

# AUTOMOTIVE SOLUTIONS

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 **YEŞİLOVA**

[yesilova.com](http://yesilova.com)





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## About us 03

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## Sectors 05

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- Passenger Cars
- Light Commercial Vehicles
- Buses & Caravans
- Heavy Commercial Vehicles

## Technology & Innovations 06

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- Aluminium Extrusion
- Aluminium Injections
- Machining
- Joining Technologies
- Coating / Surface Treatment
- Installation
- Test Center

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- Product Development
  - Project Management
  - Quality Management

## Sustainability 08

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# ABOUT US

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We offer lightening solutions from aluminium with the production of commercial and passenger vehicle parts in the automotive sector.

At this point, we are working to increase the usage areas of aluminium in the automotive sector with our sustainability approach in Automotive Solutions, which Yeşilova offers with its knowledge and innovative perspective in the transportation sector. While always aiming to move the boundaries of reliability, quality, sustainability and innovation further, we realize our productions specifically for the needs and expectations of our customers.

We process aluminium in our facilities from the design stage to the final product, and we reflect our knowledge and engineering capabilities to every product we produce.

While signing both visual and structural parts in the automotive industry, we offer lightweight solutions made of aluminium for electric vehicles, in addition to these products, we produce for a wide variety of needs, including vehicle frames, roof boxes, trunk and ventilation covers, shock absorbers, sunroofs.

# SECTORS

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- Passenger Cars
- Light Commercial Vehicles
- Buses & Caravans
- Heavy Commercial Vehicles

# PASSENGER CARS

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## — Battery Solutions

- > Battery Carrier
- > Battery Components
- > Battery Thermal Management

## — Body & Chassis

- > Torpedo Crossmember
- > Differential Carrier
- > Electric Motor Carrier
- > Compressor and Charger Carrier

## — Crash Management Systems

- > Crash Management Absorber
- > Bumper Beam

## — Visual Parts

- > Roof Rail
- > Crossbar
- > Side Skirt





# LIGHT COMMERCIAL VEHICLES

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## — Battery Solutions

- > Battery Carrier
- > Battery Components
- > Battery Thermal Management

## — Body & Chassis

- > Torpedo Crossmember
- > Differential Carrier
- > Electric Motor Carrier
- > Compressor and Charger Carrier
- > Cradle

## — Crash Management Systems

- > Crash Management Absorber
- > Bumper Beam

## — Visual Parts

- > Roof Rail
- > Crossbar
- > Side Skirt

## — Special Solutions

- > Shelf Systems
- > Bicycle Carrier
- > Luggage Stabilization Systems





# BUSES & CARAVANS

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## — Functional Parts

- > Vertical Electric Driver Window
- > Horizontal Electric Driver Window
- > Emergency Exit
- > Sunroof
- > Manuel Sliding Window

## — Battery Solutions

- > Battery Carrier
- > Battery Components
- > Battery Thermal Management

## — Special Solutions

- > Manuel Ramp
- > Shelf Systems
- > Bicycle Carrier





# HEAVY COMMERCIAL VEHICLES

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## — Crash Management Systems

- > Front Under Protection
- > Rear Under Protection
- > Side Protection

## — Functional Parts

- > Sunroof
- > Emergency Exit





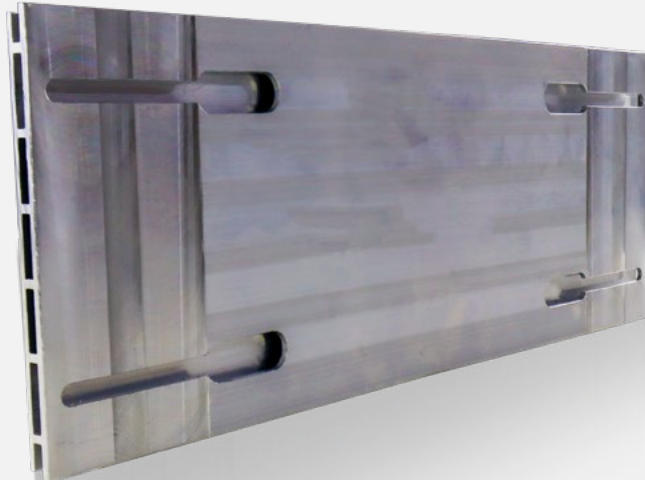


# Battery Carrier

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<b>Aluminum Alloy</b>	: 6005A - 6080 - 6063
<b>Heat Treatment</b>	: T6 - T61
<b>Coating</b>	: s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Bending, Welding, Assembly
<b>Competencies</b>	: Manufacturing, Tolerancing, Machining, Weld Penetration, GMAW, CMT, FSW





# Battery Components

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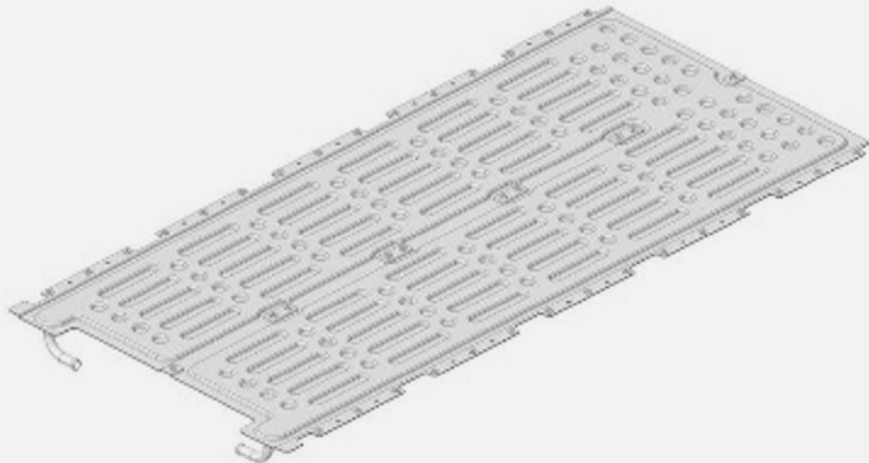
**Aluminum Alloy** : 6060

**Heat Treatment** : T6

**Technology** : Extrusion, Welding, Assembly, Washing

**Competencies** : Manufacturing, Tolerancing, Machining





# Batarya Thermal Management

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<b>Aluminum Alloy</b>	: 3xxx - 5xxx - 6xxx
<b>Heat Treatment</b>	: T6
<b>Technology</b>	: Mechanical Treatment, Friction Stir Welding, Sealing
<b>Competencies</b>	: Manufacturing, Tolerancing, Machining, FSW

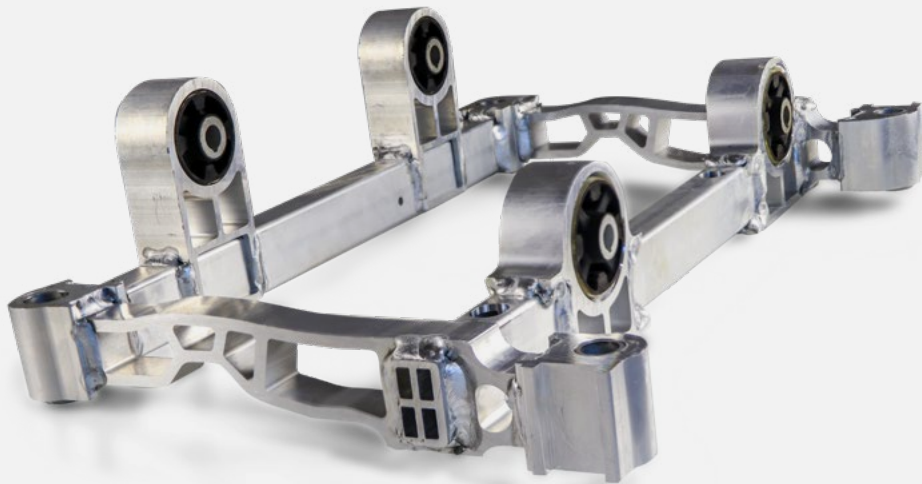




# Cross Car Beam

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<b>Aluminum Alloy</b>	: 6xxx
<b>Heat Treatment</b>	: T6 - T66
<b>Coating</b>	: e-coat, s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Casting, Bending, Welding, Assembly
<b>Competencies</b>	: Product Development, Machining, Stretch Bending, GMAW, CMT

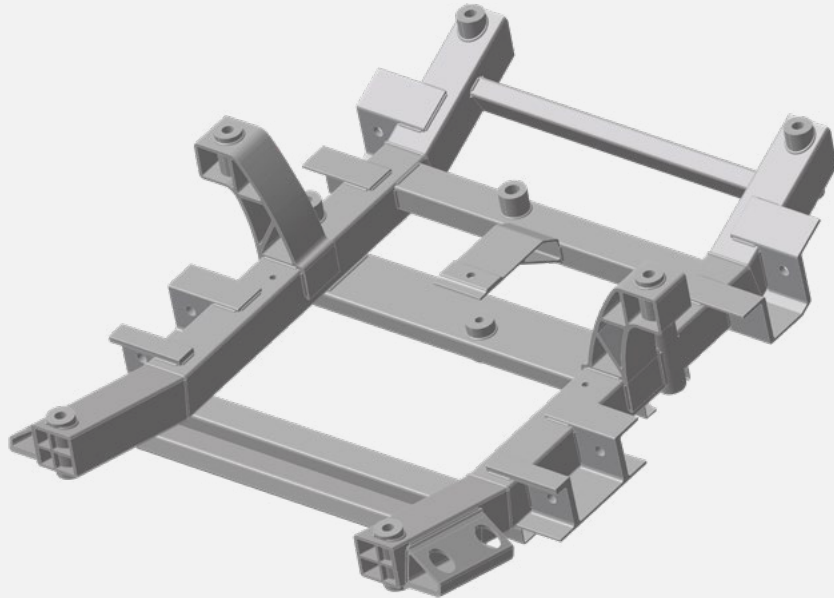


# Differential Carrier

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<b>Aluminum Alloy</b>	: 6063 - 6082
<b>Heat Treatment</b>	: T6
<b>Coating</b>	: s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Welding, Force Control Bushing Assembly
<b>Competencies</b>	: Product Development, Machining, GMAW, CMT

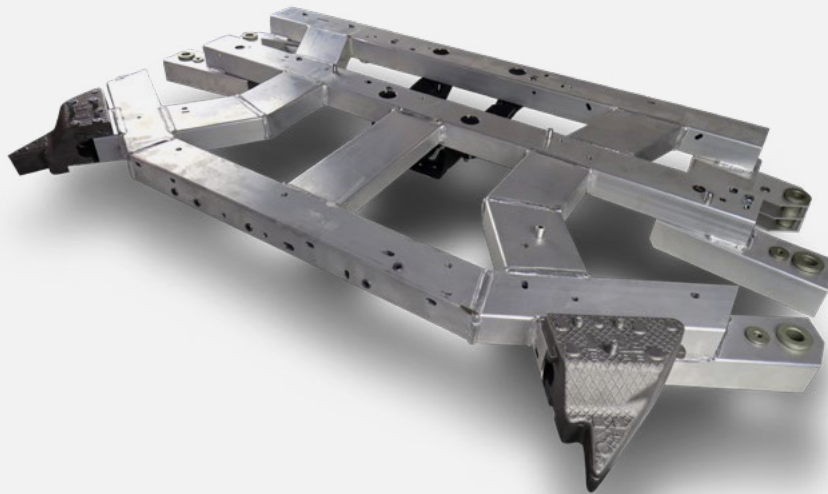




# Electric Motor Carrier

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<b>Aluminum Alloy</b>	: 6063 - 6082
<b>Heat Treatment</b>	: T6
<b>Coating</b>	: s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Welding, Force Control Bushing Assembly, Twisting
<b>Competencies</b>	: Product Development, Machining, Stretch Bending, GMAW, CMT

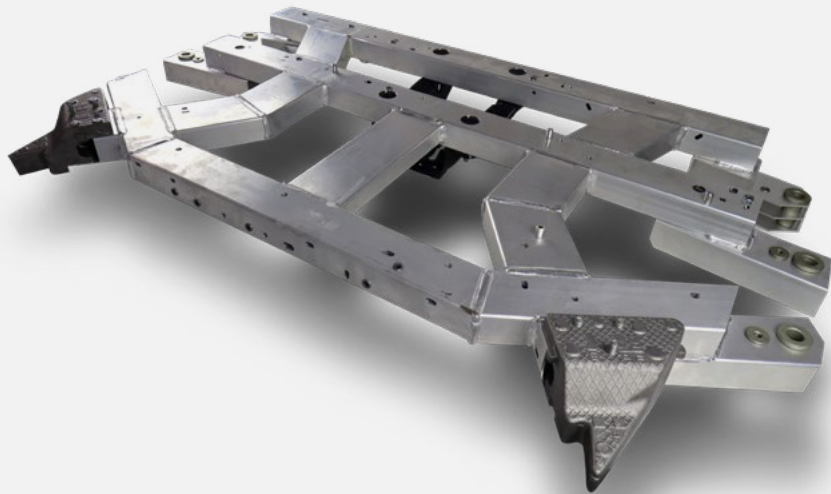


# Compressor and Charger Carrier

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<b>Aluminum Alloy</b>	: 6063 - 6082
<b>Heat Treatment</b>	: T6
<b>Coating</b>	: s450 - s439 (Bağlantı Elemanları)
<b>Technology</b>	: Extrusion, Welding, Force Control Bushing Assembly, Positive Connection Technology
<b>Competencies</b>	: Product Development, Machining, GMAW, CMT





# Cradle

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- Aluminum Alloy** : High strength over 6082 with the special alloy we developed
- Heat Treatment** : T6
- Coating** : s450 - s439 (Fasteners)
- Technology** : Extrusion, Twisting
- Competencies** : Product Development, Machining, CMT



# Crash Management Absorber

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<b>Aluminum Alloy</b>	: 6060 - 6063 - 6082 - C24/C28*
<b>Heat Treatment</b>	: T6 - T66
<b>Coating</b>	: e-coat, s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Casting, Bending, Welding, Assembly
<b>Competencies</b>	: Product Development, Machining, Stretch Bending, GMAW, CMT





## Bumper Beam

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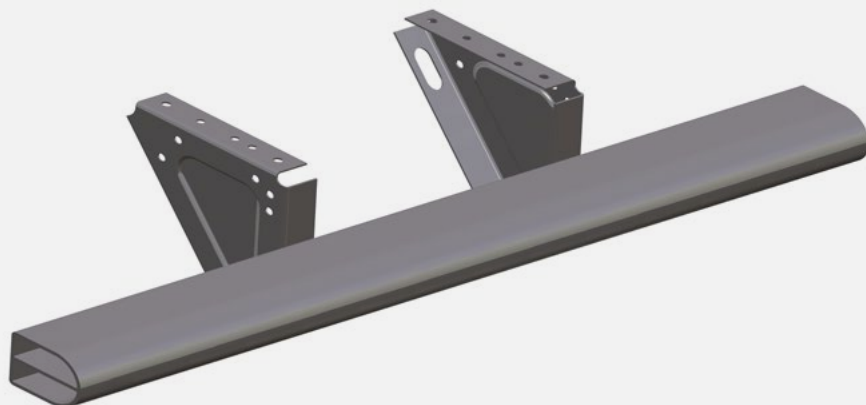
<b>Aluminum Alloy</b>	: 6060 - 6063 - 6082 - C24/C28*
<b>Heat Treatment</b>	: T6 - T66
<b>Coating</b>	: e-coat, s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Casting, Bending, Welding, Assembly
<b>Competencies</b>	: Product Development, Machining, Stretch Bending, GMAW, CMT



# Front Under Protection

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<b>Aluminum Alloy</b>	: 6063 - 6082
<b>Heat Treatment</b>	: T4 - T6
<b>Coating</b>	: s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Bending, Welding, Assembly
<b>Competencies</b>	: Product Development, Stretch Bending, Static Testing, Machining, Weld Penetration, GMAW, CMT



# Rear Under Protection

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**Aluminum Alloy** : 6063 - 6082

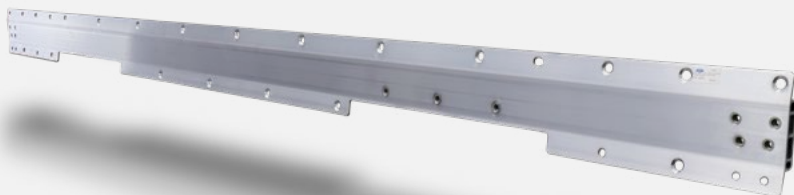
**Heat Treatment** : T4 - T6

**Coating** : s450 - s439 (Fasteners)

**Technology** : Extrusion, Bending, Welding, Assembly

**Competencies** : Product Development, Stretch Bending, Static Testing, Machining, Weld Penetration, GMAW, CMT





## Side Protection

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<b>Aluminum Alloy</b>	: 6063 - 6082
<b>Heat Treatment</b>	: T4 - T6
<b>Coating</b>	: s450 - s439 (Fasteners)
<b>Technology</b>	: Extrusion, Welding, Assembly
<b>Competencies</b>	: Product Development, Static Testing, Machining, Weld Penetration, GMAW, CMT



## Roof Rail

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<b>Aluminum Alloy</b>	: 6063 - 6060
<b>Heat Treatment</b>	: T5 - T6
<b>Coating</b>	: Anodized (Matt - Glossy)
<b>Paint</b>	: Powder Coating - Wet Paint
<b>Technology</b>	: Extrusion, Stretch Bending, Machining, Heat Treatment, Powder/Wet Painting, Assembly, Polishing
<b>Competencies</b>	: Design & FEA, Static Testing



# Crossbar

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<b>Aluminum Alloy</b>	: 6063 - 6060
<b>Heat Treatment</b>	: T5 - T6
<b>Coating</b>	: Anodized (Matt - Glossy)
<b>Paint</b>	: Powder Coating - Wet Paint
<b>Technology</b>	: Extrusion, Stretch Bending, Machining, Heat Treatment, Powder/Wet Painting, Assembly, Polishing
<b>Competencies</b>	: Design & FEA, Static Testing





## Side Skirt

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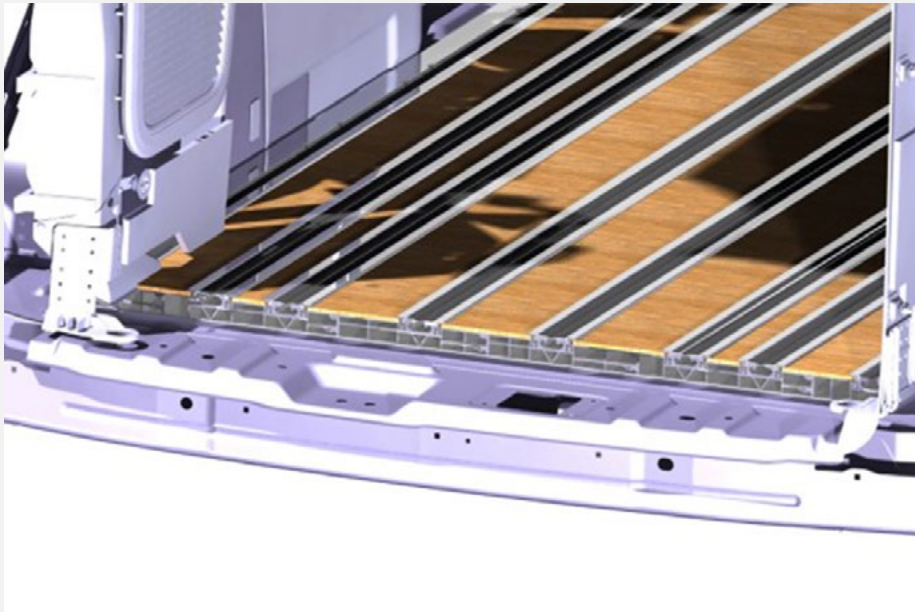
We design and manufacture fixed and movable step profiles for use in commercial vehicles.



## Shelf Systems

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We design solutions that will increase the product carrying capacity of the vehicles by mounting products such as cabinets and shelves on vehicles such as panel vans, minibuses and pickup trucks that do not have a high product carrying capacity and offer them to our customers.

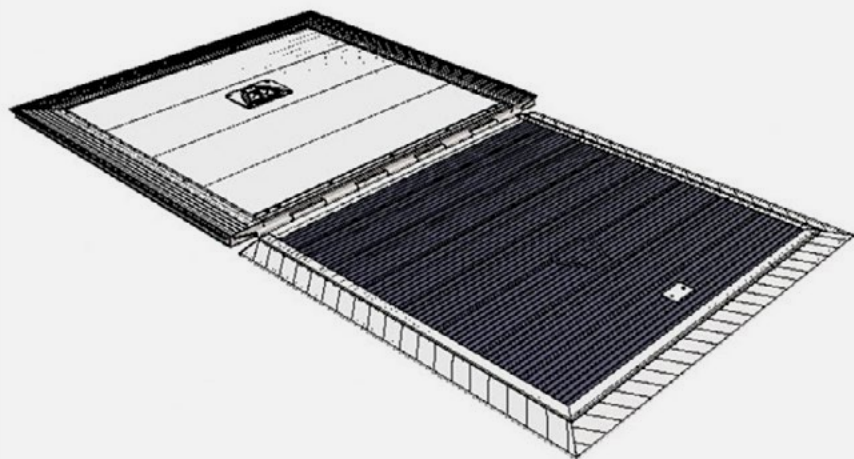


# Luggage Stabilization Systems

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We help you carry your loads safely and comfortably by developing light and durable load fixing systems with aluminum.

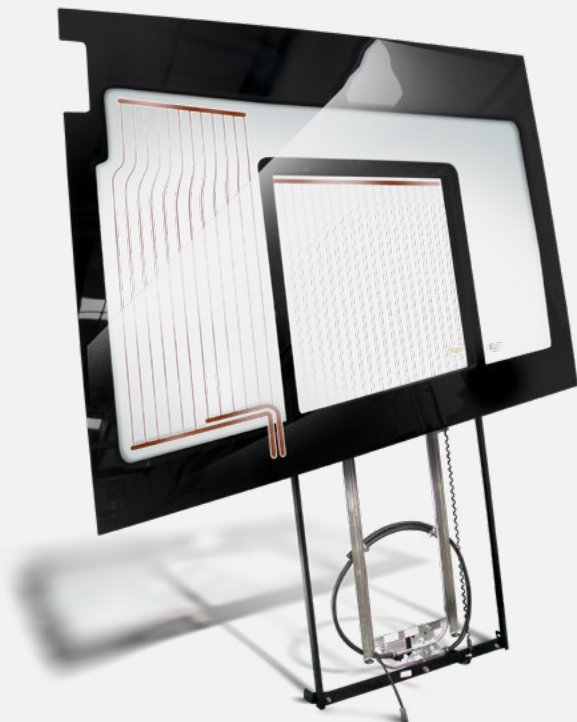




# Manuel Ramp

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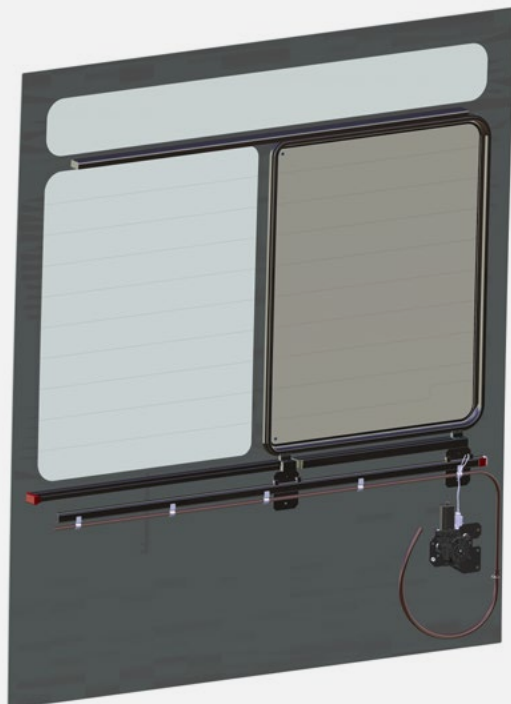
We design and manufacture manual entry ramps that facilitate the entry and exit of people with mobility difficulties and enable them to travel comfortably.



# Vertical Electric Driver Window

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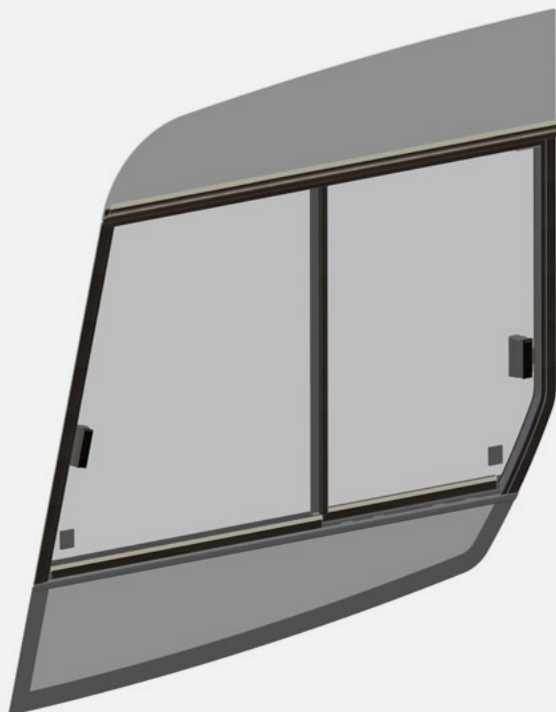
We design and manufacture manual and electric horizontal and vertical sliding frames in accordance with international European standards (UN / EC R107) for passenger buses, minibuses, caravans, heavy-duty vehicles.



# Horizontal Electric Driver Window

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We design and manufacture manual and electric horizontal and vertical sliding frames in accordance with international European standards (UN / EC R107) for passenger buses, minibuses, caravans, heavy-duty vehicles.



# Manual Sliding Window

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We design and manufacture manual and electric horizontal and vertical sliding frames in accordance with international European standards (UN / EC R107) for passenger buses, minibuses, caravans, heavy-duty vehicles.





## Emergency Exit

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We design and manufacture manual and electric emergency exit and ventilation frames in accordance with international European standards (UN / EC R107) for passenger buses, minibuses, caravans, heavy vehicles.



## Sunroof

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We design and manufacture manual and electric horizontal and vertical sliding frames in accordance with international European standards (UN / EC R107) for passenger buses, minibuses, caravans, heavy-duty vehicles.

# TECHNOLOGY & COMPETENCE

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- Aluminium Extrusion
- Aluminium Injection
- Machining
- Joining Technologies
- Coating / Surface Treatment
- Installation
- Test Center

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- Product Development
- Project Management
- Quality Management





# Aluminium Extrusion

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Aluminium extrusion, automotive systems sector; lightness, high strength, plays a leading role in reducing CO<sup>2</sup> emissions.

With our deep experience and large press capacities in our integrated facility, we enable the production of hard alloy materials with a press capacity of more than 4000 tons, a weight of more than 20 kg per meter, and large sizes and lengths up to 30 meters, within narrow tolerances.



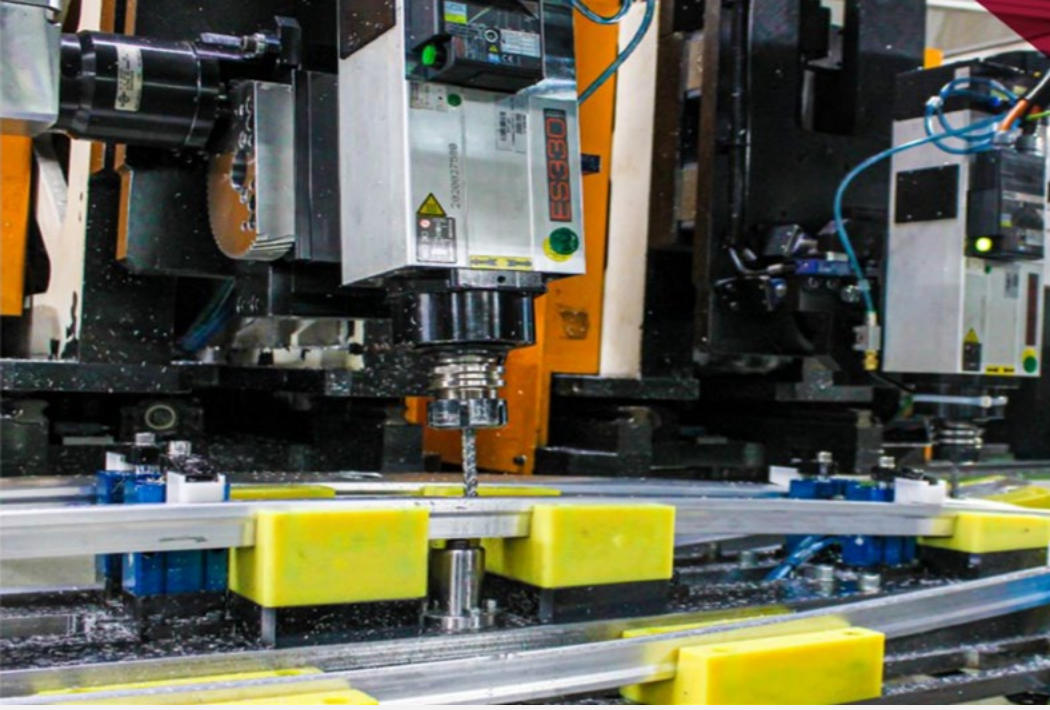


# Aluminium Injection

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With our knowledge and experience in materials, we can perform simultaneous production with 5 different alloys and 1050 tons of press capacity for the expectations of the rail systems industry, thanks to full automation.

We produce visual, structural and safety parts in the narrowest tolerances in our injection lines equipped with the latest technology.



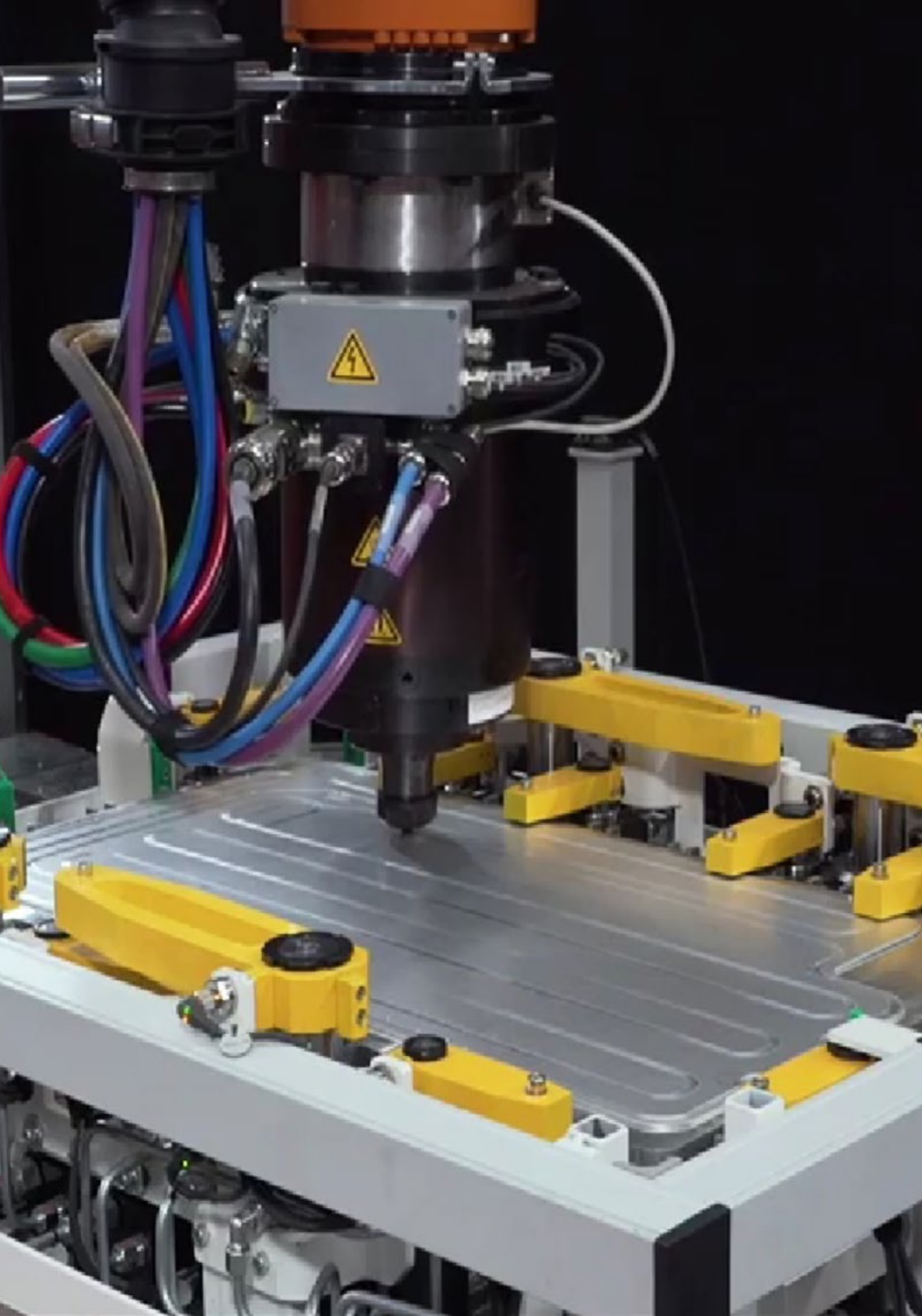
# Machining

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We carry out quality production with our technology in our machinery park, which has an annual capacity of 8000 tons of aluminum profiles and precision processing;

- > All cutting, drilling, grooving, roll threading, engraving (5 axes)
- > CNC precision serial slicing (with 0.1 mm precision) operations
- > Vibration and washing, cutting, surface and section brushing, chamfering operations
- > We design special high-tech serial processing machines in line with customer projects
- > There are serial assembly units prepared in accordance with customer projects.





# Joining Technologies

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Our welding cells have a high level of automation, we make sure that the best suppliers and the latest technology are used to ensure the highest quality assembly.

We use MIG/TIG systems and CMT weld types in thin-walled profiles to reduce deformations and hardness losses in the welded joint.

We follow the latest joining technologies such as Friction Stir Welding, adhesive processes, self-piercing rivets (SPR) and make relevant investments.



## Coating / Surface Treatment

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We provide countless alternative color and texture appearance opportunities for aluminium.

Profiles up to 7m in length are covered in QUALICOAT and SEASIDE standards in our 3,000 tons capacity facility. Special gloss and high-level visual requirements are provided in our paint shop and anodizing facility created in accordance with international standards.





# Installation

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We carry out all processes from design to installation within our own structure.

With our customer-oriented approach, we are able to offer prototype and simulation applications at every stage. After the designed products and equipment go through quality control processes, we carry out their assembly in accordance with the standards with our expert team working diligently.



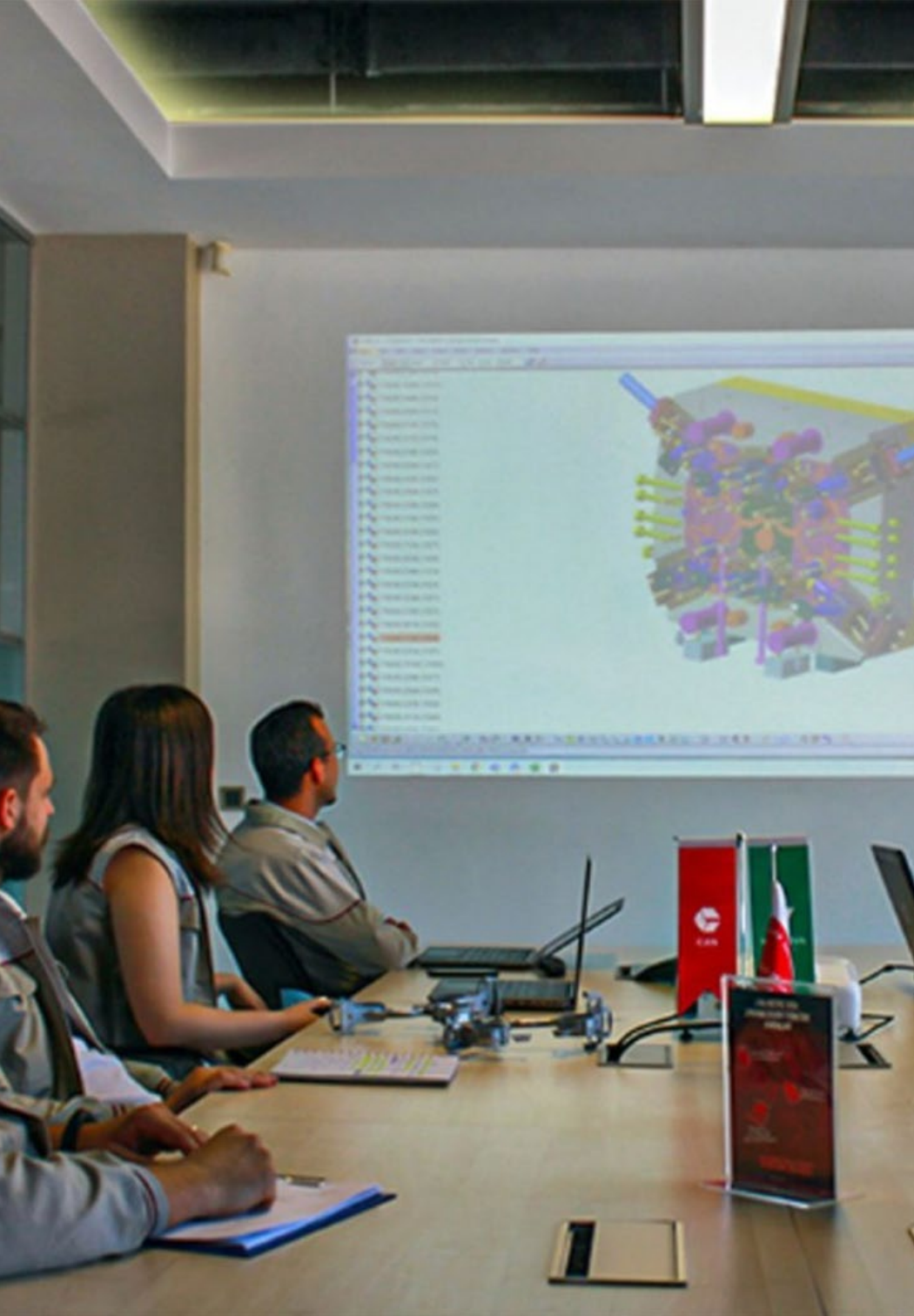
# Test Center

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As Yeşilova Holding R&D Center, we conduct research and test studies on both material and product basis.

Our laboratory team, which consists of competent employees, performs metallographic and mechanical experiments to determine the characteristic properties of materials. At the same time, we carry out strength tests and environmental tests such as dimensional and mechanical verification, material verification, paint and surface verification, and environmental tests at the customer's workplace, with our devices with which we can test product expectations.





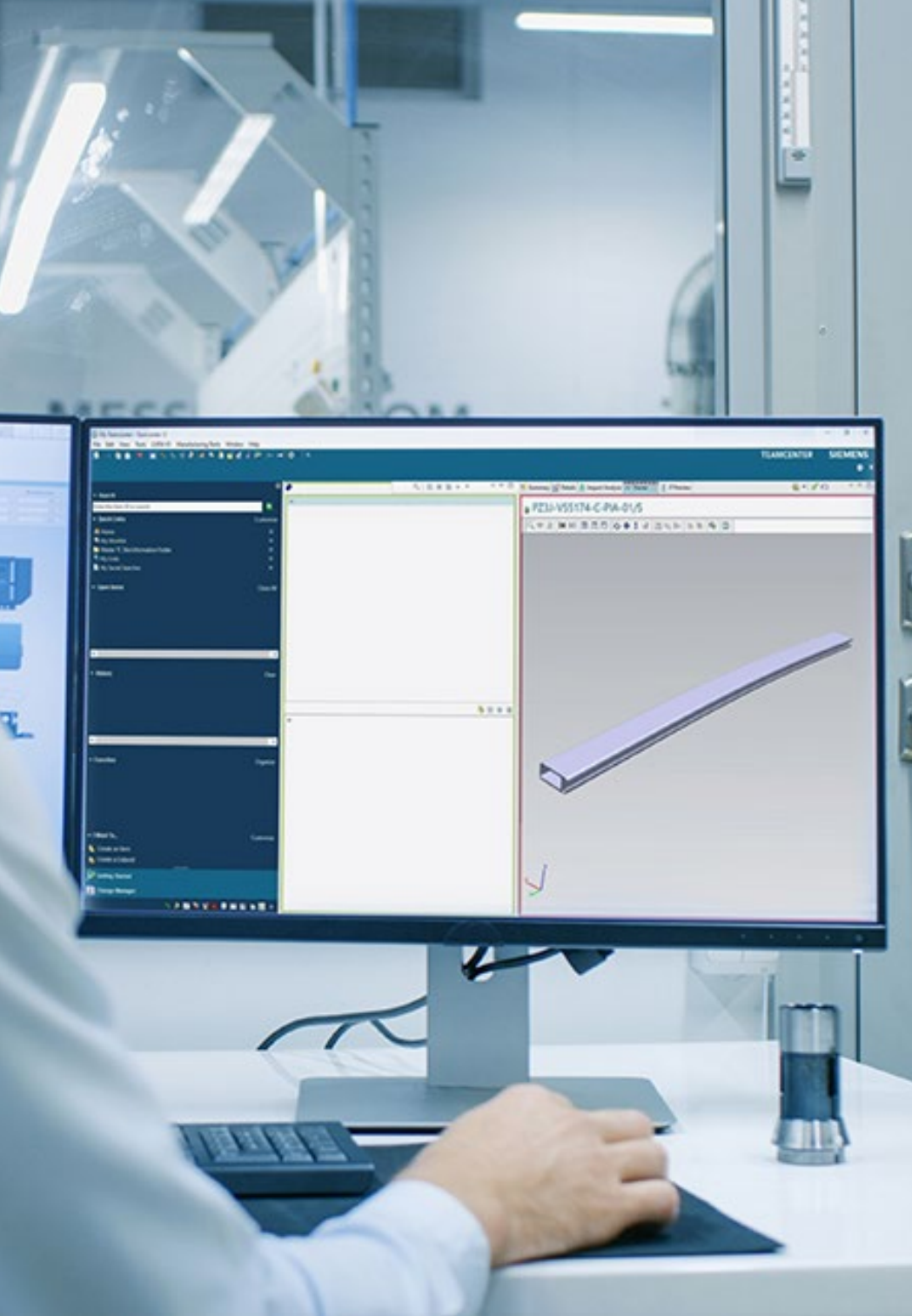
# Product Development

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Research and Development is a priority for Yeşilova. Innovation is a key factor for success by differentiating our products and services.

Through innovation, Yeşilova aims to anticipate new technological trends and offer differentiating products that meet efficiency, lightness, cost, quality and safety requirements. We work closely with automakers when designing and manufacturing our products, from the early stages of development to final production. In addition to allowing us to meet their expectations in terms of current products, this collaboration facilitates the joint development of bodily concepts and technologies for the future.

Yeşilova is constantly working to develop lighter vehicles. Mitigation is one of Yeşilova's main research areas. This is one of the most demanded requirements in the automotive industry due to the need to improve fuel efficiency and reduce CO2 emissions.



# Project Management

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While we work with a focus on creating a perfect customer experience for every project we undertake, we act with an agile management approach that meets the requirements of the automotive industry with the PMI methodology. We follow solution-oriented approaches with our proactive teams that take into account the special requests of our customers.



# Quality Management


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Conforming to OEM standards, IATF 16949, Q1 environmental sustainability, OHS, traceability, QDMS, digital transformation, green consensus, CMM, EOL control technology.

We serve as a strategic solution partner that our customers trust with our innovative products made of aluminum systems at international quality standards and easily applicable solutions even for the most difficult project details.







# Our goal is “A Sustainable World with Happy Employees”

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As Yeşilova Holding, our goal is “A Sustainable World with Happy Employees” in every field that we operate. We follow this motto, our values and principles as we move forward towards this goal.

To reach our purpose, we adopt sustainability in all 3 aspects: Environmental, Social and Economic as our core strategies and integrate to the way we do business in all our companies and processes.



**YEŞİLOVA**

**CANEL  
AUTOMOTIVE**

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