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METAL PROTECTION SYSTEMS



TEAM VALUES

Safety | Integrity | Collaboration | Determination | Passion for improvement | Responsibility and accountability

Company profile

Dynaciv is the culmination of many years of experience in the application of various epoxy resins to strengthen structures. We have learnt how to adapt epoxy compounds to specifically suit the purpose to improve quality and increase value.

We pride ourselves on our technical expertise and how it knits well with the practical experience we have gained working on large underground infrastructure projects to the smallest repair project.

The Situation

Chemical protection systems have been around for a long time. However many are suited to specific purposes. Galvanising is an economical solution that is long-lasting and effective, however it is also limited to certain projects. One limitation of galvanising is that it cannot be used in acid conditions. Acids will quickly penetrate through galvanising and remove the zinc alloy coating.

Recently Dynaciv were contacted by a large galvanising plant to provide a long-term solution to protect their carrier beams and oven doors. The beams as shown in the photo below are used to transport metal sections from the various acid baths to the oven and finally to the hot dip bath. These beams are exposed to strong acids, moist conditions and temperatures in the excess of 400°C (when over the bath).



Photo of a beam being coated with Dynaciv protective epoxy coat

At the same galvanising plant, the client requested Dynaciv to also provide an economical solution to protect the oven doors. The doors had only been operating for 12 months and had shown signs of significant corrosion.

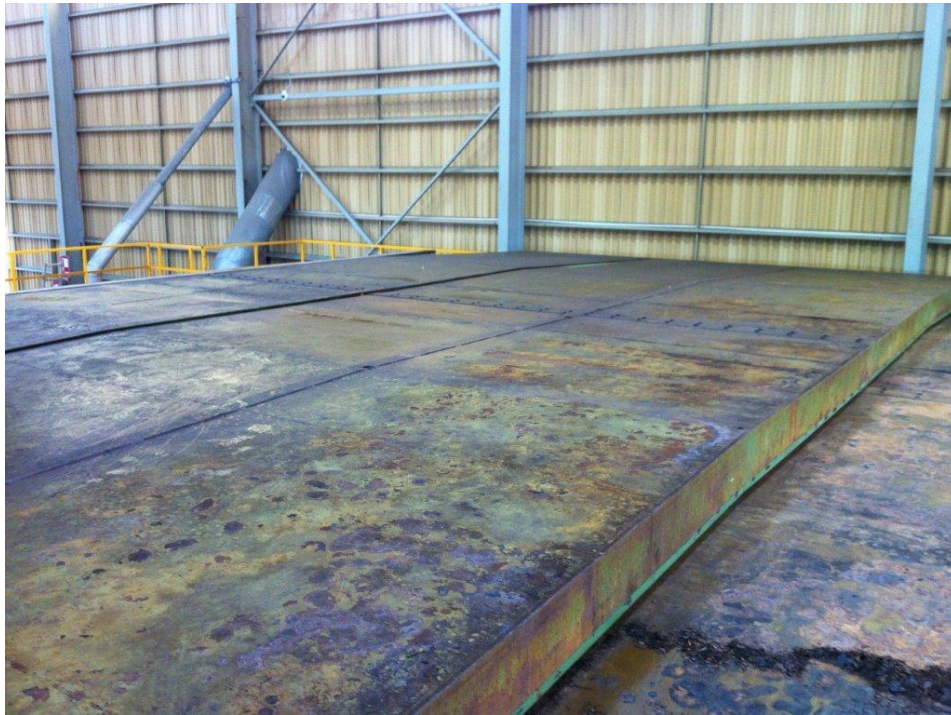


Photo showing oven doors



Photo showing corrosion damages to oven door

The Solution

Dynaciv were contacted to design a system that would protect the oven doors and beams.

One of the technical advisors visited the site to gain a clearer understanding of the coating requirements. A 300 mm X 1000 mm area was prepared to trial three recommended coatings. All coatings made by Dynaciv.



Photo showing 3 samples of different coatings

The three samples were tested for mechanical and chemical strength. Acid was poured on the hot surface and allowed to evaporate. It was also struck with sharp objects to test adhesion. Following these severe tests, sample 2 was chosen as the preferred coating as it had the superior:

- a. Flexibility
- b. Acid resistance
- c. Adhesion

To prepare the doors for the epoxy coating, we blasted the surface to a near white finish (AS.1627.4 Class 2½).



Photo showing abrasive blasting of the oven doors

Soon after a large section was blasted, we applied the first coat of the formulated epoxy to avoid flash rust. The epoxy was applied by a standard epoxy safe roller.



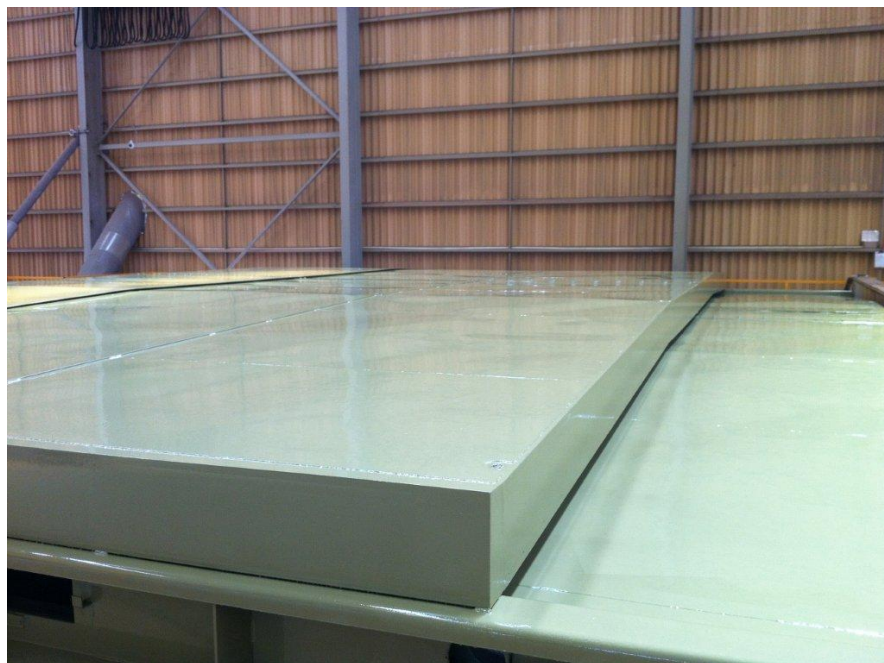
Photo showing half a door already coated

All the doors and supports received a coat of epoxy. After 24 hours, the entire structure received another coat of protective epoxy coating.

The end result is a protective coating that is guaranteed to extend the life of this important asset.



Before



After

Benefits

Costs of replacing assets that have deteriorated due to poor maintenance can set a business back significantly. Along with the significant cost of the asset replacement is the loss of revenue from the down time.

However, this particular client realised the benefits of effective maintenance and the benefits of using Dynaciv.

In summary the benefits of using Dynaciv:

- A product formulated for a specific purpose. This product has the following properties:
 - Excellent adhesion
 - Excellent chemical resistance
 - Excellent flexibility (to move with the expanding metal)
 - Good colour stability
 - Good resistance against high temperatures
 - Can be applied by brush, roller and airless gun
- One contact (preparation, product and application)
- Dynaciv will provide a maintenance schedule to prolong the life of the asset.