

# PROCESS INDUSTRIES CEMENT

**ELECTRICAL  
SOLUTIONS FOR**

- **DC MOTORS**
- **ASYNCHRONOUS MOTORS  
WITH WOUND ROTORS**



# MERSEN

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## A world leader committed to Process Industries

- A world leading supplier of power and signal transfer solutions, Mersen contributes to the well functioning of cement plant equipment (grinders, ventilators, rotary furnace motors, etc.). We provide cement plants, maintenance and repair specialists with high quality engineered solutions tailored to various operating conditions (temperature, cement dust, sand, etc.), designed and tested for reliability and optimum performance.

## Expertise, Knowledge and Experience

- Our company has been working with electrical rotating machinery for more than 100 years. We know motors and generators very well and this is one of the reasons why our customers come to us. They know that we provide solutions that are controlled through the complete product life cycle (development, manufacture of materials, product design, quality control, distribution, technical expertise and training). We offer them reliable solutions and the benefit of our extensive knowledge, years of experience and strong expertise.

## Solution-orientated approach and R&D policy

- We work in partnership with our suppliers to create the solution needed to improve the performance of our customers' applications. This solution-orientated approach drives our Research & Development facilities and enables us to provide innovative solutions. Our Research & Development teams are international and combined with our comprehensive test facilities work on a wide range of subjects for our sectors of activity, allowing us to meet today the market requirements of tomorrow.

## Services

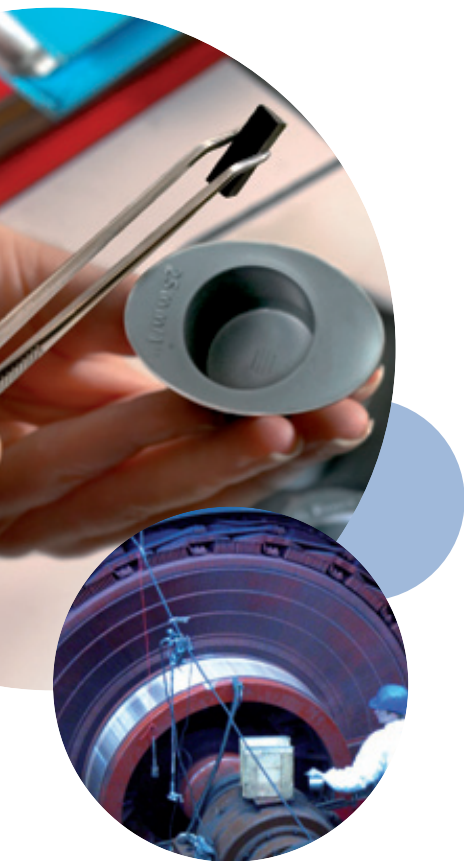
- On the 5 continents, our engineers and technicians provide specific services to optimize the performance of cement plants:
  - On site services (cutting, grinding, bevelling and undercutting of commutators, etc.)
  - Diagnostics (commutator and slip ring profile analysis, surface roughness and carbon brush pressure measurements, axial and circumferential stagger analysis, carbon brush studies considering the machine and its environment)
  - Technical support
  - Training
  - Specifically designed measuring tools

## Quality and Environment

- Our 56 manufacturing facilities are registered to ISO quality and environmental standards. This ensures that we can provide our customers with manufacturing sites implementing quality manufacturing processes and respecting environmental standards.

## Sustainable development

- Here at Mersen, we believe it is possible to bring together our company's interests while respecting environmental issues and social progress. For this reason, we make sure that an environmental approach is adopted during the life cycle of every solution. As an example, we have developed lead free carbon brushes and can offer recycling programs to our customers.



# HIGH QUALITY ENGINEERED SOLUTIONS

● Our solutions are based on over 100 years of experience gained in the field. Working in different countries, applications and environments, we know what works and how to improve performance. We provide our customers with a large range of solutions, each adapted to a specific need. Our strength is our experience, our knowledge and our ability to design solutions paying attention to detail in every step of the manufacturing process.

● Our solutions for cement plants are carefully selected from high quality materials and are manufactured on cutting-edge equipment (CNC machines, broaching machines, computer aided measuring instruments, high precision microscopes...). They benefit from high precision assembling and respect industrial international standards (IEC, NEMA, ASTM, SAE, DIN...).

● We test our solutions for optimum performance in a variety of load and environmental conditions, helping our customers to reduce their maintenance costs. We have the knowledge to reengineer existing solutions and create new maintenance tools to improve the performance of cement plant equipment.

Aside from electrical solutions, Mersen can provide you with a large range of mechanical, sealing and equipment protection solutions.

Mersen is a global Expert in materials and solutions for extreme environments as well as in the safety and reliability of electrical equipment.

## Our markets:

- **Energy:** • Wind • Hydro • Photovoltaic • Nuclear Power • Conventional Thermal Power • Oil & Gas
- **Transportation:** • Railways • Aerospace & Aeronautics • Ports & Marine • Electrical Vehicles
- **Electronics:** • Polysilicon • Power Electronics • Semiconductors • Compound Semiconductors • Optical Fiber Production
- **Chemicals & Pharmaceuticals:** • Organic Chemicals • Inorganic Chemicals • Fine Chemicals & Pharmaceuticals
- **Process industries:** • Metallurgy • Mining • Oil & Gas • Cement • Pulp & Paper • Rubber & Plastic
  - Water & Wastewater Treatment • Assembly Manufacturing • Mould Industry • Glass Industry • Sintering
  - Furnace Industry
- **Other Markets:** • Commercial • Residential • Data Communication • Elevators • Forklifts



# SOLUTIONS & SERVICES FOR CEMENT PLANTS

## SERVICES

- Motor & maintenance services
- Training
- Tools & measuring devices

## 2. RAW MATERIAL CRUSHING



Carbon brushes



Brush-holders

## 1. RAW MATERIAL TRANSFER



Carbon brushes & brush-holders for conveyors



## 3. RAW MATERIAL GRINDING



Carbon brushes



Brush-holders



Slip ring assemblies

RAW MATERIAL EXTRACTION

2

1

3

5

4

6

7

## 7. CEMENT PROCESS & STORAGE



Carbon brushes, brush-holders & slip ring assemblies for grinders



## 6. CLINKER COOLING & TRANSFER



Carbon brushes & brush-holders for extraction & cooling ventilators



## 5. POWDER COOKING & CLINKER PROCESS



Carbon brushes & brush-holders for hot mills





#### 4. POWDER TRANSFER



**Carbon brushes & brush-holders**  
for extracting ventilators

## CARBON BRUSHES

- Selected materials: graphite, copper, silver...
- Lead free carbon brushes available
- High electrical conductivity
- High quality tamping
- Optimized cable dimensions
- Specific design
- Brush wear warning systems
- Running in different loads
- Respect of collectors & slip ring assemblies
- Good commutation
- Long life

## BRUSH-HOLDERS

- Wide range: metric & imperial systems
- Moulded
- Pressure system: wound or coil springs
- Single or multiple boxes
- Side attachment on arms
- Brush-holder attachment arms
- Brush wear warning systems
- Complete brush-holder & rocker rings
- Selected materials: non-ferrous alloys, anti-corrosion...
- Customized designs
- Die casting
- Stamping
- Reinforced plastic injection
- Metal guide rails

## SLIP RING ASSEMBLIES

- Selected materials: non-ferrous alloys, stainless steel, dielectric materials...
- Customized designs
- Reinforced plastic injection
- Finished product compliance: balance, dielectric testing

## SERVICES

### MOTOR & MAINTENANCE SERVICES

- Expertise
- Diagnostics
- On site intervention
- Refurbishing & re-engineering of solutions and components

### TRAINING

- Led by technical experts
- According to a defined curriculum or adapted to specific needs
- Transfer of skills
- At either our location or our clients'

### TOOLS & MEASURING DEVICES

- CL-Profiler
- ComPro2000™
- Grinding stones
- Mica undercutters
- Dynamometers
- Stroboscopes
- Alarm boxes
- Roughness meters
- Grinders & accessories
- Saws
- Scrapers
- Slotting files



## A GLOBAL PLAYER

Global expert in materials and solutions for extreme environments as well as in the safety and reliability of electrical equipment, Mersen designs innovative solutions to address its clients' specific

needs to enable them to optimize their manufacturing process in sectors such as energy, transportation, electronics, chemical, pharmaceutical and process industries.

[www.mersen.com](http://www.mersen.com)