



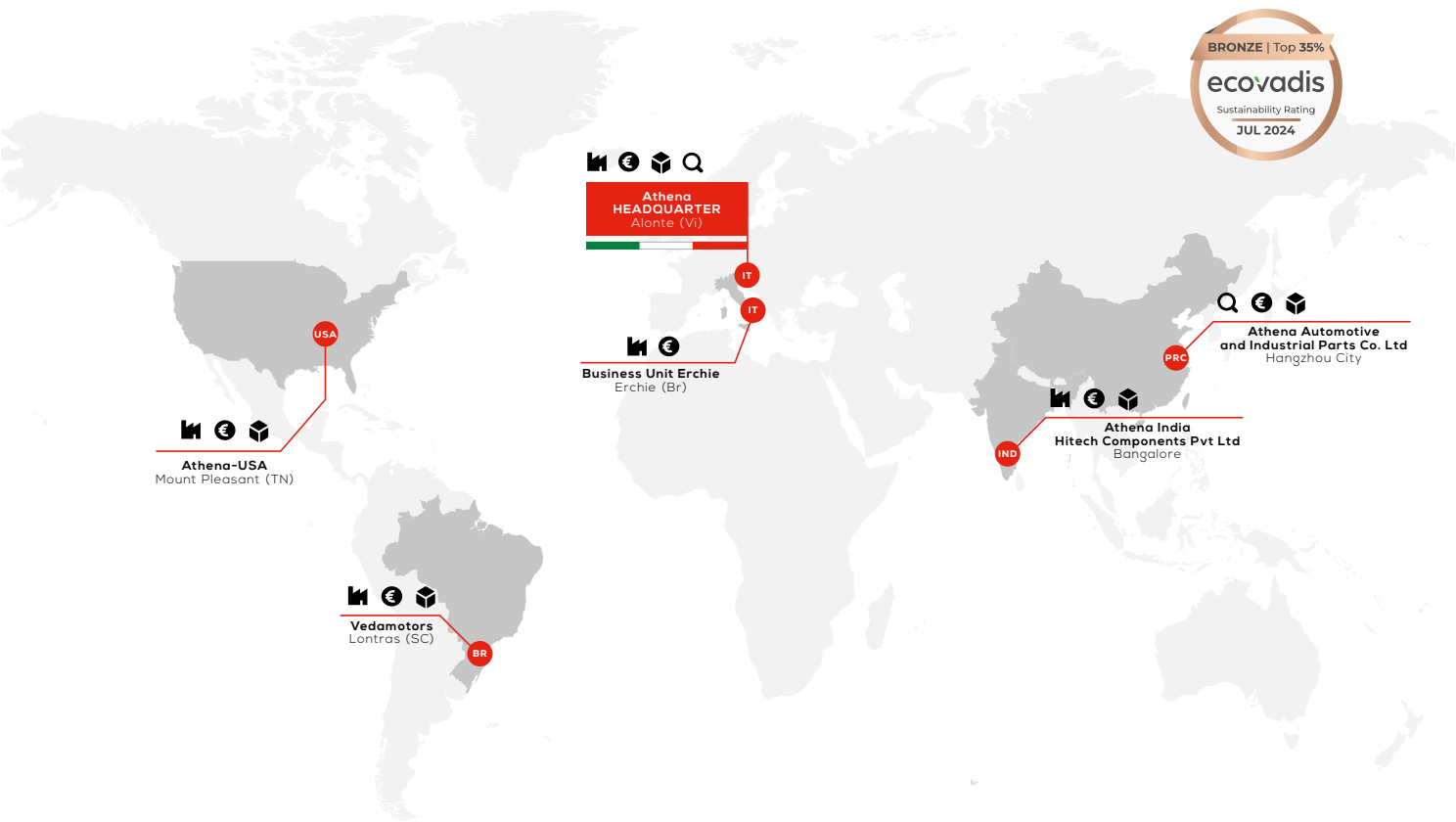
OEM GASKETS FOR ELECTRIC VEHICLES

**ADVANCED TECHNOLOGIES FOR
TAILOR-MADE SOLUTIONS**



THE IDEAL PARTNER FOR EVERY MANUFACTURER

Athena is a **family-owned** Italian company with a **strong global presence**, known for its consistent commitment to **quality** and **sustainable innovation**.



900+
EMPLOYEES WORLDWIDE

Manufacturing plants  Logistics hubs 
Strategic sourcing centers  Sales offices 

WHY CHOOSE ATHENA

With over 50 years of experience, Athena excels in the design and production of sealing systems and OEM technical articles, providing high-performance and reliable customised solutions for various industrial sectors, including the automotive industry.



RESEARCH, CO-DESIGN, AND
CUSTOMISED PRODUCTION



FINANCIAL RELIABILITY
CERTIFIED BY CRIBIS



IATF AND ISO QUALITY
CERTIFIED



GLOBAL PRODUCTION
CAPACITY



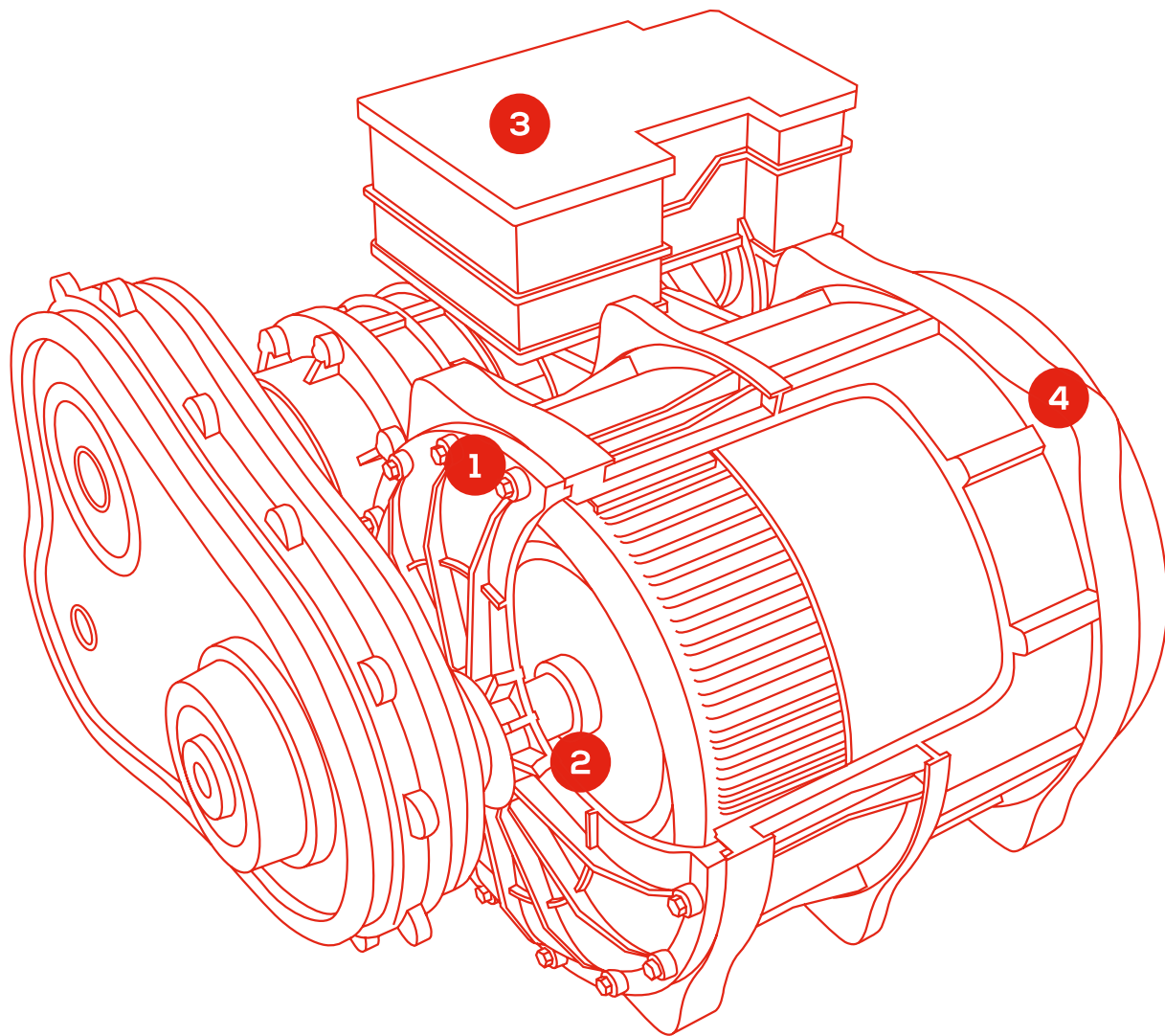
SOCIAL RESPONSIBILITY &
CARBON FOOTPRINT



+ 50 YEARS OF RESEARCH
AND KNOW-HOW

GASKETS FOR E-AXLES

We design and manufacture **custom seals for electric axles and vehicles**, employing high-performance materials, specialized manufacturing processes, and advanced simulation testing to ensure full compliance with **OEM requirements**.



1

METALLIC GASKETS WITH EMBOSSEMENTS

Compact Rubber-Coated Steel Gasket with Optimized Sealing

Thanks to specially designed embossed sealing beads, these gaskets ensure effective sealing on uneven surfaces. They provide uniform compression and resist to high pressures, vibrations, and thermal variations.

Customizable Core, Coating, and Embossed Profiles

Constructed with a metallic core, these gaskets are available in low-carbon steel or AISI 301 stainless steel. Both sides are coated with either NBR or FKM rubber. The embossed sealing bead profile can be customized in thickness, height, and width to meet specific requirements.

Main applications:

Ideally suited for differential housings and gearbox flanges in high-pressure systems.

Chemical Resistance

Materials have been tested to ensure excellent chemical compatibility with transmission oils and coolant fluids.

Mechanical Resistance

Materials have undergone creep relaxation and compression recovery tests, ensuring long-term sealing performance and stability.



2

METALLIC FLAT GASKETS

Expanded Rubber-Coated Metal Gaskets for Sealing on Irregular Surfaces

Flat gaskets with expanded rubber coating on both sides. Optimized for applications such as cooling circuits.

Customizable Inner Metal Core

Available with aluminum or low-carbon steel core to ensure dimensional rigidity.

Chemical Resistance

Materials tested to ensure excellent chemical compatibility with transmission oils and coolant fluids.

Mechanical Resistance

Materials tested for creep relaxation and compression recovery to ensure stable and long-lasting sealing performance.

Custom Design & Co-Engineering

Solutions developed based on customer drawings and co-engineering, with materials and geometries tailored to meet specific technical requirements and dimensional constraints.



3

INVERTER'S GASKETS

Specific Compounds for Inverter Applications

We offer selected compounds for various application conditions, covering a temperature range from -40°C to +150°C. Available solutions include peroxide-cured EPDM, ideal for coolant fluids, as well as AEM and ACM compounds, resistant to mineral oils and chemical agents.

Silicone Gaskets for High-Temperature Applications

Also available in silicone compounds, these gaskets ensure compatibility with vegetable oils and coolants, providing self-extinguishing properties according to UL94 standards and offering excellent thermal resistance up to +250°C.

Certified Material Elasticity and Stability

Compression set and material flexibility are tested according to industry standards.

High-Precision Injection Molding

An ideal process even for complex geometries and thin wall thicknesses. It guarantees dimensional repeatability and high-quality finishes on every component.

Custom Design and Technical Support

Perfect for inverter modules, our gaskets can be customized according to material specifications, profiles, and application constraints.



4

CO-MOULDED RUBBER-METAL GASKETS

Rubber-to-Metal Overmolding for Oil-Immersed Applications

Our seals are manufactured through the direct bonding of rubber elements to aluminum or steel components, ensuring effective sealing performance and high structural integrity.

Vibration Damping and Tolerance Compensation

The elasticity of the rubber compounds, combined with the rigidity of the metal insert, allows for efficient vibration damping, compensation of misalignments, and surface irregularities, thereby enhancing stability and sealing capability even under dynamic operating conditions.

Selected Compounds for Thermal and Chemical Resistance

The primary compounds used include FKM (-15°C to +230°C), NBR (-25°C to +100°C), and ACM (-40°C to +150°C), making them ideal for oil-immersed applications across a wide range of operating temperatures.

Custom Design Based on Customer Specifications

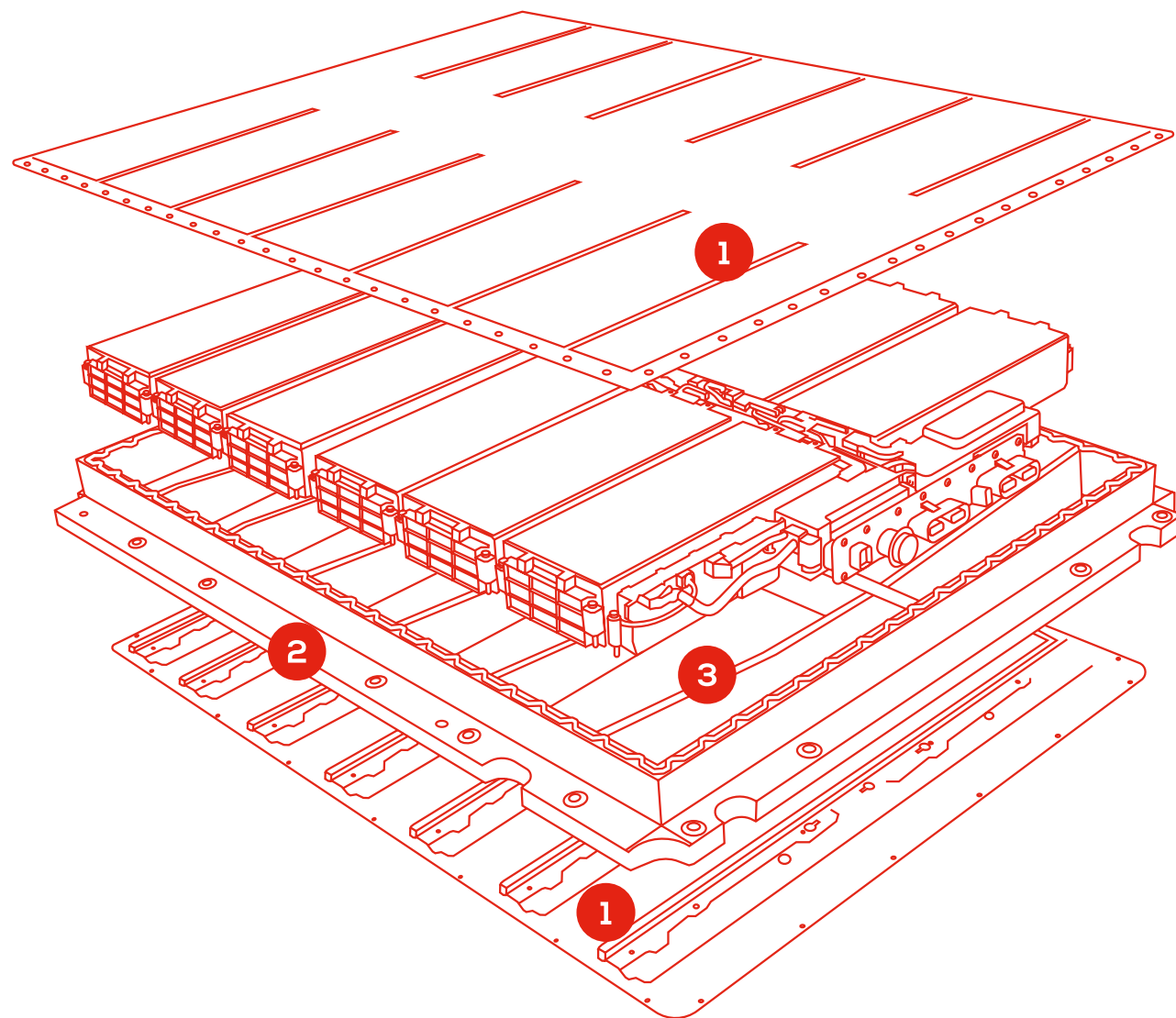
Each gasket is developed according to the geometry specified by the customer, ensuring perfect integration and consistent performance over time.

Durability and Reliable Performance

Our gaskets are engineered to maintain their functionality throughout the entire service life of the component, even in the presence of aggressive oils and under continuous mechanical stresses.

GASKETS AND PADS FOR BATTERIES & STORAGE

We design and manufacture custom components for electric vehicle batteries, including **insulators**, **thermal management solutions**, and **seals**. We employ advanced materials, precision manufacturing techniques, and rigorous simulation testing to **meet the highest OEM standards**.



1

SILICAFIRE ATH-10 SERIES Silicone Foam Gaskets

Foamed silica material offering excellent insulation and flame-retardant properties combined with strong resistance to extreme temperatures, UV, ozone, weathering, and corrosion. Ideal for sealing, insulation and shock absorption, it is transformed by Athena into custom-engineered gaskets and components through co-design with OEMs.

Main Features:

- Customizable product shapes, thickness and density
- Optimal insulation performance, with thermal conductivity (λ) ranging from 0.06 to 0.15 W/m·K
- Flame retardant performance certified to UL 94 V-0 and HF-1 standards
- Temperature range: -60°C ~ +250°C
- Cushioning & shock absorption capabilities
- Waterproof

Density: 200 ~ 1000 kg/m³

Thickness: 0,5 mm ~ 30 mm



2

SILICAFIRE ATH-11 SERIES Ceramic Silicone Foam Gaskets

Ceramic silicone material with excellent flame-retardant and environmental resistance, including to extreme temperatures, UV, ozone, weathering, and corrosion. Ideal for insulation, sealing, and shock absorption, it is customized by Athena into gaskets and components co-designed with OEMs.

Main Features:

- Customizable product shapes, thickness and density
- Extreme Fire Resistance: Withstand direct flame (800°C) for up to 10 minutes resistance
- Exceptional thermal insulation performance, with a thermal conductivity (λ) ranging from 0.06 to 0.15 W/m·K
- Flame retardant performance certified to UL 94 V-0 and HF-1 standards
- Cushioning & shock absorption capabilities
- Waterproof

Density: 450 kg/m³

Thickness: 0,5 mm ~ 10 mm



3

SILICAFIRE ATH-20 SERIES Thermal Conductive Silicone Pads

Thanks to its high thermal dissipation capability, this material enhances battery safety and performance. Athena transforms it into custom-engineered solutions for OEMs: gaskets, insulators, and high-value technical components.

Main Features:

- Customizable product shapes, thickness and density
- Optimal dielectric strength with a withstand voltage of 6 ~ 12 kV/mm
- Provides excellent thermal conductivity, ranging from 1.5 ~ 2 W/m·K
- Classified as UL 94 V-0 for flame retardancy
- Self-adhesive surface on both sides

Density: 2,1 ~ 2,5 g/cm³

Thickness: 0,15 mm ~ 5 mm

OUR EXPERTISE & KNOW-HOW

R&D SERVICES



CUSTOMIZED GASKETS

We design and manufacture **custom gaskets** in materials such as rubber-coated sheet metal, rubber, and silicone, to meet specific application requirements. We work closely with our clients in a **co-design process** to develop optimal solutions, ensuring **high performance and durability** in every application.



SILICAFIRE GASKETS FOR BATTERIES PROTECTION

Silicafire gaskets **protect the internal components** of batteries, **improve mechanical strength**, and ensure **thermal stability**. Silicafire insulation materials provide fire resistance and enhance efficiency, while thermoconductive materials optimize thermal management, reducing the risk of damage from overheating.



FEA ANALYSIS

Through Finite Element Analysis (FEA), we provide a range of **simulation solutions** to assess the system's complexity, considering applied **loads** and specific **operational conditions**, thereby ensuring the achievement of the client's defined performance and design objectives.



RAPID PROTOTYPING

Leveraging our advanced **laser cutting, molding, waterjet cutting, and cutter technologies**, we offer rapid prototyping services that significantly reduce development and testing times for new products.

QUALITY CONTROL

Quality system management is crucial for Athena, as it allows us to **optimize processes, increase organizational efficiency** and to ensure consistent delivery of **high-quality products and services**.



INTERNATIONAL SITES FOR THE INDUSTRIAL SECTOR

ATHENA HQ

Via Delle Albere, 13,
36045 Alonte - Vicenza (Italy)
+39 0444 727272
commerciale@athena.eu

VEDAMOTORS

Rodovia BR 470, 2795 - KM 129
Lontras - SC - 89.182-000 - Brasil
vedamotors@vedamotors.com.br
+55 47 3411-0500

ATHENA INDIA HITECH COMPONENTS PVT LTD

20B, 2nd Main, 2nd Phase Peenya Industrial Area
Bangalore 560058 - India
info@athena-india.com
+91 80 28395085

ATHENA HANGZHOU AUTOMOTIVE AND INDUSTRIAL PARTS CO.LTD

No. 260, 6th Street, Baiyang Community,
Building 15, 1st floor, Economic and Technological
Development Zone, 310018 Hangzhou - China
l.bonazzi@athena-hangzhou.cn
+86 0571 8776 1085

ATHENA USA

1540 B North Main St.
Mount Pleasant, TN 38474 - USA
sales@scegaskets.com
office@athenausa.com
800 427 5380



athena.industries
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