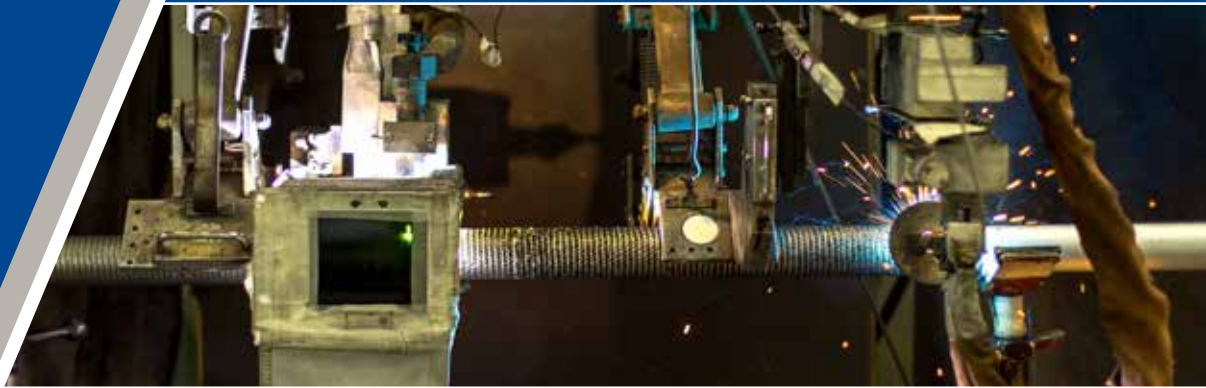


Unifuse® 360 Boiler tube protection



Tube overlay in progress

The advanced system to protect against corrosion and erosion

Individual tubes in a boiler may be separated from boiler tube panels as part of burner nests or other necessary penetrations through the panel wall, such as soot-blower openings. Along with all the individual tubes in the upper furnace (screen, pendant and superheater tubes) they need 360° protection from corrosion and/or erosion.

A unique, cost-effective solution

AZZ WSI® has over 30 years' experience in the protection of boilers using the advanced **Unifuse** technology. **Unifuse** ensures long-term, reliable performance, which is a key objective for the mechanical integrity of critical components.

The outstanding benefit that **Unifuse 360** offers over other competing technologies is the ability to cold-fabricate these tubes after application of the protective overlay – without separate post-weld heat treatment. No other coating, overlay or ceramic application will allow cold bending and forming without cracking, delamination or spalling.

For assured longer boiler tube life and the associated reduction in maintenance expenses, inspections and fabrication problems, specify **Unifuse 360** boiler tubes.

Unifuse 360
Protection on tubes

Base material

Fully metallurgical bond:
no cracks, delamination
or spalling



Cross-section of a bent tube

Proven, comprehensive protection

The **Unifuse 360** solution delivers lasting protection and benefits customers in a variety of applications:

- Replaces the high maintenance cost and poor performance of mechanical tube shielding
- Customizes the localized erosion resistance needed in soot-blower lanes
- Provides 360° protection on tubes to be made into panels challenged by combustion gases on one side and corrosion on the other
- Delivers full protection for tangent tube panels, dividing walls, screens, pendants, and superheater tubes in boilers
- Ensures extended life for hanger tubes and rods

Unrivaled manufacturing facility

AZZ WSI is simply unique in our fabrication capability. Our superior technology, engineering resources and automated processes offer a world-class solution that delivers consistency, quality and value.

Manufactured according to both PED and ASME regulations, **Unifuse 360** tubes offer excellent heat-transfer with the longest reliable working life.

Benefiting from constant innovation and quality improvements, the advanced **Unifuse 360** solution will extend the lifetime and maximize the value of your boiler tubes.

Tube diameter	21-273 mm
Range of tubes	WT > 3,2 mm up to 36 mm (subject to agreement)
Length	Up to 15 m
Base material	CS Group 1, 5, 6 and 8 and Stainless steels (e.g. 304L, 308L, 309L, 317L)
Overlay material	Stainless steel 309L, 310L, 312 or nickel-based alloy 622, 625
Overlay thickness	1.2–3 mm (or even more if required with multilayer overlay)



Superheater coil



Inspection of the 360 tubes

For more information, please email wsi-europe@azz.com or visit www.azz.com/wsi-europe

AZZ WSI® is a specialized global services company offering innovative maintenance through automatic weld repair solutions that extend the lifetime and maximize the value of our customers' assets in the energy industry.

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