

Water Treatment Solutions for the Steel Industry

CAPABILITY PROFILE

Driving financial and environmental performance

Veolia understands regulatory, environmental and financial challenges, and recognizes the opportunities of today's steel industry. Veolia provides chemical and equipment solutions to help manage water and operational needs. These synergies help minimize mill costs, generate greater efficiencies, maintain reliability, and improve the quality of your production while reducing your environmental footprint.



How can we help optimize your steel production?

Pretreatment for Influent Water

- **Engineered water purification systems** for all requirements of quality and quantity, either fixed or mobile/temporary installations.
- **Mobile water fleet** – the largest in the world – emergency response with 24-hour dispatch to safeguard equipment and stay online.
- **KlarAid* and PolyFloc* clarification chemistry** to optimize process water solids removal at the lowest cost of operation.

Steelmaking & Continuous Casting

- Reliable operation requires control of deposition, corrosion and microbiological growth in cooling water systems. **GenGard*, ScaleTrol* and Spectrus* cooling water programs** ensure deposit-free, foam-free operation in areas that matter:
 - EAF components, DES hoods & vacuum degas systems
 - Blast Furnace & BOF systems
 - Continuous Caster spray nozzles and heat exchangers
 - Caster Spray Chamber & Machine systems
 - Coke Plant process treatments
 - DRI (direct reduction iron)

- Boiler water pretreatment equipment and chemical programs for reliable steam generation while optimizing fuel and water usage, and reducing GHG emissions.
- Reverse osmosis engineered systems prevent deposition by removing dissolved solids responsible for scale formation that can lead to production losses.

Rolling & Finishing Mills Solutions

- Proprietary **KlarAid*** wastewater treatment products for solids & oil removal.
- Reheat furnace and laminar system cooling programs.
- Rinse water and wastewater metals removal **MetClear*** treatment programs.

Roadways & Material Handling Dust Control

- **DusTreat*** cost-effective dust control programs for road and piles, conveyors and process area; minimizing health and safety risks while limiting the amount of water used for dust abatement and reduce moisture content of feed stocks.

Effluent clarification & treatment / ZLD (zero liquid discharge)

- Specialty coagulants, flocculants and unique automated dosing systems to improve clarification and reduce operation costs.
- **MetClear*** heavy metals removal chemistry to solve wastewater problems.
- **ZeeWeed*** membrane bioreactor (MBR) combine proven ultrafiltration (UF) technology with biological treatment for consistent, high quality effluent suitable for any wastewater discharge or reuse application.

Digital & Automation

Unique service model with a proactive, digital, data-driven approach providing improved visibility, optimized chemical, water and energy usage, real time data and predictive modelling.

- **InSight*** data management system.
- Tank level monitoring for 24/7 accurate feed rates and alarms.
- **TrueSense*** analyzers and controllers for continuous readings and automated control.
- **MonitAll*** predictive heat exchanger fouling technology.

Case study: Tailored Solutions for the Steel Industry

Optimized fluoride removal solves deposition and corrosion in caster spray system

Fluoride powder is used as a casting mold release agent, but it can contaminate the cooling water that is sprayed to cooldown the mold. Fluoride removal is critical because it is a regulated contaminant at the effluent and exceedances can lead to fines and other penalties.

An SBQ steel bar manufacturer was using a costly 4-products program to remove fluoride, but was not satisfying the discharge limits. The chemistry used to remove the fluoride was also causing deposition and corrosion in other areas of the cooling spray system, affecting product quality. By applying a KlarAid* and PolyFloc* treatment, Veolia succeeded in meeting the fluoride discharge limits and solved deposition and corrosion problems across the cooling water loop. The customer saved \$100,000 in annual chemical treatment costs, but more importantly, solved recurring product quality and maintenance issues.

