Automated weld overlay for corrosion protection: boilers
Maximizing operational availability and performance

Improving boiler performance and uptime are ongoing challenges for boiler operators and maintenance teams. Sulzer’s weld overlay solutions are designed to enhance the operational reliability of our customer’s assets, improving performance and adding consistency to revenue streams.

With a 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 and delivering effective, long-term boiler protection against corrosion and erosion.

On-site 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 worn cladding
- Automatic and semi-automatic weld overlay of headers and screen tubes
- Carbon build-up of existing membrane walls and tubes
- Inspection and repair service for existing weld overlays
Project evaluation and planning

Sulzer conducts comprehensive project preparation and planning activities in cooperation with our customers. In this way, we can offer the most suitable solution that satisfy customers’ requirements, as well as achieve the highest safety and quality standards.

Surface preparation

Sulzer’s high-quality weld overlay service is designed to meet our customer’s specifications and consistent Quality Assurance (QA) standards while working safely. An important step is the preparation of the surfaces according to ISO 8501 SA 3 to remove rust, paints or coatings and any other foreign matter.

NDT and inspection services

After the inspection of existing overlays or the completion of a weld overlay project, our level II and/or level III QA inspectors will provide a comprehensive report on the work conducted. This will also discuss the Non-Destructive Testing (NDT) activities performed.

CladFuse™ automated weld overlay process

CladFuse is an advanced automated welding technology that offers an effective and commercially viable protection for boiler components against base material thinning caused by corrosion and erosion. It provides a long-term and reliable protection for membrane wall and tubes whilst preventing future costly unplanned outages and parts replacements.

Key features of the CladFuse™ weld overlay process are:

- Vertical down and overhead welding positions
- Predetermined weld bead pattern
- 50% overlap of beads
- >2 mm weld overlay thickness
- Optimal material deposition
- Accurate control of operational parameters to achieve high-quality overlay cladding
  - High speed deposition that slashes downtime
  - Wide range of suitable alloys, including 625 Inconel, 300/400 series stainless steel and C276 Hastelloy
- Continuity of beads
- Minimum iron content
  - Pulsed gas metal arc welding (GMAW-P) and pulsed gas tungsten arc welding (GTAW-P) processes supported
  - Controllable and minimal dilution rates
  - <10%- Elevated pre-heat operational capability
Your ideal service partner

Qualifications
We hold a comprehensive range of welding certifications from ASME, the National Board of Boiler and Pressure Vessel Inspectors, and the European Committee for Standardization. These attest to our ability to provide a complete range of welding services that satisfy various needs.

In addition, we ensure a quality service by adhering to ISO 9001 – Quality Management, ISO 3834-2 - Quality requirements for fusion welding of metallic materials, and AD 2000-Merkblatt HP0 standard on the design, manufacture and testing of pressure vessels.

Sulzer’s comprehensive weld overlay offerings
Sulzer offers a wide range of automated weld overlay services for both onsite and offsite maintenance. Common applications include:
- Nozzle ID welding
- Tower and vessel overlay
- Coker drum overlay
- Boiler waterwall membrane panels
- Boiler tube overlay
- Pipe and fittings
- CRA pipeline ID overlay welding

Sulzer is able to apply weld overlay to a broad range of equipment:
- Towers and vessels
- Reactors
- Separators
- Coker drums
- Heat exchangers
- Digesters
- Coal-fired boilers
- Waste to Energy boilers
- Biomass boilers
- Furnaces
- Storage tanks
- and more...
Sulzer has a global network that is well placed, equipped and experienced to service any needs and requirements from our customers.

Our facilities are located around the world with service facilities in:

- USA
- Canada
- Mexico
- Brazil
- UK
- Germany
- Saudi Arabia
- India
- Thailand
- Singapore
- China
- Australia

Each service facility has the capability to meet the demand of the local market, supported by the skills and expertise of the entire organization, including Sulzer’s vast network of engineers and technical experts.

By mobilizing our resources, we have the ability – supported by a proven track record – to execute projects all around the world.
This brochure is a general presentation. It does not provide any warranty or guarantee of any kind. Please, contact us for a description of the warranties and guarantees offered with our products. Directions for use and safety will be given separately. All information herein is subject to change without notice.