

Safety first Quality always



Thermojet



Thermojet began in the year **2000**, when the engineer and entrepreneur Ricardo Leite Passos gathered a group of colleagues to acquire the **Special Heating and Cooling Division** of the company **Brasimet**, where they worked.

The colleagues became partners. They brought with them a remote history, from the **Lindberg** company, which in **1977** had introduced convective heating in South America, and had been incorporated by Brasimet.

Services

Thermojet has specialized teams in several applications of Thermal Engineering, as well as consultants and **innovation** partners for the development of **tailor-made solutions**:

- Controlled drying and heating
- Accelerated or controlled cooling
- Mobile system for monitored oxyfuel combustion
- Monitored hot-hold
- Expansion and contraction control
- Monitored draining and filling of glass ovens
- Monitored thermal comfort
- Generation of hot gas at specific flow and temperature
- Refractory diagnosis
- COBRA: Management of refractory preservation
- *Jetwelding*® ceramic welding
- Heat treatment
- Computational simulation of heat exchange
- Tailor-made special services

Global presence



Having units in Brazil, Colombia and Argentina, Thermojet serves the whole **South America, Central America and the Caribbean**. It is also based in **China** and represents Glass Service and Flammatec companies based in the **Czech Republic** and global reference in burners, accessories and advanced solutions for the glass industry.

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GLASS SERVICE

www.gsl.cz

FLAMMATEC

www.flammatec.com

PIGS AND ACCESSORIES FOR PIPELINE

4 Pipe - www.4pipe.com.br



Grupo
THERMOJET®



THERMOJET®

Coke

- Thermal uniformity on starting-up 10.000+ ovens
- Thermal comfort
- Refractory maintenance

Reduction

- **Featured:** we removed by fusion the pig iron solidified in a 2.8 MTPY blast furnace

Casting

- Refractory campaign
- Fuel consumption

Lamination

- Uniform heat-up among the Preheating, Heating and Soaking zones

Mining and pelletizing

- Optimized drying of long furnaces
- **Innovation:** -50% of the heating time of pelletizing furnaces

Non-ferrous

- Cooling, Thermal comfort, Drying e Heating



Glass

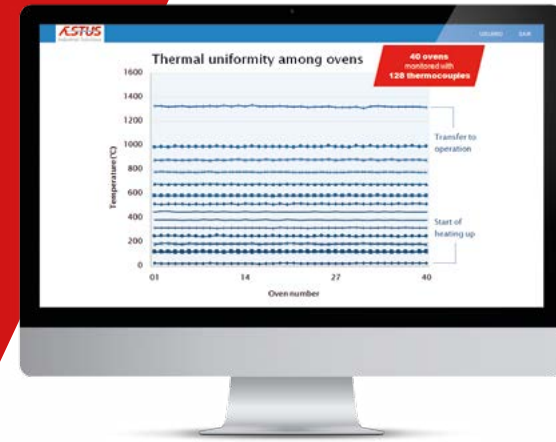
- Cullet filling, Draining, Heating, Cooling
- Expansion and contraction control

Cement

- Hot air to start flour production
- Supervisory system

Petrochemical

- On-site heat treatment for equipment of all sizes



REDUCTION OF HEATING TIME BY ABOUT

40%

HOT AIR AT THE DESIRED FLOW RATE AND TEMPERATURE



SERVICES AND SOLUTIONS

MORE THAN 10,000 HEATINGS PERFORMED

Refractory drying and heating

- Technical staff with about 40 years of experience
- Hundreds of thermocouples analysed in real time

Cooling

- Controlled: rates of up to 1°C/h
- Accelerated: high flow fans

Oxifuel

- Start-up or bringing back into operation obstructed blast furnaces
- Removal by fusion of the solidified pig iron
- Cleaning of torpedo cars and ladles

Hot-hold

- Technology to reduce fuel consumption

Expansion and contraction control

- Teams ≈40 years of experience
- Full support: from the curve to the adjustment of tie rods and pushers

Hot air

- Start-up of units
- Drying of raw material

Refractory diagnosis

- Ranking based on the experience of our experts at coking plants from South America, Canada and the United States

Jetwelding® Ceramic welding

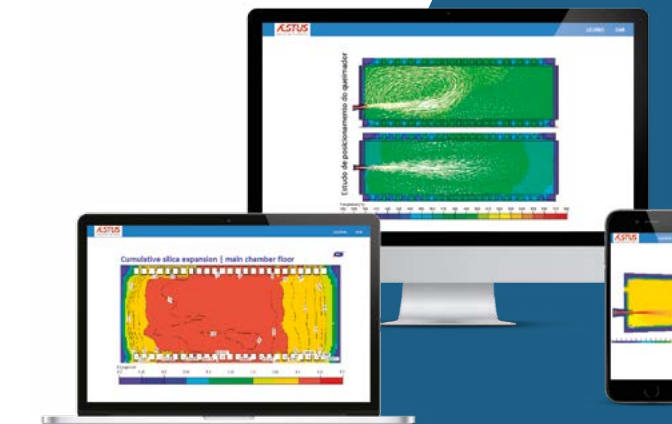
- Operadores com histórico de reparação de mais de 1.200 fornos

On-site heat treatment

- For equipment of all sizes

Tailor-mad solutions

Contact us.



ESTUS

Heating and cooling stations

- Retrofit or custom manufacturing
- More efficiency, shorter execution time

Thermal comfort

- Intense refrigerated air circulation
- Controlled humidity
- Expressive reduction of thermal stress indexes
- Portable modules

Burners

- Characterization
- Regulation
- Custom burner development

Refractory maintenance

- *Rating* and remaining life
 - Degradation rate
 - Schedule of recommended actions
 - Unlimited storage
- Software COBRA:** Coke Oven Batteries Refractory Assistant

Combustion

- Combustion diagnosis
- Fuel interchangeability
- Emission control: NOx, CO, CO₂



Thermal assessment

- Thermal diagnosis
- Energy balance

Simulation

- Refinement of processes and equipment
- Computational Fluid Dynamics Software, CFD, developed and implemented since 1990 by partner Glass Service, Czech Republic