:

- **Composite:** Sheet Molding Compound (SMC).
- **Aluminum:** Low Pressure Die Casting (LPDC).
- **Steel:** High Strength Steel (HSS) Cold or Hot Stamped.



COMPOSITE

Carbon and glass fiber reinforced polymers are used in semi-structural and structural parts to provide high performance and reduced weight.

SMC parts offer substantial weight reduction, good mechanical properties, superior corrosion resistance, design flexibility by accommodating shape complexity and reduced manufacturing complexity through part integration.



ALUMINUM

Aluminum is used in powertrain, suspension and structural parts for safer and lighter vehicles.

LPDC parts offer very good strength values, complex geometries, high dimensional accuracy and higher material utilization.

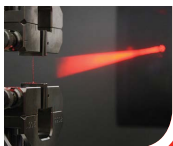


HIGH STRENGTH STEEL

Stamped Steels are highly used in body in white and chassis parts.

HSS cold and hot stamped parts offer lighter and safer properties than conventional stamped steels.

DOMAIN AREAS



Material characterization

Advanced materials and product characterization.



Product design & analysis

New and advanced materials-focused design and analysis.



Tooling

Tooling and other elements: dies, cooling-heating systems, etc.



Manufacturing

Short series and prototype manufacturing and post-processing.



Joining technologies

Lightweight and advanced multimaterial joining technologies.



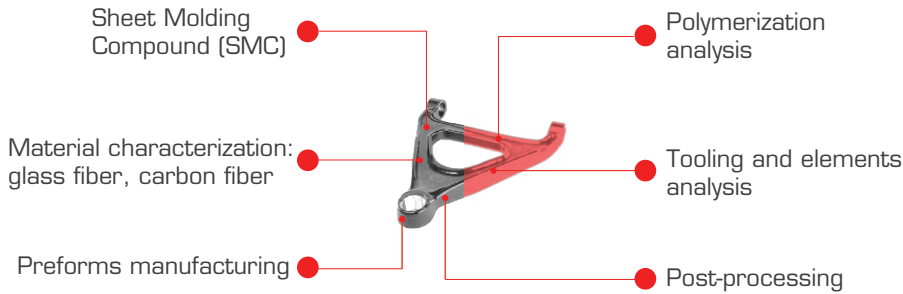
Added value services

Competitive Intelligence and specialized training.

COMPOSITE

The Composite Area includes a reinforced polymer characterization system, a preform cutting table, a Sheet Molding Compound cell and a post-processing center.

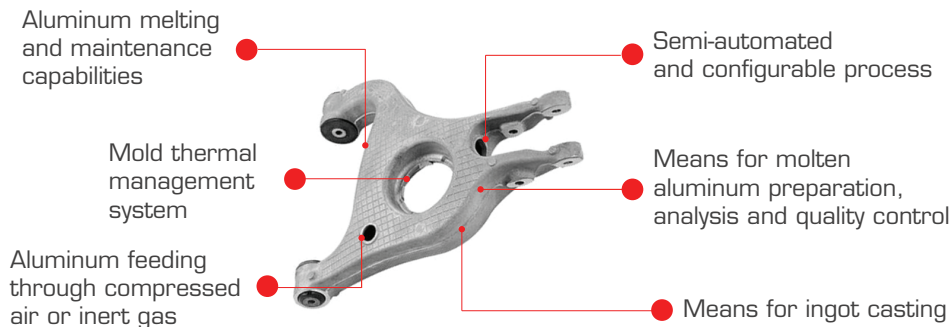
TECHNOLOGICAL CAPABILITIES



ALUMINUM

The Aluminum Area consists of a two-in-one melting and maintenance furnace, a hydraulic press, a component extraction system and a cooling tank.

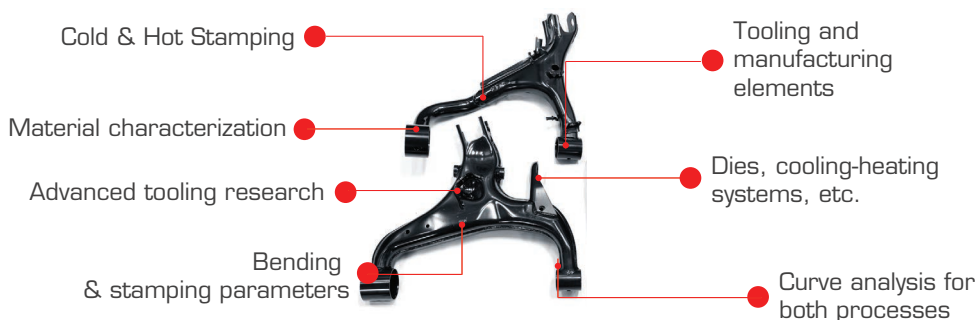
TECHNOLOGICAL CAPABILITIES



HIGH STRENGTH STEEL

The HSS Area includes a servo-actuated press allowing to program the position, speed and travel curves of the press to carry out different manufacturing processes, such as, special-blanking and multispeed manufacturing.

TECHNOLOGICAL CAPABILITIES



AIC-AUTOMOTIVE INTELLIGENCE CENTER

AIC is a European center generating value for the automotive industry. It is based on the concept of open innovation where companies improve competitiveness through cooperation. Clearly market-oriented, it integrates knowledge, training, technology and industrial development under one umbrella.

To encourage and consolidate cooperation, members locate their innovation, training, R&D and industrial development units at the AIC facilities, where they work in an independent but coordinated way to come up with projects of common interest in a broad range of areas.

LIGHTWEIGHT CENTER

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