

500 Series Oil Cooler Water Boxes



Industry Power Generation
Date Aug 2010
Substrate Cast Iron
Products RS 500P Primer
 RA 500M Glassflake filled epoxy

Environment 60 Degrees Celsius Salt Water Immersed

Challenge Refurbish and extend the operating life of extensively corroded, 35 year old, cooler water boxes. Deep pitting was found in many locations requiring pit filling and reinforcement using composites. Water Boxes were to be coated on site with minimal disruption to adjacent turbine hall. Prepare, coat, cure and complete in a duration of four days.



35 Year old Oil Cooler Cover

Chemco's Solution We recommended coating with Chemco RA 532, a solvent-free epoxy glassflake filled coating, which has excellent resistance to this particular environment.

Scope

Water Boxes - Onsite:

- Needle gun difficult to access areas
- Remove graphitised materials with high pressure water blast at 20,000psi
- Assess damage and apply one coat of RS 500P integrated with a fibreglass matting to cope with low pressure
- Application of two coats of RA 532

Covers - Workshop:

- Abrasive blast to AS1627.4 Sa2.5 with a nominal surface profile of 75µm.
- Hot wash to reduce presence of metallic salts to <25ppm and re-abrasive blast.
- Application of RB 332



Covers after first coat with RB 332

Results

The first unit was coated in 2006 with an expected operating life of two years remaining due to plant redundancy. This unit has continued to remain online and in great condition for a substrate that is more than 60 years old. It is expected to last another ten years.

The newly coated water boxes were done without incurring costs for abrasive blasting, encapsulation and carried out with reduced downtime.



Water boxes after W/B, priming and application of RA 532