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Energy- and Space-Saving Electrolytic Cleaning with SMS group Pulse Nozzle Technology

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SMS group Pulse Nozzle technology reduces the energy consumption of the electrolytic cleaning section in strip processing lines by up to 90-95 %. The novelty of the process lies within the application of alternating current and its efficient cleaning properties. Instead of submerging the strip and simultaneously applying high currents, the Pulse Nozzle contacts the strip surface with continuously flushing fluid, using less than 5 % of the current. Therefore, the rectifier capacity can be 95% lower with the new Pulse Nozzle system, saving CAPEX and OPEX. Moreover, friction from submerging in fluid and wandering currents are eliminated with the new electrolytic cleaning Pulse Nozzle. The production of H2 is significantly reduced by applying alternating current instead of direct current.

The Pulse Nozzle has been thoroughly tested in a continuous annealing line producing tin plate steel materials. The results show that one pair of Pulse Nozzles can replace one traditional electrolytic cleaning tank. Multiple production coils have been processed using the new Pulse Nozzle without any constraints regarding quality after annealing and coating in ETL.

Noteworthy is that the Pulse Nozzle System can be installed in existing processing lines. Depending on the line design, even a switching between cleaning systems can be achieved within one hour after initial installation.

The new development not only allows energy saving during cleaning, but it also reduces the space requirements, requires smaller tanks and circulation, and most substantial a reduced power supply. Overall, the Pulse Nozzle system with its space and energy saving properties is a worthwhile investment.

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