

Corrosion protection for boilers

Onsite automated weld overlay

Maximizing operational availability and performance

Improving boiler performance and reliability is an ongoing challenge for boiler operations maintenance teams. Sulzer's weld overlay solutions are designed to enhance the service life of our client's assets, reducing failures and improving operational availability.

In addition to our shop cladding facility we provide onsite weld overlay services to our global client base, protecting boilers and components from corrosion and erosion by applying our weld overlay solutions, often in harsh and challenging environments.

With continued focus on safety, quality and ever demanding schedules, our highly skilled teams have executed numerous projects on waste-to-energy and biomass plants, reducing maintenance costs by providing an effective boiler protection.



Picture 1: Automatic weld overlay

Onsite weld overlay services

We offer an extensive portfolio of weld overlay services for boilers:

- Automated weld overlay on new or worn carbon steel tubes
- Automated weld overlay on existing worn cladding
- Automatic and semi-automatic weld overlay of headers and screen tubes
- Carbon build-up of existing membrane wall and tubes
- Inspection and repair service for existing weld overlay

Project evaluation and planning

Sulzer conducts comprehensive project preparation and planning on all of its projects in cooperation with our customers, to achieve highest safety and quality standards.

Surface preparation

Sulzer's high quality weld overlay service is designed to achieve our client's specifications and QA standards while working safely. An important step in this process is surface preparation to SA3, NACE No.1 / SSPC-SP5 standards.



Picture 2: Onsite overlay in progress

NDT and inspection services

Our level II and/or level III QA Inspectors will provide a comprehensive report for existing overlay to establish scope requirements or on the completion of a weld overlay project.

CladFuse™ weld overlay process

CladFuse is an effective and commercially viable protection for boiler components against base material thinning caused by corrosion and erosion. It provides long term protection for membrane wall and tubes, avoiding and preventing future costly unplanned outages and replacements.

Key features of the CladFuse weld overlay process are:

- Vertical down and overhead welding positions
- Predetermined weld bead pattern
- 50% overlap of beads
- >2mm weld overlay thickness
- High material deposition
- Controllable and consistent parameters
- Continuity of beads
- Minimum iron content

Qualifications

We hold a comprehensive range of welding certifications, including ASME, National Board, and European, permitting us to provide a complete range of welding services covering your needs.



ISO 9001 and ISO 3834-2 certification, adherence to AD 2000-Merkblatt HP0 standard and guideline assures our customers of a quality service.

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Boiler Tube Weld Overlay CladFuse™ Spiral 360°

Comprehensive services

Sulzer is a specialized service company offering automated weld overlay processes as effective solutions against corrosion and erosion within the Energy Industry.

With global capabilities, our innovative technology provides protection to industrial industries in a wide range of challenging environments, such as Oil & Gas, Petrochemical and Refining, Waste to Energy, Biomass along with Pulp and Paper.

We have been providing our clients with a high quality service protecting their essential assets by using the latest bespoke technology and ensuring high quality, lasting protection.



Picture 1: Boiler Tube Overlay Machines

Protection against Corrosion & Erosion

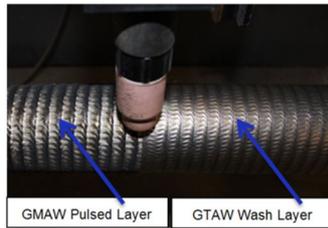
One of the major challenges facing operators and owners of Industrial Power Plants (including WTE and Biomass) is ensuring the long term performance and reliability of critical components such as Super-heaters and Economizers.

High maintenance costs can be reduced and longer outages minimized by protecting components using weld overlay.

Our **CladFuse™ Spiral 360°** weld overlay system is a proven and effective solution protecting against base material thinning caused by erosion and corrosion.



Picture 2: Tube Quality
Commercially viable solution



Picture 3: Weld Process

Individual boiler tube, screen tubes and headers can all be protected against corrosion and erosion using our **CladFuse™ Spiral 360°** system, ensuring that high quality and effective protection is achieved.

Plants using our weld overlay solution can benefit from:

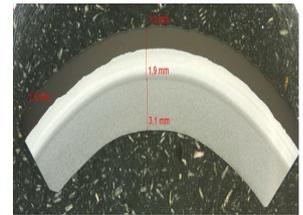
- Reduced maintenance costs
- Replaces the requirement for tube shields
- Longer periods between outages
- Reduced fabrication & inspection costs
- Extended asset lifespan

CladFuse™ Spiral 360°

- GMAW pulsed & GTAW process.
- Controllable and minimal dilution rates.
- Accurate control of parameters to achieve high quality claddings
- Optimized material thickness application



Picture 4: 180° Bend Test



Picture 5: Macro Test

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ISO 9001 certification assures our customers of a quality service.

ISO 3834-2 certification assures our customers of a quality service.

Following AD 2000-Merkblatt HP0 standard and guideline assures our customers of a quality service.

Corrosion Protection for Boilers

Automated Weld Overlay in Workshop

Maximizing operational availability and performance

Improving boiler performance and yearly availability is an ongoing challenge for boiler operations and maintenance teams. Sulzer's Weld Overlay solutions are designed to enhance the operational reliability of our client's assets, improving operating performance, by increasing availability and in turn strengthening revenue streams.

At our cladding facilities we provide Weld Overlay services to our global client base, protecting boilers and components from corrosion and erosion by applying our Weld Overlay solutions.

With continued focus on Safety, Quality and ever demanding schedules, our highly skilled teams have executed numerous projects for Waste to Energy and Biomass plants, reducing maintenance costs and effective boiler protection.

Solution

Thinning of the original base material due to corrosion and/or erosion can cause a reduction in the operational performance of the boiler, resulting in long term production not being commercially viable and increase the risk of unplanned failures.

Sulzer's Weld Overlay solutions for membrane wall at our cladding facilities provide commercially viable, effective protection for membrane walls, minimizing the long term risk.



Picture 1: Pulse GMAW membrane wall welding towers.

CladFuse™ GMAW-P Weld Overlay towers

The CladFuse membrane wall Weld Overlay process uses Pulsed MIG welding technology. Advantages are:

- Advanced automated welding equipment
- Controllable and minimal dilution rates
- Accurate control of parameters
- Optimized material thickness application
- High deposition rates
- 1 and 2 layers processes

CMT Weld Overlay

As part of our membrane wall weld overlay services we also offer a CMT welding process. Advantages are:

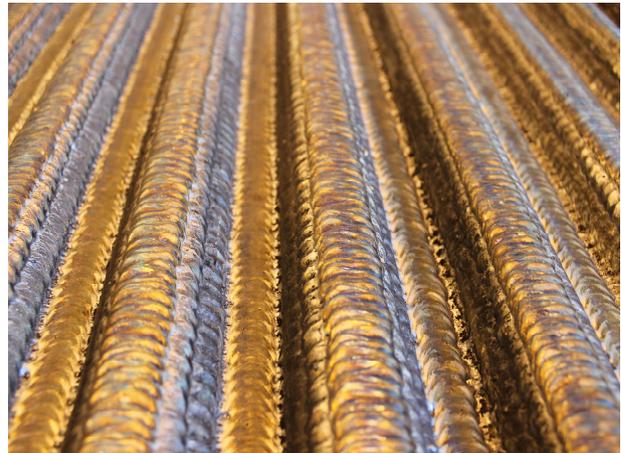
- Short Arc MIG/MAG process
- Cooler welding temperatures
- Lower welding current in the weld pool
- Lower dilution rates



Picture 2: CMT Welding Heads

Our overlay processes provide:

- Commercially viable solutions
- Long term solutions to corrosion/erosion
- Prevention of costly and unplanned shutdowns



Picture 3: Cladded Panels

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