

# FURNACES

## New era begins for **SIGMA** as electric furnace goes live

Having recently flipped the switch on a groundbreaking 1750°C electric furnace at its Plovdiv plant, SIGMA now sets a new standard in sustainable refractory manufacturing. This milestone marks a bold leap toward carbon neutrality – combining advanced engineering with a firm commitment to environmental responsibility.



LECTRIC



In the heart of Plovdiv, a transformative chapter unfolds for the glass and refractories industry. Sigma Group has brought to life a next-generation electric furnace capable of reaching an intense 1750°C - an engineering feat that redefines refractory production and places sustainability at its core. The newly commissioned furnace is more than a technological advancement. It is a bold statement of intent. By eliminating gas combustion, the furnace achieves near-zero on-site carbon emissions - an essential move in a sector where heavy industry still accounts for approximately 25 percent of global greenhouse gas output. Power for the furnace will be partly supplied by Sigma's own solar array, which already generates 340,000 kWh annually and saves 180 tonnes of CO<sub>2</sub> each year.

### POWERING SUSTAINABILITY: PRECISION, PERFORMANCE AND NEAR-ZERO EMISSIONS

Beyond environmental gains, the electric furnace introduces unprecedented precision to the firing process. With digitally controlled profiles, the system enables remarkable consistency and superior material performance, seamlessly uniting traditional materials science with modern electrical engineering. Such a leap forward did not come easily. Designing an electric furnace capable of sustaining extreme temperatures while ensuring throughput and stability demanded daring innovation and technical mastery. Sigma's engineers met the chal-



The photovoltaic system at the group's Locate Varesino facility produces 560,000 kWh annually, saving 300 tons of CO<sub>2</sub> emissions per year. 85 percent of the energy generated is self-consumed, covering 35 percent of the facility's electricity needs.

lenge - proving that sustainability need not mean compromise.

### ENGINEERING BREAKTHROUGHS: BUILDING THE FURNACE OF THE FUTURE

The project required bold thinking, robust expertise and an unwavering commitment to progress. As such it represents a turning point in industrial furnace design - one that pairs energy efficiency with world-class refractory output. Indeed by reducing Scope 3 emissions and embedding lower carbon footprints into its products, Sigma is thus delivering solutions that align with global climate goals - without sacrificing reliability, performance or quality.

### BEYOND THE FURNACE: A BROADER GREEN VISION TAKES SHAPE

The electric furnace is only one part of the group's multifaceted green transition. Recent installations of photovoltaic systems generating 900,000 kWh per year and smart energy solutions are cutting carbon emissions by a further 480 tonnes annually - the equivalent of taking 104 cars off the road. Sigma's efforts demonstrate that responsible manufacturing can be both practical and impactful. As the industry seeks lower-emission partners, SIGMA has shown its leadership with action - offering tangible progress toward a more sustainable world. ■

Sigma Group's new photovoltaic system at the Plovdiv site is now generating 340,000 kWh annually, reducing CO<sub>2</sub> emissions by 180 tons per year. This helps ensure a more sustainable and cost-effective energy supply.



### SIGMA GROUP SRL

S.I.G.M.A. S.R.L. Tel +39-0331-823-195  
office@sigmaref.it  
SIGMAREF SRLU Tel +359-32-396-423  
office@sigmaref.bg  
www.sigmaref.it