

RotoClone Wet Dust Collector - External Plate Bond Repair

ID: 10148

Industry: Chemical & Petrochemical
Application: FBC-Fans, Blowers and Compressors

Customer Location: Greater Houston, TX
Application Date: December 2025

Substrate: Carbon steel
Products: Belzona 1111 (Super Metal)

Problem

The customer had a critical piece of equipment, a RotoClone™ Wet Dust Collector, that experienced through wall corrosion at the exhaust vent. The dust collector uses centrifugal force and a water spray to efficiently capture dust, mist, and sticky particulates from industrial air, effectively cleaning the air for recirculation, protecting workers, and preventing explosions in harsh environments. Over time, one exhaust vent established a through wall defect after years of service. The moisture going through the exhaust vent was now coming out of the holes that were developed, creating a safety hazard and inefficient equipment.



Asset in service, with moisture coming out of the defects. Area has red tape to prevent access. Moisture spilling on the floor.



Surface prep complete with power tools.



Plate bond application.



Plate bond application.

Application Situation

This asset is critical in the customers service. It must be in operation for the unit to be operable. There is no redundancy for this asset. Replacement of the asset is very difficult. The asset is heavy and on the fourth floor of the unit. So to replace involves rigging it up to lift, carry it to the service elevator, bring it down, and bring the new asset up in its place. Then the new asset must be installed. This type of work is best completed during a scheduled turnaround, which was not for another 6 months at the time of our first site walk. They were looking for a cost effective repair to get them by until the turnaround, so they could replace.

Application Method

The customer chose to use Belzona 1111 for this repair. About a year and half prior, the 1111 was used to composite patch small pin hole defects on the asset and held up well. The max operating temp of the air/water mixture was around 135F, which also helped

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guide our decision to use 1111. The prep and Belzona application was completed in about 3 hours.

1. Asset taken out of service and allowed to dry.
2. A grinder with a tiger pad was used to prep the metal surface.
3. Three metal plates were fabricated and pre cut to the size needed to fit over the defect areas.
4. Belzona 1111 was mixed and applied to the asset and back of each plate. Each plate was laid in place and self tapping screws were applied to help compress the plates in place. Additional Belzona 1111 was used to chamfer the edges of the plate best effort, and to putty over the screws.
5. Belzona 1111 was force cured using heat blankets, per the IFU. About 2 hours at ambient then about 4 hours between 140F-200F, ramping up in 50F increments from ambient.

Belzona Facts

This application was completed by the customers internal maintenance team. We used one 5kg kit of 1111 and mixing tools. So the overall cost was only the Belzona which is nothing compared to the overall downtime cost of the unit. The customer was back up and running with no issue. This was a cheap fix to buy them time for the turnaround to replace this asset in a few months. An alternative repair option discussed was weld repair. Ultimately it was not feasible because the metal on the exhaust vent was too thin to weld.

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