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Innovative “Scale Free” Furnace for section rolling mill

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The formation of scale in a reheating furnace is influenced by the O₂ content at high temperatures and the residence time within the furnace chamber. Since the temperature and the residence time of the steel are parameters dependent on the process, the only way to reduce scale formation is by decreasing the O₂ content in high-temperature zones.

For this reason, Danieli Centro Combustion has studied and already supplied Scale Free Furnaces, capable of operating in a reducing atmosphere under completely safe conditions. This technology, compared to a traditional Walking Beam furnace, not only halves scale formation but also reduces fuel consumption and CO₂ emissions.

Scale Free Furnaces are designed to maintain a constant reducing atmosphere, which minimizes the surface oxidation of the steel. This is achieved through precise control of the air-fuel ratio and the use of special burners. Additionally, the reduction in fuel consumption not only lowers operational costs but also contributes to a smaller environmental footprint, making this technology a sustainable choice for the steel industry.

In summary, the adoption of Scale Free Furnaces by Danieli Centro Combustion represents a significant technological advancement, offering benefits in terms of product quality, energy efficiency, and environmental sustainability.

Primary authors: Mr VENANZINI, Alessandro (Danieli Centro Combustion S.p.A.); Mr BILIOTTI, Andrea (Danieli Centro Combustion S.p.A.); Mrs SALAMONE, Elisa (Danieli Centro Combustion S.p.A.)

Presenter: Mr VENANZINI, Alessandro (Danieli Centro Combustion S.p.A.)

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