



# **Global expert**

in electrical power and advanced materials, Mersen partners companies around the world that drive today's industry and shape tomorrow's society.

A committed partner and core technology provider.

— €879m in consolidated revenues in 2018

**\_\_\_6,900** employees

Present in 35 countries

# our goal is to help you meet the technological challenges

that drive you forward and that shape our world. Whatever the sector and whatever the stakes, we draw on a broad range of products and services to help you define and design custom-fit solutions and processes.

Day after day, we deliver world-renowned expertise in electrical power and advanced materials to industry groups looking to develop their activity and meet tomorrow's technological challenges.





# Creating collective value

Mersen's two specialist business segments deliver expert solutions with the same exacting standards and focus for a range of different sectors including wind and solar power, electronics and fiber optics, rail, aerospace and aeronautics transportation, corrosive chemicals, process industries and more. We work hand-in-hand with industry manufacturers and operators to make tomorrow's solutions more efficient and more reliable. Wherever technologies are advancing and innovating, you'll find a little bit of Mersen.







# Solutions that make a difference

Pushing boundaries is second nature at Mersen. For more than a century, we have provided industry players the world over with innovation to **improve** their product performance and services. Innovation that meets the constraints of technological change as companies move further and faster. Whether you need to cut costs, streamline your efficiency and the useful lives of your consumables, or even respond to changing consumer habits and preferences and the boom in the green economy, Mersen has a full spectrum of innovation in the service of industrial performance.



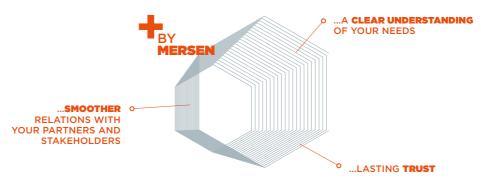




# A core provider

Creating value for our clients means understanding their needs, their challenges and their constraints. It also means understanding their environments, both geographical and competitive. With more than 50 industrial sites in 35 countries, Mersen works side-by-side with its clients at the heart of its markets, developing strong ties to offer made-to-measure, high value-added solutions at every level. A relationship of trust in transforming challenge to opportunity.





# PERFORMANCE BY MERSEN

Efficiency
Competitiveness
Long life
Reliability
Protection

# A comprehensive offer

GRAPHITE
<b>SPECIALTIES</b>

ANTI-CORROSION EQUIPMENT

POWER TRANSFER TECHNOLOGIES

ELECTRICAL PROTECTION & CONTROL

SOLUTIONS FOR POWER MANAGEMENT

- Unique expertise in high-performance materials and solutions for high-temperature and extreme environment production or operation
- Graphite, carbon/carbon composite, carbon insulation, flexible graphite and silicon carbide (SiC) solutions for the process, aerospace, solar PV and electronics industry









NO. 2 WORLDWIDE
IN HIGH-TEMPERATURE
ISOSTATIC GRAPHITE
APPLICATIONS

ISOSTATIC AND EXTRUDED GRAPHITE



Graphite electrode for electrical discharge machining



Die for continuous casting of copper alloy, precious metals and cast iron



Support for hot-glass handling



Wafer holder for substrates in semiconductor manufacturing



Polysilicon manufacturing electrode

RIGID AND FLEXIBLE CARBON INSULATION



Rigid CBCF insulation for industrial furnaces



Soft-felt insulation for polysilicon furnaces



soft-felt cylinderform insulation for heightened performance



permeable electrodes for energy storage



Rigid CBCF insulation for high-temperature sintering furnaces

CARBON/ CARBON COMPOSITE



Brake disk for aircraft



Component support for high-temperature furnaces



Accessories

SSIC SINTERED SIC



Structural component for space and ground telescopes



Mirror for space and ground telescopes



Plate for continuous flow chemical reactors



Mirror and laser scanner for industrial applications

FLEXIBLE GRAPHITE



High-performance static graphite seals



Thermal protection and insulation



Dynamic graphite seals

# ANTI-CORROSION EQUIPMENT

- Design and manufacture of process equipment to resist corrosive environments in the chemicals industries: graphite, silicon carbide, noble metals (tantalum, zirconium, titanium), nickel alloys and fluoropolymers
- Services and maintenance









NO. 2 WORLDWIDE
IN GRAPHITE-BASED
ANTI-CORROSION
EQUIPMENT

ENGINEERING SYSTEMS







- HCI production
- HBr production
- Dilution and concentration of acids
- Other systems

HEAT EXCHANGERS



# Block form:

- in graphite
- in silicon carbide



### Tubular form:

- in graphite
- in silicon carbide
- in tantalum
- in zirconium
- in titanium
- in nickel alloy

COLUMNS, REACTORS AND PRESSURE VESSELS







- In graphite
- PTFE lined
- CL-Clad\* tantalum cladding
- In zirconium
- In titanium
- In nickel alloy

PIPING, BELLOWS AND ACCESSORIES







- PTFE lined
- PFA lined
- In tantalum
- In zirconium

BURSTING DISKS







In graphite

- Technical solutions for motor applications and generators
- Customized solutions and dedicated enhancement and reengineering services
- On-site expert assessments
- Motor maintenance services









NO. 1 WORLDWIDE
IN BRUSHES AND BRUSH-HOLDERS
FOR INDUSTRIAL ELECTRIC
MOTORS

BRUSHES AND BRUSH-HOLDERS



For wind turbines



For DC motors



Traction motor brush-holders



Plug sets for thermal power plants

BRUSH ROCKERS & SLIP RING ASSEMBLIES



For generators and alternators



For asynchronous motors



For hydro power generators



For hoisting

**CURRENT COLLECTORS** 



Contact strips



3<sup>rd</sup> rail Current collector deviceshoes



Sliding contacts

**COMPLETE SOLUTIONS** 



Pitch slip rings for wind application



MERSEN DustCollector



MERSEN Total Monitoring



Wheel flange lubricating sticks & applicators

# ELECTRICAL PROTECTION & CONTROL

- A full range of fuses and fusegear systems and devices
- Surge protection systems and devices









NO. 2 WORLDWIDE IN INDUSTRIAL FUSES

UL FUSES AND FUSEGEAR



Bladed fuses



HSJ high-speed fuses



Medium voltage fuses



Medium voltage controllable fuses

IEC FUSES AND FUSEGEAR



Helioprotection® gPV fuses



Low voltage fuse systems



Low voltage AC and DC switches



DIN and French standard high voltage fuses

SURGE PROTECTION DEVICES



Power Line SPDs -NEMA UL/CSA



Power Line SPDs -DIN Rail IEC/UL/CSA, PV



**LED Lighting SPDs** 



Surge Protection Components

POWER TRANSFER FOR RAIL VEHICLES



Earth return current unit



3<sup>rd</sup> rail current collector device



Fuse box



On-board switch

# SOLUTIONS FOR POWER MANAGEMENT

 Passive and hybrid components for high-performance power conversion and batteries systems' improved safety and reliability









NO. 1 WORLDWIDE
IN THE SUPPLY OF PASSIVE AND HYBRID
DEVICES FOR POWER ELECTRONICS
AND BATTERY SYSTEMS

OVERCURRENT PROTECTION FOR SEMICONDUCTORS AND BATTERIES: HIGH-SPEED FUSES & HYBRID SYSTEMS



Standard and high performance power converter protection



Traction and railway converter protection



E-mobility protection



Hybrid DC protective devices

COOLING SOLUTIONS FOR POWER ELECTRONICS



Air heat-sink



Embedded heat-pipe air heat-sink



Liquid cold plate



Heat-pipe cold wall

BUSBARS



Laminated busbar for high-voltage inverters



Laminated busbar for high-frequency drives



Smart monitoring busbar for battery packs



Backplane power distribution laminated busbar

CAPACITORS



Electrolytic capacitors



Film capacitors



Customized capacitors, for ex. capacitor bank on laminated busbar





**6,900** employees in **35** countries

# A balanced Governance model

Mersen's Board of Directors and executive management are committed to acting in the best interests of the Group and its stakeholders and to upholding the highest standards of ethics and transparency.

# Ethical practices for an exemplary model

Mersen's Code of Ethics applies individually and collectively to all of the teams and officers that make up the Group's ecosystem around the world.

# A reference framework and commitment to progress

As a signatory of the United Nations Global Compact since 2009, Mersen policies and actions are guided by the organization's principles and directives.

# Develop innovative and sustainable products

Mersen is committed to engaging all of its teams in the search for solutions that ensure the thriving development of green energy and green industry and that optimize the ecological footprint of its products.



# **GROUP HEAD OFFICE**

### **MERSEN**

Tour EQHO - 2 avenue Gambetta CS10077 F-92066 LA DÉFENSE CEDEX Tel: +33 (0)1 46 91 54 00

## **REGIONAL HEAD OFFICES**

### **GERMANY**

Talstrasse 112 60437 Frankfurt/Main (Kalbach) Tel: +49 (0) 695 0090

# **CHINA**

Unit 4604, Park Place, No. 1601 Nanjing Road West, Shanghai 200040 Tel: +86 (21) 6135 6886

### **UNITED STATES**

### **ELECTRICAL POWER**

374 Merrimac Street Newburyport, MA 01950 Tel: +1 978 462 6662

### ADVANCED MATERIALS

400 Myrtle Avenue Boonton, NJ 07005 Tel: +1 973 334 0700

### **INDIA**

No. 5 Bommasandra Industrial Area - Annekal Taluk Bangalore, Karnataka - 560099

Tel: +91 80 3094 6121

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GLOBAL EXPERT
IN ELECTRICAL POWER
AND ADVANCED MATERIALS

