

# BELZONA REPAIRS STEAM TRAIN FOR UNDERGROUND ANNIVERSARY

ID: 5119

Industry: General Industry

Customer Location: Locomotive repair workshop, Forest of Dean, UK

Application: ENC-Engines and Casings

Application Date: February 2014

Substrate: Cast Iron engine and steel doubler plates

Products: \* Belzona 1511 (Super HT-Metal) ,  
\* Belzona 1391 (Ceramic HT) ,  
\* Belzona 4181 (AHR Magma-Quartz) ,

## Problem

The steam chest (part of the main cylinder block on the train engine) had corroded and had several holes due to steam pressure and the corrosive chemicals wearing it away over many years. Without fixing these holes the engine would lose pressure and fail to run.



## Photograph Descriptions

- \* Metropolitan number one shown with a heated application hut built around the front nose section ,
- \* Steam chest after grit blasting and application of Belzona 1511 under doubler plates bolted into place ,
- \* Belzona 1391 applied over the doubler plates ,
- \* Belzona 4181 applied as a final protection from foot traffic ,

## Application Situation

Corroded steam train engine

## Application Method

Application was carried out in accordance with Belzona Know-How System Leaflets ENC-1 and modified FPA-1. Doubler plates were

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ISO 9001:2015

Belzona products are

FS 695214

manufactured under an ISO

ISO 14001:2015

9000 Registered Quality

EMS 695213

Management System.

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bonded in place with Belzona 1511 before being coated with Belzona 1391 to provide corrosion protection. Belzona 4181 was then applied to give additional corrosion resistance and resistance to foot traffic during maintenance work. The repair was then overlaid with fire clay to give an authentic appearance.

## Belzona Facts

A new engine block would cost a minimum of £50,000 (\$85,322.75). Many steam trains are scrapped if they have holes in the engines as it is too costly or not possible to cast this size of engine anymore. Belzona was able to carry out a repair at a fraction of this cost, putting the steam train back into service for the London Underground's 150th anniversary celebration trips through the underground.

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