

BELZONA REPAIRS AND STRENGTHENS SEVERE THROUGH WALL SLIDING ABRASION TO ASH PIPEWORK AT AN ENERGY RECOVERY PLANT

ID: 9785



PROBLEM

The customer treats 378,000 tonnes of non-recyclable waste each year and diverts at least 95% of the County's residual municipal waste away from landfill. During this process they generate enough electricity to power the equivalent of 80,716 homes. Non-recyclable waste is burned and the energy from combustion is re-used through turbines creating electricity. The ash left from the burning process falls down stainless steel pipe chutes and causes severe sliding abrasion and through wall problems in the pipework, especially on the bends.

APPLICATION SITUATION

The customer used to weld on new pipework in large lengths which was very costly, shuts the plant down for a few days and requires heavy lifting equipment. It also becomes difficult to weld in some areas due to very thin areas of steel left due to the sliding abrasion. So long, expensive new sections of pipe were changed which cost several thousand to replace. Where the steel had worn through on the elbows the customer liked the idea of bonding on sleeves/patches of Stainless steel over these areas with Belzona 1511 Super High Temperature Metal. It was also agreed to use Belzona 1983 SuperWrap II on top of the plate bond and to wrap the elbows a fair distance either side of the patch to give wall strength back to the thin wall areas.

APPLICATION METHOD

A stainless steel patch was cut from a similar sized spare pipe to be bonded over the through wall areas and this was prepared on both sides. The plate was then bonded over the holed elbow with Belzona 1511 Super High temperature metal and held in place with strap clamps until the Belzona 1511 had cured sufficiently. The straps were removed and Belzona 1983 SuperWrap II was applied in several layers to strengthen the thin pipe on the elbow and either side of the patch repair.

BELZONA FACTS

The customer was very pleased with this quick and cost saving repair compared to welding on long sections of new pipe. They will continue to use this Belzona solution in the future as and when the pipework needs further repairs.

INDUSTRY

Power

LOCATION

Oxfordshire

APPLICATION DATE

December 2024

PRODUCTS

- Belzona 1511 (Super HT-Metal)
- Belzona 1983 (SuperWrap II)
- Belzona 9111 (Cleaner Degreaser)

SUBSTRATE

Stainless-steel

PHOTOS

1. Pipe showing the large hole caused by sliding abrasion. Photo shows the pipe after surface preparation and starting to apply Belzona 1511 Super High temperature metal for the patch to be bonded onto.
2. The Steel patch after surface preparation both sides, which is going to be bonded over the large elbow hole.
3. The steel patch now bonded into place over the hole and clamped with two strap clamps.
4. Belzona 1983 SuperWrap II has now been applied over the pipe elbow, covering the new patch and 200mm each side of this to give some structural Integrity back to the chute. Release film is being applied tightly to consolidate the application.