



Engineering and technologies for industrial combustion

Customized solutions designed to improve the efficiency, flexibility and reliability of thermal processes.

Integrated engineering across the project lifecycle

FLAME brings together process expertise, customized development, equipment and technical support to meet the specific conditions of each plant.



FLAME INTEGRATION

Process, fuels, engineering and equipment connected in one integrated solution.

Combustion solutions for a wide range of industrial processes

Experience applied to different operations and thermal conditions, with solutions developed for the needs of each industry.



Fertilizers



Steelmaking



**Cement and
Lime**



**Sugar and
Ethanol**



Petrochemicals



Mining



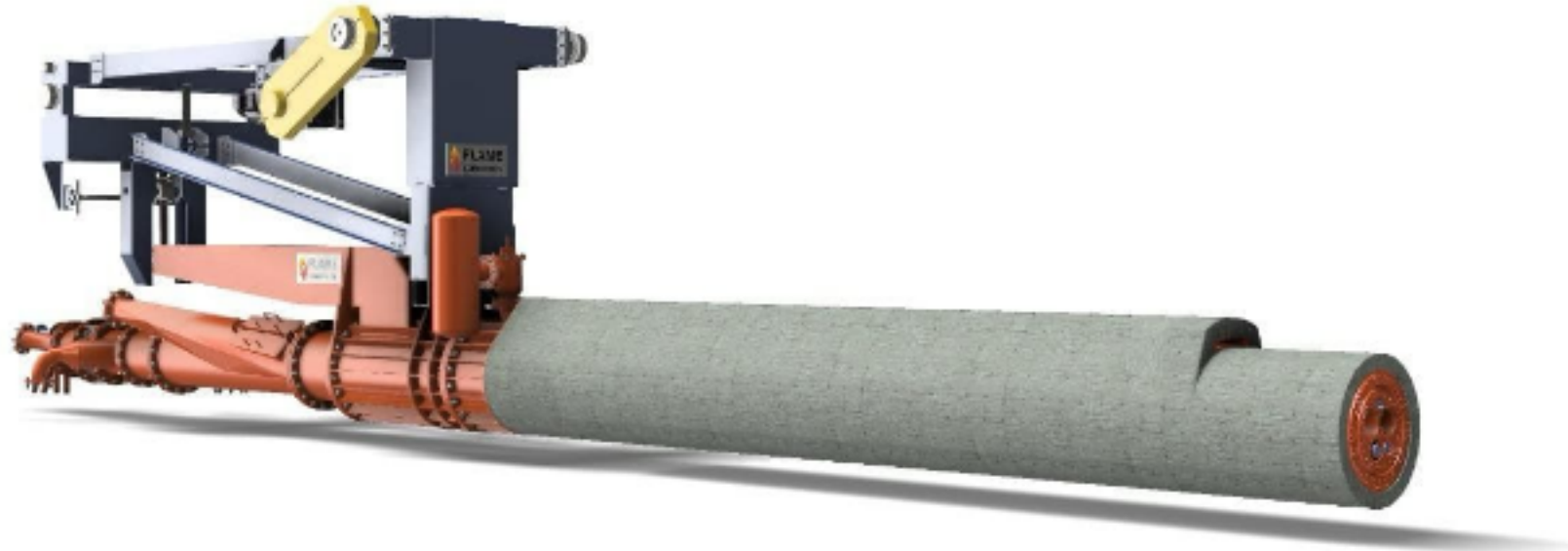
Metallurgy



Pulp and Paper

Customized engineering and equipment for processes requiring efficiency, stability and fuel flexibility.

SMART FLAME adapts the flame to the kiln, product and fuel



SMART FLAME

Rotary kiln burners with three individually controlled adjustment air flows, designed to provide flexibility in flame shape and characteristics.

- Up to 150 Gcal/h
- Multi-fuel operation
- Pulverized solids, liquids, gases and waste-derived fuels
- Local adjustment or automated remote operation
- Applications in gray clinker, white clinker, lime and pozzolana

Operational flexibility while maintaining efficiency, emissions control and process stability.

SMART CAL FLAME delivers combustion in the optimal process zone



SMART CAL FLAME

Customized burners for preheater towers and calciners, designed to promote intensive mixing between gases and fuels.

- Conventional and alternative fuels
- SLC, ILC, RSP, DDF and other applications
- Lower CO and greater process stability
- Build-up formation control
- Simplified installation and maintenance
- Configuration for DeNOx operation

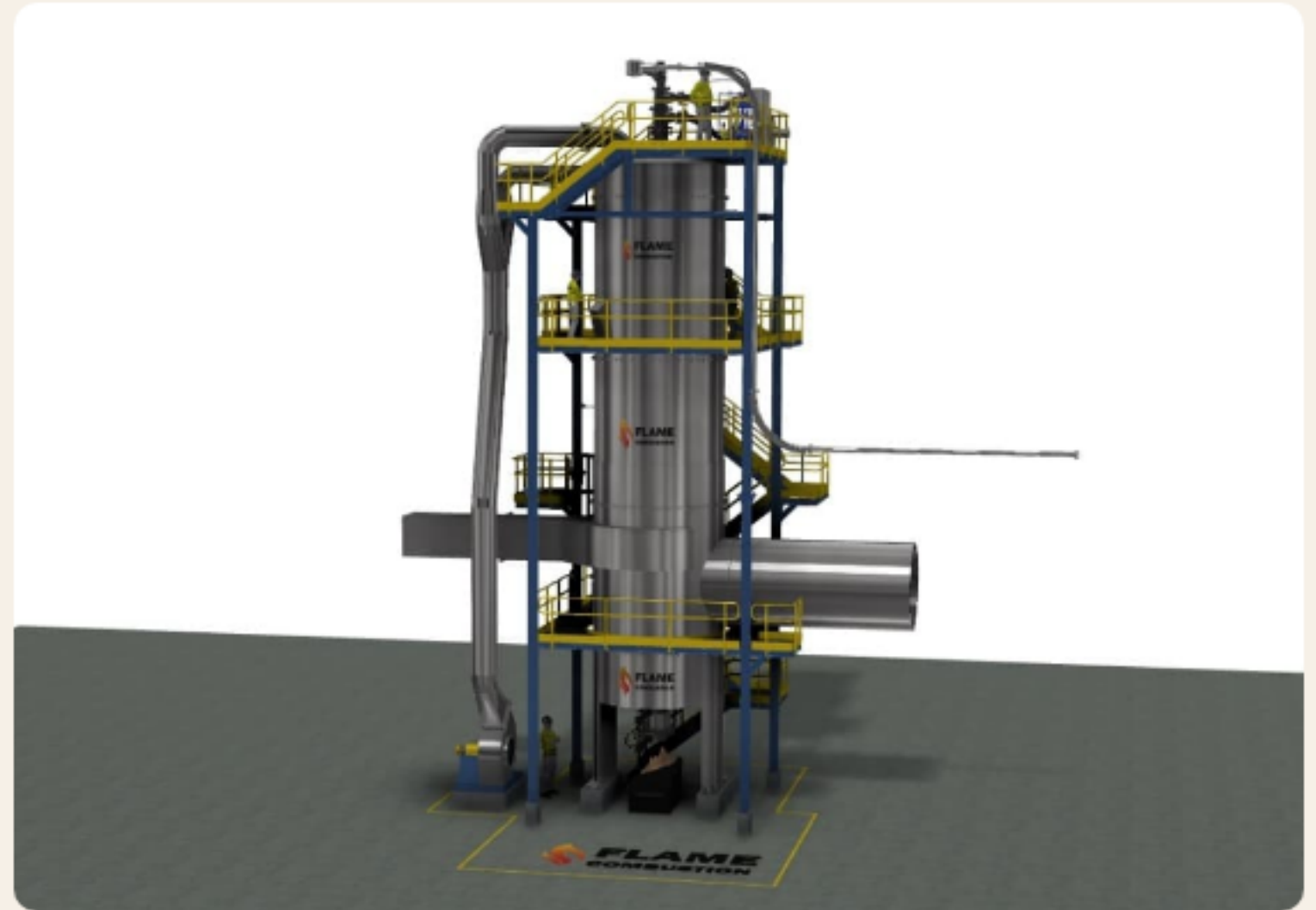
Technology operating in several countries, with development supported by CFD simulations.

SMART FLAME HGG supplies hot gases under the conditions required by the process

SMART FLAME HGG

Direct-fired generators customized for flow rate, temperature, recirculation and operating mode.

- Up to 50 Gcal/h
- Vertical or horizontal body
- Up to 100% pulverized solid fuel
- Continuous flame supervision
- Automated operation and redundant safety systems
- Applications in fuel and raw meal grinding, and slag or ore drying



Also suitable for modernizing existing generators and converting them to lower-cost fuels.

SMART HANDLING SYSTEMS integrates fuel handling with plant control



SMART HANDLING SYSTEMS

Customized systems for fuel handling, dosing, storage, conveying, control and monitoring.

- Solid, liquid and gaseous fuels
- Valve trains and pressure-reduction stations
- Filtration, pumping and heating
- Dosing and pneumatic conveying
- Silos, tanks, PLC and HMI
- Integration with existing facilities
- Compliance with NBR, NFPA and DIN standards

For gases, configurations up to 72,000 Nm³/h - higher flow rates available upon request.

Spare parts preserve system reliability and operational continuity

Customized components for maintenance, modernization and the continued operation of industrial combustion systems.



SPARE PARTS & COMPONENTS

Supply tailored to the specific conditions of each piece of equipment and process.

- Internal burner components
- Burner heads and combustion chambers
- Pipes, distributors and injection elements
- Parts for maintenance, retrofits and upgrades

Compatibility, operational reliability and extended equipment service life.

Engineering and support throughout the entire project lifecycle

Continuous support from the initial assessment through maintenance and modernization of systems in operation.

01

BEFORE INVESTMENT

Feasibility studies
Fuel comparison
Thermal and CFD simulations
Risk and return analysis

02

DURING IMPLEMENTATION

Multidisciplinary engineering
Installation and commissioning
Technical documentation
Operational training

03

DURING OPERATION

Diagnostics and adjustments
Maintenance and technical support
Retrofits and upgrades
Spare parts and components

CONSULTING AND ENERGY TRANSITION

Assessment of costs, availability, thermal performance, safety and operational impacts to support decisions on new fuels.

Experience recognized by leading industrial groups

Companies served by FLAME





DIRECT CONTACT

Let us understand the process before proposing the solution.

Talk directly with the team best suited to your project needs.



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