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ALUMINIUM EXTRUSION PROFILES

ASAŞ

A LEADING MANUFACTURER

Since it's founding in 1990, ASAŞ has grown steadily to become one of the top 100 industrial corporations in Turkey and one of Europe's leading manufacturing companies, exporting to over 80 countries, employing over 2500 highly skilled people across the group. ASAŞ currently operates from a 750.000 square meter site in Sakarya-Turkey, of which 300.000 square meters is a closed, state of the art, production facility.

MULTIPLE BUSINESS UNITS

ASAŞ currently includes a number of highly successful business units and production facilities;

- Aluminium Extrusion (anodized, powder coated, machined profiles)
- Aluminium Flat Rolled Products (sheet, coil, foil, coated coil)
- Aluminium Composite Panel (for facade, cladding and signboards)
- PVC Profiles (for door and windows)
- Aluminium Rolling Shutters
- Aluminium Design Products (flag poles, lighting poles, shelve systems)
- Asaş Art (creative platform for artists, academicians and students)



Solution Partner

Integration

Technology

Innovation

World Class Manufacturing

Sustainability

Next Practice



A PERFECTLY INTEGRATED PRODUCTION PARTNER IN ALU -EXTRUSION

"Constant desire to invest in technology, integration and innovation" is the best phrase to explain ASAŞ Extrusion vision. At the heart of ASAŞ Extrusion is a fully integrated manufacturing facilities. This unique end-to-end capability offers us an invaluable oversight of the entire profile production processes;

- Billet Casting
- Die Production
- Extrusion
- Anodizing
- Powder Coating and Sublimation
- Prefabricating & Assembly

ASAŞ is an ideal solution partner for unique client projects worldwide minimising the number of interfaces required at various stages of supply chain; avoiding unnecessary transportation expenses; shortening delivery times; preventing the problems associated with the transfer of profiles between contractors, outsourcing all the essential other accessories and reducing overall semi-finished production costs.

GLOBAL FOOTPRINT

Headquartered in Istanbul, ASAŞ extrusion produces and distributes aluminum profiles to projects globally, for use in sectors as diverse as the automotive, furniture, consumer electronics, marine, railway, construction, aeronautics, household appliances and road transportation industries etc. ASAŞ extrusion has also been recognized as the leading commercial exporter in its sector. With 40 per cent of our total production currently being shipped to 40 countries worldwide.





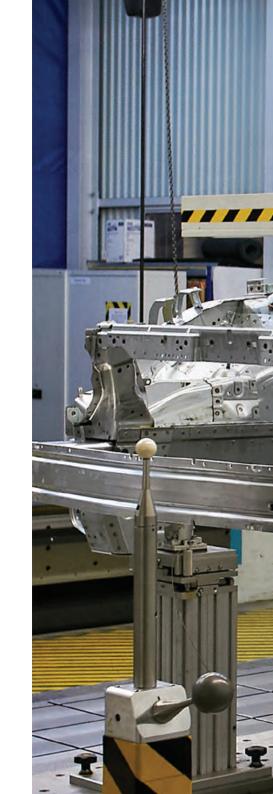
We offer customized solutions to automotive industry to satisfy their increasing demand for lightweight structures. By adding own knowledge and experience, we transform extruded aluminium profiles into high precision components with internationally certified, precision tolerances and quality requirements.

Our capabilities:

- Structural profiles and semi-finished products
- Interior parts and components
- Crush management parts
- Metallurgical approach to special requirements
- Traceability
- ISO 9001 and ISO 16949 certificates
- Precise CNC cutting
- * 5 axis CNC milling

- CNC Tapping
- Punching, forming
- CNC and NC bending
- 15085-2 CL1 certified TIG and MIG welding
- Supply of accessories and assembled parts
- Machining fixture, tooling and control gauges design and production
- Anodizing and powder coating for components
- Assembly
- Kitting and special packing







LIGHTER AND BRIGHTER **SOLUTION FOR THE AUTOMOTIVE INDUSTRY**

Formability

Precision

Ductility

Efficiency

Performance

Low emission – Cleaner environment

Recyclability

Energy absorption capability





Asaş has been a supplier to well-known trailer manufacturers and our product range includes 1050, 1070, 6060, 6061, 6063, 6082, 6463, 7005, 7020, 9003 alloys used for different types of trailer substructures, superstructures, chassis parts, side doors, truck bodies and other complementary aluminium parts and accessories.

Our Capabilities:

- Cargo semi-trailer, van trailer, horse trailer, dump body trailer, refrigerated dry freight trailer, tank trailer, travel trailer, utility trailer
- Complete finished side and back door
 production
- Up to 15m anodizing capability
- Up to 15m length CNC machining, bending capability
- Semi fabrication and assembly of parts and components
- Kitting and special packing

INNOVATIVE AND SMARTER SOLUTIONS FOR THE TRANSPORTATION INDUSTRY

- Max payload
- * Durability
- * Attractive appearance
- * Outstanding mechanical properties
- Long lasting finish
- Long life
- Easy to repair
- Reduced fuel consumption
- Cleaner environment





Asaş extrusion meets the client requirements with more than 10 years experience in railway aluminium applications. Requirements of railway sector is met for both structural body parts in dedicated alloys and various interior and exterior applications. Products are kitted, packed and delivered carefully according to client packing instructions.

Our capabilities;

- Profiles for complete body
- Floor and roof systems
- Door and window system profiles
- Interior components and accessories
- Welded parts and components
- Up to 600mm wide and 75kg/meter weight profile production
- Structural profile production for body shell
- Material tests and controls according to client specifications
- ISO 9001 and IRIS certification

- Precise CNC cutting
- 5 axis CNC machining up to 30 meters
- Punching, forming
- CNC and NC bending
- 15085-2 CL1 certified TIG and MIG welding
- Supply of accessories and assembly
- Machining fixture, tooling and control gauges design and production
- Anodizing and powder coating
- Assembly
- Kitting and special packing



STRUCTURAL AND SUPERIOR SOLUTIONS FOR RAILWAY INDUSTRY

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- Sustainable mobility
- Corrosion resistance
- Longer life span
- Reduced maintenance cost
- Higher speed
- Minimized number of parts
- Aerodynamic
- High salvage value
- * More passenger space





Asaş has increased its presence in marine applications in recent years and provides different alloys and special shapes to ship, leisure boats, fishing vessels, patrol boats and yacht building industry.

Our capabilities;

- 55 MN extrusion press up to 450mm tube, solid bars, angle, flat wider profiles
- Machining prefabrication and part assembly
- Marine walkways, stairs
- * Offshore platforms, aluminium pantoons
- Yacht poles
- Other marine products



VERSATILE AND FLEXIBLE SOLUTIONS FOR MARINE INDUSTRY

- Weldability and less welding works
- Excellent strength to weight ratio
- Designability
- Easy to fabricate
- * High corrosion resistance in marine

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- environments
- Large extruded sections







Renewable Energy

- Profiles for wind and solar energy systems
- Wind turbine structure and components
- Blade extrusions
- Extrusion for ladders and lifts
- * Frames for solar cells and farms
- Sub-construction and mounting systems for ground and roof
- Semi-fabricating, including cutting to size drilling, machining, fixing etc.

High Voltage Substations, Busbars and Flatbars

- Up to 24m single length conductors
- * Diameter up to 450mm
- Lower loads
- Tailored to customer specification
- * Type tests and material test according to international requirements
- Bending capability
- Special packing for overseas
- * Alloys 1050-1070-6101B-6005-6060 6061-6063



Electric & Electronic

- Lighting fittings and LED profiles
- Heat sinks (cooling) profiles
- Components for electronic industry
- Electronic motor housing
- Lighting poles and bollards
- Surge arresters
- Single source fabrication



RENEWABLE AND LUCRATIVE ENERGY EFFICIENT SOLUTIONS FOR BETTER WORLD

- Lower carbon emissions-green future
- * Ability to conduct heat and electricity
- Weather resistant
- Decorative
- Nontoxic and gas tight
- Cost effective
- Highly reflective of visible light and radiated heat
- * Nonmagnetic non sparking non rust









Engineering Industry

- Machine construction profiles
- Heating, ventilation, air conditioning
- Pneumatic cylinders
- Pump housing
- Ladders and scaffolding
- Sun shading and tent systems
- Tank roofs and floating deck systems
- Pre-machining and assembly



Furniture and White Goods Household Appliances

- Indoor, outdoor furniture profiles
- Handles for refrigerators and ovens
- Household electrical appliances
- Aluminium frames
- Shower cabinets
- Shelve systems
- TV units
- Bathroom furnitures



Other Industries

- Defense industry
- Car canopy
- Display systems
- Conveyor profiles
- Profiles for aeronautic industry
- Advertising and road sign frames
- Exhibition equipment and system structural profiles for different applications





INFINITE DESIGN AND CREATIVE SOLUTIONS FOR DIFFERENT INDUSTRIES

CIHAZ

KULLAN

- Functionality
- Inherent strength
- * Intelligent material specifications
- Unlimited forming capabilities
- Perfection on aesthetics
- Precision on production
- Various finish alternatives
- Seamless structure



Our expertise and a strong desire of being partners for construction industry has helped us to become one of the leading architectural system profile suppliers amongst both the domestic and international construction industry customers.

We are capable of accommodating the widest range of an esthetic demands expected by the world's most ambitious architects and structural engineers. Asaş has been successfully supplied to thousands of creative construction projects from airports to high rise office towers, private homes to municipal buildings. Highest international quality standards with performance characteristics assessed, recorded and provided with every customer order.

- Industrial and domestic facade profiles
- * Skylight system profiles
- Winter garden profiles
- Door and window profiles
- Balustrades
- Balcony system profile
- Rain gutter etc.



ECOLOGICAL, MODERN AND TECHNOLOGICAL SOLUTIONS FOR ARCHITECTURAL REQUIREMENTS

- Guaranteed performance
- High strength to weight ratio
- * Energy saving
- * Low maintenance
- * Fire safety
- * Hundreds of surface finishes
- Low cost in use
- Optimal security
- Durability
- * Compatibility for fast track construction
- * Easy to work





SERVICES

BILLET CASTING

DIE PRODUCTION

EXTRUSION

ANODIZING

POWDER COATING & SUBLIMATION

PREFABRICATING & ASSEMBLY

RESEARCH & DEVELOPMENT

CORE PRINCIPLES & QUALITY



SAME SITE CASTING

The benefits of casting billets at the same facility is largely in the ability to customize a billet's properties to better accommodate a particular profile specification. In addition, knowing that higher quality billets help to extend the life of an extrusion die and deliver improved yield and recovery rates, resulting in significantly lower costs, we made the strategic decision at our founding to control the quality of the billets we extrude.

CASTING PURITY

The Asaş Billet Casting line uses a fully automated computer-aided, hot top air slip casting system to control the casting process and produce exceptionally superior quality aluminium billets that adhere to the highest European EN AW quality standards. This enhanced billet purity in turn yields stronger aluminium profiles, an essential outcome where the life time value of a product is concerned. We can also customize billet's alloy limits according to a customer's specific project and physical characteristic requirements.

MODERN CONTINUOUS HOMOGENIZING

The metallurgical results of uniform, continuously homogenized billets are considerably superior to those achieved by conventional batch system due to precisely controlled temperature cycles during heating, soaking and cooling.

Thanks to continuous billet homogenizing that each logs in the heating compartment uniformly heated to required temperature and logs then pass to the holding compartment where they are precisely kept at the required temperature throughout the holding time after entering the cooling station logs are subjected to intensive cooling that cooling speed is adjustable based on alloy.



FIGURES

- 90.000mton annual production capacity
- 100% ultrasonic testing of aluminium billets

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- + 1050, 1070, 6060, 6061, 6063, 6082, 6463, 7005, 7020, 9003 alloys
- 6, 7, 8, 9, 10, 14 inch billet diameters

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• Up to 7300mm billet length

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DIE DESIGN

Our skilled Die Design & Development Team is dedicated to the creation of high quality extrusion dies. Their process begins and ends with the client's project goals and focuses on efficiently developing the most cost-effective and technically rigorous die solution.

PRECISION FABRICATION

Using the very latest computer-aided design (CAD) and (computeraided) manufacturing (CAM) systems, Die Design & Development Team works hand-in-hand with a team of skilled engineers to produce a large quantity of high quality custom dies at a suite of state of the art, computerized-numerically controlled (CNC) workstations.

TECHNICAL SUPPORT AND EXPERIENCE

Since 1990, ASAŞ Die Design & Development Team has produced more than 20.000 customer profile dies. This wealth of technical experience is made available to every one of our customers from the beginning of a project, to the completion of their profiles. We believe that access to this expertise ensures own customer benefit from the most efficient, cost effective and technically rigorous extrusion process.



FIGURES

- 250 new dies per month production capacity
- Cost effective and technically rigorous die solutions
- 2 weeks lead time for die production
- Up to 850mm die * 900mm tool package
- Tolerances down to ±0,1mm
- Technical support to customer's design teams

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PRODUCTION CAPABILITY

ASAŞ Extrusion Facility is comprised of 7 separate and highly efficient production lines, from 1250 tons through 1350, 1600, 2200, 2700, 3500 and up to 5500 tons. Using only 100% primer quality billets, our total aluminum profile production capacity is 75.000 tons per year at a facility that has been optimized over time to produce a range of aluminum profiles with different alloys and physical characteristics.

CATEGORY LEADERSHIP

We are proud to be considered one of Europe's fastest growing manufacturing companies and a leading voice within the Turkish extrusion industry. This success is more than simply a testament to our capacity, efficiency and technological skill. It is, we believe, the result of a relentless focus on exceeding our customers' expectations. With our world class expertise and state of the art extrusion facilities, we can design and produce a wide range of custom and standard extrusions tolerances.

HEATING & QUENCHING

The ASAŞ Extrusion Facility is also equipped with a suite of induction-billet heating units to create taper-heated billets capable of achieving isothermal extrusion. In addition, the ASAŞ Quenching Unit produces a perfect cooling ratio, especially helpful where special profile characteristics are concerned. When extruding a new profile at the initial test stage the regulated flow of water, air and standing wave can be recorded and its cooling data used to produce subsequent extrusions of identical quality.

CUSTOM PROFILE PRODUCTION

At ASAŞ, we have been at the forefront of the movement towards increasingly custom profile production, investing heavily in our ability to design and develop more innovative solutions for a diverse customer base, including the construction, furniture production, white household appliances, customer electronics, heatsink production, machinery manufacture, road transportation, automotive, marine, railway and aeronautic industries.



FIGURES

- 75.000mton annual production
- capacity
- From 50g/m up to 75kg/m profile production availability

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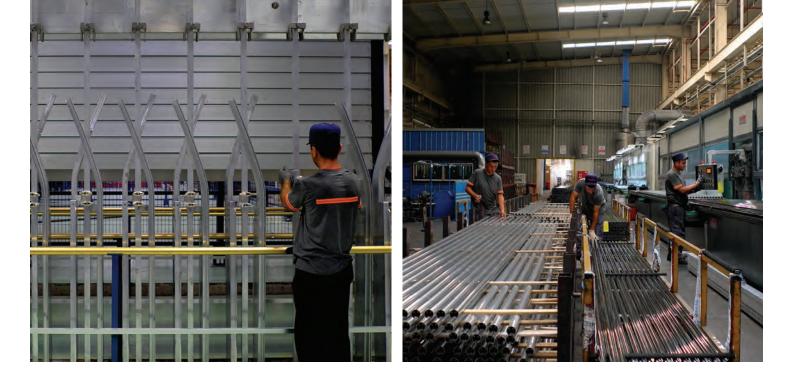
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- Up to 30m single length profile extrusion
- Up to 450mm diameter or 600mm wide profile extrusion
- Full traceability



UNRIVALED CAPACITY

The largest system of its kind in the world, the state of the art anodizing facility can produce up to 14.000.000 square meters of high quality anodized aluminum profiles and accessories each year. Uniquely, the anodizing of aluminum sheets in a range of colors can also be completed at this facility.

EXCEPTIONAL QUALITY

An exceptional anodizing process is the product of strict quality management procedures. ASAŞ Anodizing Facility is QUALANOD[®] certified by the European Anodizers Association and all profiles are tested and certified according to the highest international standards.

TREATMENTS, COLOURS & FINISHES

Natural, black, gold, shades of bronze, satinating to polishing, inox effect, scotch brite[™], sandpaper finishing, steel wire brushing, shot-blasting.

LONG LENGTH ANODISING UP TO 15 METERS

Using another dedicated line, 15 meter long profiles are anodized in a wide range of colours; from natural silver, light bronze and different shades of brown and black to gold and other organic colours in a range of gloss, semi-matte and matte finishes. This facility also provides a full electro and chemical brightening service for profiles up to 8 meters long.

ENVIRONMENTAL SENSIVITY

One of the most advanced systems of its kind, the ASAŞ Anodizing Facility is equipped with an intelligent waste-recovery, recycling and pollution control capability to ensure every aspect of the ASAŞ Anodizing Process is compliant with all key environmental standards. Another important aspect of the ASAŞ Anodizing Process is our lower water usage and associated waste water treatment. We interlock the total water supply using programmed control and ensure that all flush water is used repeatedly, to lower overall water wastage.

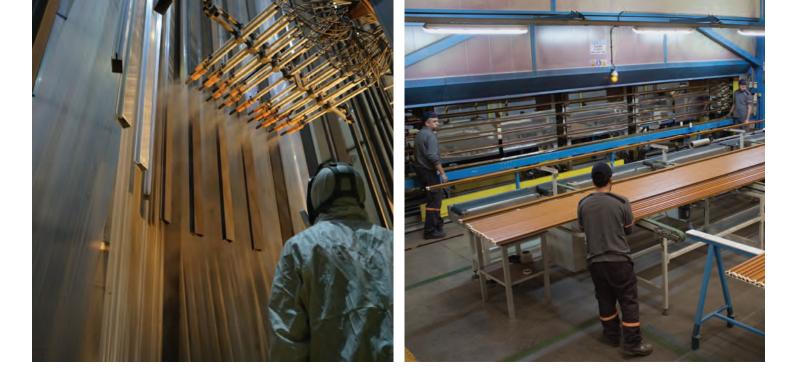


FIGURES

- 40.000mton (almost 14.000.000m²) annual production capacity Up to 15m single length anodizing
- capability
 Batch to batch color and surface
- quality consistency
- Anodizing of small parts and
- components
 - Full automated highly precise
- computerized production process

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COATING CAPACITY

With the capacity to produce up to 7.500.000 square meters of powder coated profiles per year, ASAŞ Electrostatic Powder Coating Facility is where accessories, short profiles and profiles 400mm mm wide and 8 meters long can be powder coated in a number of special or European RAL colors, in a range of gloss finishes in dedicated 2 different lines.

QUALITY MANAGEMENT

ASAŞ Electrostatic Powder Coating Facility is QUALICOAT® certified by the European Aluminum Powder Coaters Association.

SUBLIMATION PROCESS

Alu - profiles and sheets in wooden and marble effects are produced with the latest sublimation technology.

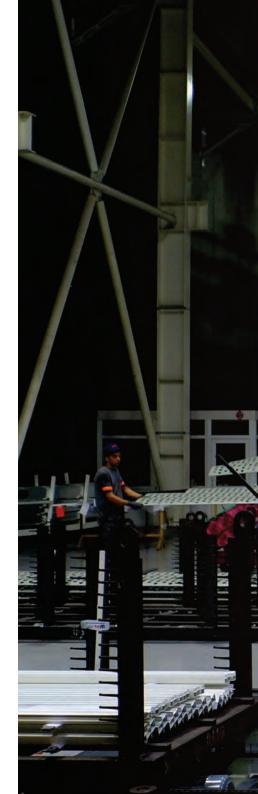
Looks more real and stays stronger against outside effects rather than standard foil

Flexible, easy application, wide options

For primer coating, we apply our high quality powder coating in $\ensuremath{\text{QUALICOAT}}\xspace^{\ensuremath{\mathbb{R}}}$ standard.

ENVIRONMENTAL SENSITIVITY

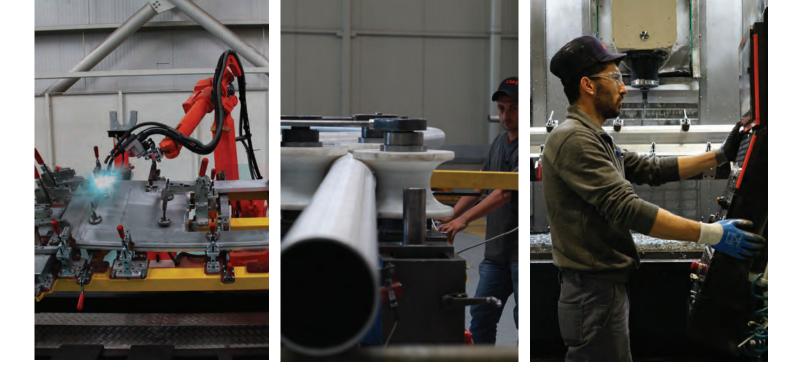
The ASAŞ Electrostatic Powder Coating Facility uses only RoHS chrome-free treatments to meet both our environmental responsibilities and the standards of the automotive, home appliance and furniture manufacturing industries.



FIGURES

- 20.000mton (7.500.000m²) powder coating
- 5.000mton sublimation coating for different effect coating
- Up to 8m single length powder coating
- Powder coating of small parts and components
- Consistently homogenous coating thickness along the entire aluminium profile

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EXPERT PARTNERSHIP

Our clients benefit from a highly skilled technical resource in the ASAŞ Mechanical Processing Team and can expect a consistently high level of professional partnership, focused on efficiently and cost-effectively delivering the best possible prefabrication solution.

PRECISION PREFABRICATION

The ASAŞ Mechanical Processing Team provides customers with a world class profile prefabrication solution. Using the very latest prefabrication technology, this team transforms extruded aluminium profiles into high precision components and machined semi-finished or finished parts with internationally certified precision, tolerances and even surface roughness. All cutting and punching tool design is conducted on-site, enabling the ASAS Mechanical Processing Team to offer a truly comprehensive range of prefabrication procedures.

SINGLE-SOURCE BENEFIT

There are many benefits to single-source prefabrication. These include minimizing the number of interfaces required at various stage of supply chain, avoiding unnecessary transportation expenses, reducing scrap, shortening the time between production and application, eliminating the problems that can result from the transfer of profiles between manufacturer and subcontractor and lowering overall production costs.

Further Fabrication

- Kitting and special packing 15085-2 CL1 certified TIG and MIG welding
- Dedicated automation for client projects
- Supply of accessories and assembly
- Machining fixture, tooling and control gauges designing and production
- Anodizing and powder coating
- Assembly

- - Precise CNC cutting
 - 5 axis CNC milling
 - CNC Tapping
 - Punching presses
 - CNC and NC bending



FIGURES

- High-end quality products
- Single source for all types of machining and assembly requirements
- Up to 15m, 5 axis CNC machining centers
- Dedicated special single production line design for mass production

Ma Additional services: subcontracting of VTC-800/30 other parts and accessories based on projects



RESERCH & DEVELOPMENT

Our research and development department play an integral role in the life cycle of our products. Our main focus is the development of existing & new products and processes, the creation of innovative solutions, and the creation of short and long-term partnerships with our customers. Our organization performs a wide range of research and development work looking ahead for the future. ASAŞ R&D Team concentrates on long-term, future-based development of the technologies for value creation and cost effectiveness. Also, by being close to our customers and their specific need we cooperate with them as a partner to find right solutions to their industrial needs where they can have great advantage on their business.

ASAŞ specialized technical R&D team work on:

- Alloy development having qualified physical and mechanical properties with superior metallurgical abilities,
- Development of the extrusion die design and production technologies,

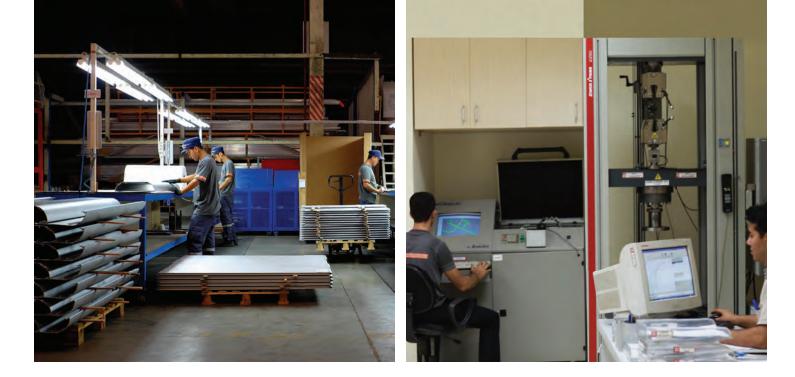
- Optimization studies of extrudability of aluminum billets,
- Microstructural, mechanical properties and advanced material analysis etc.,
- Innovative solutions for our customer projects especially in automotive and railway sector,
- New & existing product development.

TECHNICAL SUPPORT

Since our founding in 1990, we have completed thousands of project for thousands of clients in more than 40 countries worldwide. This experience had yielded countless invaluable lessons, all of which are documented and exist in the collective technical know-how of our engineers. Every day, ASAŞ customers benefit from this experts resource, as we solve problems, streamline processes and improve end-products. Our customers also benefit from a single point of contact that they can trust to take personal responsibility for the production of their profiles and provide a readily available source of technical support throughout the entire manufacturing process.

FIGURES

- 75 highly skilled technicians and engineers working in ASAŞ R&D Department which is officially licensed by the government.
- 1.800m² Reed Gold Certified building equipped with laboratories and test center
- New product development
- New process development
- Solutions and know how provider to our customers
- Alloy development



CORE WORKING PRINCIPLES AND QUALITY

Supporting every one of our business lines is a robust set of six Core Working Principles. These are Quality Management, Technical Support, Customer Care, Health & Safety, Environmental Sensitivity and Positive Work Environment.

HEALTH & SAFETY

At ASAŞ, we are diligent in identifying, evaluating and eliminating every possible risk at all stages of our production process. We do this is Zero Environmental Impact. To achieve this we take a number by planning precautions and their implementation, running practical of practical steps that include the selection of alternative materials training initiatives and maintaining the continuous development of our OHSAS best practices.

ENVIRONMENTAL SENSITIVITY

The aim of the ASAŞ Environmental Management System (A-EMS) with less environmental impact, the maximum use of recycled materials, the minimal use of packaging, the removal of wastewater and the management of all hazardous emissions.





OUR FOCUS

- Innovation culture
- Process excellence
- Respect for people
- On place in time quality
- Voice of the customers
- Development with suppliers

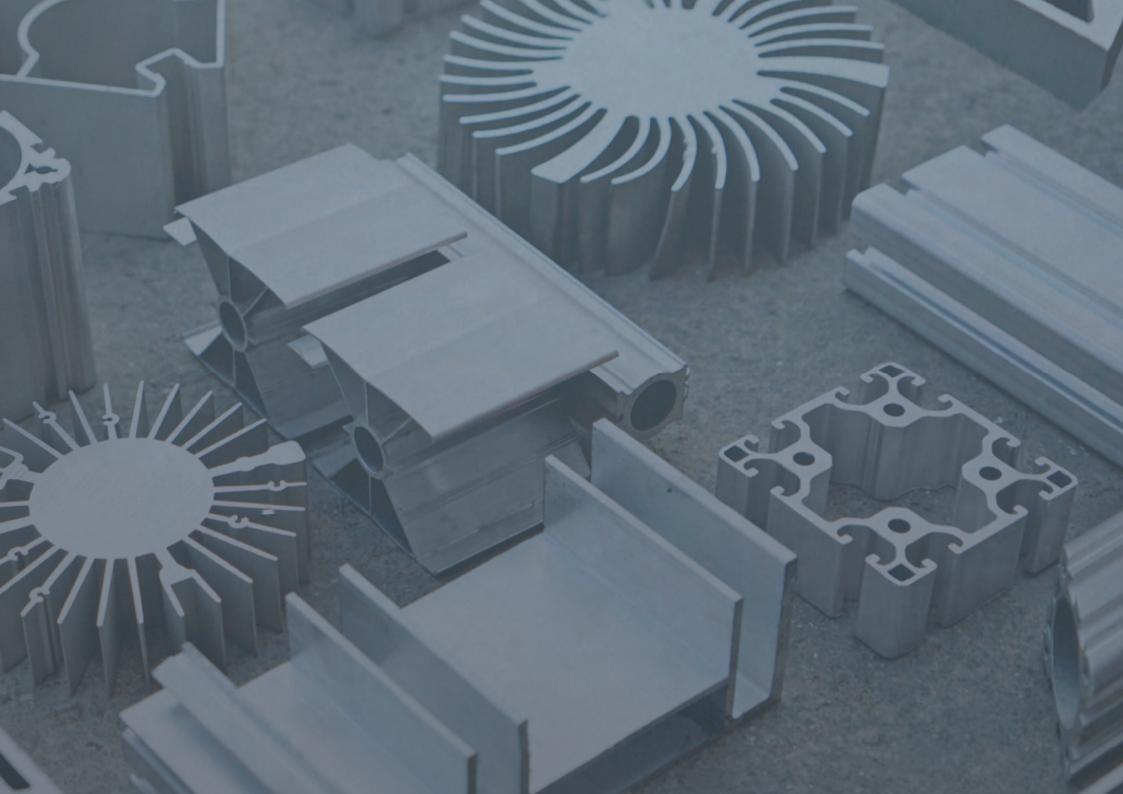
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Aluminium Extrusion Profiles **www.asasalu.com.tr**

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