

Belzona Trials New SF6 Leak Solution to Seal the Deal.

ID: 9179

Industry: Power
Application: VPF-Valves, Pipes and Fittings
Substrate: Aluminum
Products: Belzona 1981 (SuperWrap II), Belzona 7311

Customer Location: North East, United Kingdom
Application Date: September 2023

Problem

Sulfur Hexafluoride (SF6) is 23,500x more aggressive to the atmosphere than CO2, therefore, losses must be accounted for. Environmental Agencies who monitor and control SF6 losses accountability will issue fines for these losses, at approximately £1,000/KG. This particular Electrical Switch Gear was leaking 70KG per month, which is why the Customer needed a solution to reduce the leak.



SF6 flange following surface preparation to SSPC-SP11, installation of the Backing Rod, tape, Redirection Nozzle & Breather Membrane.



Wetting out of the Breather Membrane and vertical application of Reinforcement Sheets (Belzona 9341) using Belzona 7311.



Post-application of 5x wraps of reinforcement sheet (Belzona 9371) and Belzona 1981 resin.



Final application after a further encapsulating layer of Belzona 7311.

Application Situation

Electric Switch Gear flange within a Power Distribution Substation.

Application Method

The substrate (Aluminium) was first prepared in accordance with SSPC-SP11 Surface Preparation using an MBX (using a Stainless Steel wheel to prevent bi-metallic contamination). Once prepared, a backing-rod was applied behind the flange bolts and tape was applied over the bolts themselves (this prevents Belzona from adhering to them and allows a smoother surface transition). A Breather Membrane was applied around the circumference of the flange encapsulating it in its entirety, a Redirection Nozzle was also fitted to channel the leaking gas. Belzona 7311 was then applied to seal the membrane prior to the application of the impregnated Belzona 9341 (Reinforcement Sheet). The newly applied Belzona 7311 was then wetted out using Belzona 1981 (Winter Grade) SWII Resin prior to the application of 5 x wraps of Belzona 9371 (SWI Reinforcement Sheet) forming 10-layers (due to the 50% overlap). This was then left to polymerise (generating a slight self-curing exotherm) prior to a final encapsulating layer of Belzona 7311. The application required approximately 6L of Belzona 7311 & 5L of Belzona 1981. The application was carried out in accordance with a modified version of Belzona System Leaflet VPF-12.

Belzona Facts

Belzona conducted this application on a trial basis and had a remit to reduce the leak by at least a minimum of 80%. The application was undertaken within a 12-hour shift. The solution was classed as successful after 3-months of service and is now being rolled out

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FS 695214
ISO 14001:2015
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