High-Temperature Coating for Pipeline Weld Joint Protection

ID: 10260

Industry:	*Power*	Customer Location:	*Orlando, Florida, USA*
Application:	*VPF-Valves, Pipes and Fittings*	Application Date:	*February 2026*
Substrate:	*Carbon steel*		
Products:	*Belzona 5892*		

Problem

The pipeline weld joint areas were left exposed after fabrication, showing signs of surface contamination and early-stage corrosion.

These critical zones are highly vulnerable to coating failure if not properly treated, which can lead to accelerated corrosion, coating breakdown, and long-term asset deterioration.

Given the operating conditions and potential exposure to elevated temperatures and environmental elements, a robust and reliable protection system was required to ensure long-term performance and minimize future maintenance.



Pipeline weld joints after surface preparation and masking, ready for coating application, with blasting performed to achieve the required surface profile for optimal adhesion.



Blasted pipeline weld joint showing verified surface profile and cleanliness prior to coating application, ensuring optimal adhesion and long-term performance.



Surface profile measurement using an Elcometer gauge, confirming the achieved profile meets the required specification for optimal coating adhesion.



Completed coating system applied on pipeline weld joints, showing uniform coverage and defined repair bands around the weld areas to provide long-term corrosion protection.

Application Situation

The client required a cost-effective and reliable solution to protect newly fabricated pipeline weld joints without introducing additional downtime or complex repair procedures.

Traditional protection methods could have involved additional fabrication work, coating reapplications, or future maintenance interventions. The selected Belzona solution allowed for a controlled, in-situ application, minimizing operational disruption while

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ensuring consistent protection across all treated areas.

This approach not only improved efficiency during installation but also provided a long-term corrosion protection strategy, reducing lifecycle costs and maintenance frequency.

Application Method

The pipeline weld joints and surrounding areas were abrasive blasted to remove contaminants and achieve the required surface profile for optimal coating adhesion.

Following surface preparation, the application areas were defined and masked to ensure controlled and consistent coating boundaries. Surface profile was verified prior to application, confirming compliance with specification requirements.

The coating system was then applied in multiple layers to achieve the required thickness and ensure full coverage over the weld joints and adjacent areas. Coating thickness was measured using inspection tools to validate proper build-up and uniformity.

The final result was a continuous, high-integrity protective barrier across the treated surfaces.

Belzona Facts

The Belzona solution provided a cost-effective alternative to traditional methods such as rework, welding, or component replacement, significantly reducing downtime and operational impact.

As a cold-applied system, it eliminated the need for hot work permits, improving safety and simplifying on-site application.

The system delivered excellent adhesion and created a seamless, high-performance barrier over the weld joints, protecting against corrosion, environmental exposure, and elevated temperature conditions.

Overall, the solution extended the service life of the pipeline while reducing future maintenance requirements and ensuring long-term asset reliability.

The solution also ensured consistent application quality and improved overall asset reliability.

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