High performance anti-corrosion Industrial coating systems

Protective Coating (Internal coating) to Condenser Side of Chillers

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Protective Coating 101 – The Basics
Coating Types
Vinyl Ester Glass Flake – Polyglass VEF
Case Studies
Who We Are
Questions
Protective Coating Application 101 - Basics

- Masking and Fitting SS Sockets and Rods (Anodes)
- Surface Preparation (Grit Blasting, Mechanical clean)
- Coating Application (Spray, Hand Application)
- QA/QC Checks – Dry Film Thickness (DFT), Holiday/Spark Test
- Demask and Clean Up
STAINLESS STEEL FITTINGS AND MASKING

- INSTALL Stainless Steel threaded rods for Anodes
- REPLACE sockets with Stainless Steel: Drains, Probes
- Mask all areas not to be coated.
- Plug all threaded holes.
SURFACE PREPARATION

- Grit blast using garnet.
- Conforms to AS 1627 Pt.4. Class 2.5 (min)
- Surface Profile 65 microns minimum.
- AS 3894.5 – Method 5: Determination of surface profile, Testex tape.
COATING APPLICATION

- Spray method – Tubesheets

Demask and re-tap threads if required.
QA / QC Check

- **Dry Film Thickness – DFT**
  
  *AS 3894.3 – Determination of Dry Film Thickness*
  
  - Minimum 1000 microns*

- **Holiday / Spark Test – To ensure coating integrity**
  
  *AS 3894.1 – Method 1 Non-Conductive coating table D2*
Common Failure

- Coating Delamination
- ‘Bubbling’

- Poor Surface preparation, insufficient surface profile
- Surface contamination.
- Product applied when ambient condition is not right.
- Unsuitable product.
Common Coating Type:

- Vinyl Ester
- Epoxy
- Polyester
- Polyurethane

Common ‘Additive’

- Glass Flake
- Ceramic
Features & Benefits

Comparative Permeability

Coating Type:
- Polyester Resin
- Epoxy Resin
- Polyurethane
- Polyester Laminate
- Polyglass

Permeability (perm. ft^2/sec)
Features & Benefits

Glass flake coatings

- Glass flakes made by Corrocoat
  - 3.0 micron thick
- Glass flakes by others
  - 3.0 to 20.0 micron thick
- Ceramic bead filled
Features & Benefits

Glass Flake in Resin
Corrocoat Polyglass VEF

- Vinyl Ester with Glass Flake
- Very low permeability compared to Epoxy ‘40 times better’.
  - To match the permeability of a 1.2mm thick, Corrocoat Polyglass VEF glass flake coating, you would need to apply a 48mm thick Epoxy coating!
- Thermal expansion similar to mild steel
- Low film stress and lateral shrinkage
- Excellent resistance to undercutting
- Long term corrosion protection
- Low maintenance and low life cycle costs
Plantroom Equipment

- Chiller Tubesheets
- Endcovers, Waterboxes
- Strainers
- Water Pump
- Pipe spools

- Proven service life in excess of 10 years.
Plantroom Equipment
Case Study – Coated in 2012
Case Studies

Oil Cooler Heat Exchanger

Tube Sheets repaired.

Saved replacement costs and down time.
Who We Are?

- Corrosion Engineering Company – Protective Coating.
- World leader in manufacture and application of heavy duty composite coatings.
- Largest glass flake manufacturer in the world.
- R&D and Manufacturing facilities in UK.
- Offices in more than 30 countries.
- 26 years in Australia
- Warranty on Product and Application
- Workshop in Perth and Site Work
Conclusion

- Application Procedure / Method.
- Surface Preparation method.
- Dry Film Thickness (DFT), Spark/Holiday Test
- QA/QC Checks

- **Long term** corrosion protection.
  Case history: In excess of 10 years

- Quality Assured. Warranty
Thank You
Industries We Serve

- Water
- Structural Steel
- Petro Chemical
- Power
- Marine
- Air Conditioning
- Mining
- Oil & Gas

CORROCOAT
Areas of Expertise

- Concrete Bunds
- Repairs & Rebuilds
- Structural Steel
- Heat Exchangers
- Tanks
- Pipeworks
- Pumps & Impellers
- Valves

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