

**SARRALLE OFFERS THE FULL
HYDROGEN SOLUTION**

sarralle[™]

Environment & Energy

The future as BUSINESS OPPORTUNITIES for
"Hydrogen Technologies"

hydrogen@sarralle.com



SARRALLE OVERVIEW

Founded in 1965, and nowadays with more than 55 years' experience on international projects, SARRALLE is your partner in the Environment, Energy & Steel Worlds.

We are an innovative Design, Engineering, Manufacturing and Installation company, with more than 700 dynamic, highly-qualified and multicultural employees.



Steel Melting Plant

- Scrap Cleaning Machine
- Electric Arc Furnaces (AC/DC EAF)
- Secondary Metallurgy (LF/VD-VOD/VIC/RH)
- Continuous Casting Machines (CCM) billet, bloom and slab
- Fume Extraction Systems (FES)
- Waste Heat Recovery System
- Material Handling Systems (MHS)
- Hydrogen Technologies
- Water Treatment Plants
- Electrical, Control & Automation
- Auxiliary Equipments
- Spares & Service Solutions

ABOUT SARRALLE

700 EMPLOYEES

Dynamic, highly-qualified and multicultural team.

4 BUSINESS LINES

Environment, Energy and Steel sectors.

10 LOCATIONS

Spain, Italy, USA, Mexico, UAE, India, China.

OWN MANUFACTURING FACILITIES

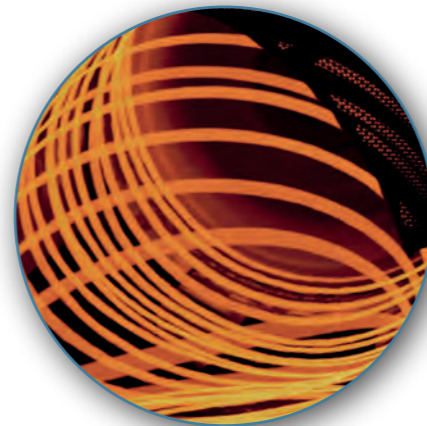
Europe and India

TAILORED SOLUTIONS

Greenfield or Brownfield

TECHNOLOGY & INNOVATION

Constant research for smarter, automated, environment friendly, efficient and safe plants.



Rolling Mill

- Medium Section Mills
- Heavy Section Mills
- Merchant Bar Mills (MBQ) / Bar Mills
- SBQ Mills
- Wire Rod Mills
- Reheating Furnace (Green Hydrogen)
- Hot Charging System
- Water Treatment Plants
- Electrical, Control & Automation
- Spares & Service Solutions



WHY SARRALLE?

SERVICE

The best during and after sales service.

CLOSENESS

Direct relationship.

ADAPTABILITY & FLEXIBILITY

What do you need? We can adapt for you. Tailored solutions.

TECHNOLOGY & SUSTAINABLE SOLUTIONS

Our solutions and products with the latest technology.

COST EFFECTIVE

Best balance between the best technology with a correspondence price offer and perfect after sales.



Processing Lines

- Cut-to-length Lines (CTL)
- Slitting Lines (SLL)
- Recoiling and Inspection Lines
- Packaging Lines
- Pickling Lines
- Tension leveling Lines
- Electrical, Control & Automation
- Spares & Service Solutions

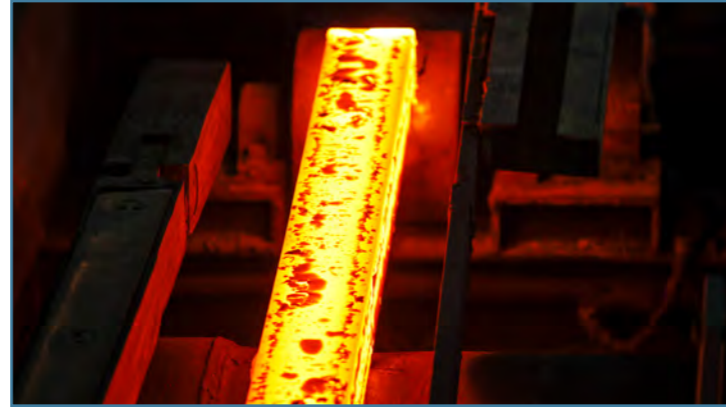
OUR SERVICES

- EPC Projects
- Greenfield & Brownfield Project
- Management & Control
- Engineering & Design
- Process Consultancy
- Own Manufacturing & Assembly
- Factory Acceptance Test
- Logistics
- Site Construction
- Comissioning & Start Up
- Training
- Spare Parts & After Sales Service



Environment & Energy

- Industrial Water Treatment
- Waelz Oxide & Metal Recovery
- Hydrogen Technologies
- Waste Treatment



SARRALLE HYDROGEN TECHNOLOGIES

THE STEELMAKING INDUSTRY WITHIN THE FRAMEWORK OF GREENHOUSE GAS REDUCTION TARGETS

- The steelmaking industry is among the 3 industrial sectors with the highest CO₂ emissions, with a share of around 8% of global emissions.
- EU has set the goal to have a steelmaking industry with zero CO₂ emissions by 2050.
- Clear driving factors are identified towards the decarbonization of the steelmaking industry:
 - Increasing demand from end customers for low carbon footprint products.
 - Stricter emission regulations. Lower emission targets and rising emission allowance prices.
 - Growing interest of investors in a sustainable industry

Why Hydrogen?

The decarbonization of the steel industry will require significant technological advances, amongst which green hydrogen will play a key role. Decreasing renewable energy costs and improved electrolyzer technologies are expected to improve green hydrogen-based steel cost competitiveness.



SARRALLE'S HYDROGEN COMBUSTION TECHNOLOGIES



80% CO₂ emissions associated to Reheating Furnace.

Sarralle has the international experience for the design, manufacturing, supply, construction and commissioning of Reheating Furnaces running with Hydrogen.



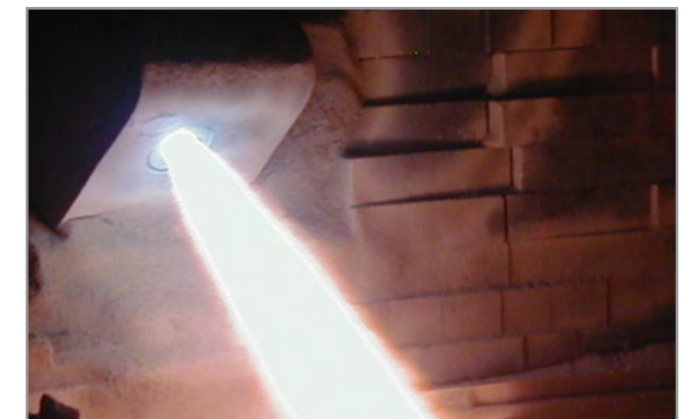
PARTNERSHIPS

Partnership with **Nippon Gases** to manufacture and deliver oxy-combustion DiluJet® burners (0-100% NG/H₂ mixtures).



REPLACEMENT OF NATURAL GAS
by green hydrogen in heating equipment

- MANUFACTURING OF 100% H₂ BURNERS
- INTEGRATION OF H₂ BURNERS IN HEATING EQUIPMENT
- HEATING EQUIPMENT MODIFICATIONS TO NEW H₂ COMBUSTION SYSTEM



Other equipment:

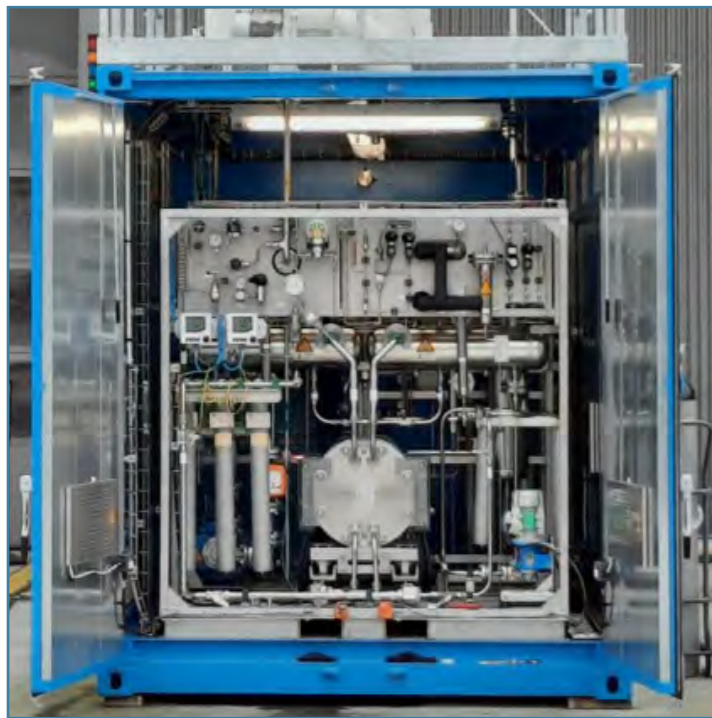
- Ladle Preheater
- Tundish Heater
- EAF - Injector
- Oxyfuel Cutting



SARRALLE'S HYDROGEN GENERATION TECHNOLOGIES

PARTNERSHIPS

Partnership with **Elogen** GTT Group (PEM electrolyzer manufacturer, with full control of their stack technology) to manufacture, supply and commission green hydrogen generation equipment.



- MANUFACTURING OF ELECTROLYZER SKIDS
- INTEGRATION OF ELECTROLYZER CONTAINERS
- COMMISSIONING OF ELECTROLYZERS IN INDUSTRIAL PLANTS
- SUPPLY OF GREENFIELD HYDROGEN PRODUCTION PLANTS



SARRALLE'S VALUE CONTRIBUTION TO THE DECARBONIZATION OF THE STEEL INDUSTRY VIA HYDROGEN

Sarralle's objective is to provide steelmaking companies with the full green hydrogen solution, from H₂ generation to H₂ combustion.

- More than 50 years of experience designing and manufacturing steelmaking equipment and facilities, especially for **electric arc furnaces**.
- Engineering team with extensive experience in equipment and technologies in all technological areas involved in the decarbonization of the steelmaking sector
- Projects execution team specialized in the supply of turnkey process facilities (energy, waste, water and steel sectors)



REFERENCES

HYDROGEN COMBUSTION TECHNOLOGIES

- H-Acero (R&D project) – 2021/23
- Ladle Preheater with 100% H₂
- HyInHeat – Conversion of Reheating Furnace to 100% H₂ (on-going)

HYDROGEN GENERATION TECHNOLOGIES

- Demo Project 2,5 MW Aragón

MEMBERSHIPS



- **Basque Hydrogen Corridor (BH₂C)**
Leading the Steel Group and part of the management team)
- **Ebro Hydrogen Corridor**
Association member - Basque Hydrogen Corridor, Cataluña Hydrogen Valley & Aragón Hydrogen Valley
- **Spanish Hydrogen Association (AeH₂)**
Association member
- **Spanish Hydrogen Network (SHYNE)**
Association member



ARE YOU INTERESTED
IN LEARNING MORE
ABOUT THE SARRALLE'S
CAPABILITIES?

LET'S GET TOGETHER
AND HAVE A MORE
DETAILED PRESENTATION

Social Media

SARRALLE WEB
FACEBOOK
INSTAGRAM
LINKEDIN

Contact

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VISIT SARRALLE WEBSITE