

Advanced Corrosion Protection of Filtrate & Waste Water Tanks Using High-Build Glass Flake Lining



Industry: waste to energy plant

Location: Thailand

Application Area: Filtrate Tank & Waste Water Tank

Project Duration: 9 Days

Product: Duromar® HPL-2131, 2132

Project Overview

The Filtrate Tank and Waste Water Tank were continuously exposed to industrial wastewater, dissolved chemicals, and corrosive process fluids that posed a significant risk of corrosion, coating degradation, and reduced equipment life.

To provide long-term protection, a High-Build Glass Flake Lining System was applied to the internal steel surfaces. The lining provides exceptional chemical resistance and an impermeable barrier against aggressive media, helping to prevent corrosion, improve operational reliability, and significantly extend the service life of the tanks.



Problem

The Filtrate Tank and Waste Water Tank were subjected to aggressive operating conditions, including:

- Continuous exposure to industrial wastewater and process liquids.
- Exposure to corrosive dissolved chemicals.
- High risk of corrosion, steel degradation, and coating failure.
- Potential leakage and metal loss due to corrosion.
- Requirement for long-term chemical and corrosion protection.
- Need for a durable, high-build protective lining system.

Without adequate protection, these operating conditions could significantly reduce equipment reliability and service life.



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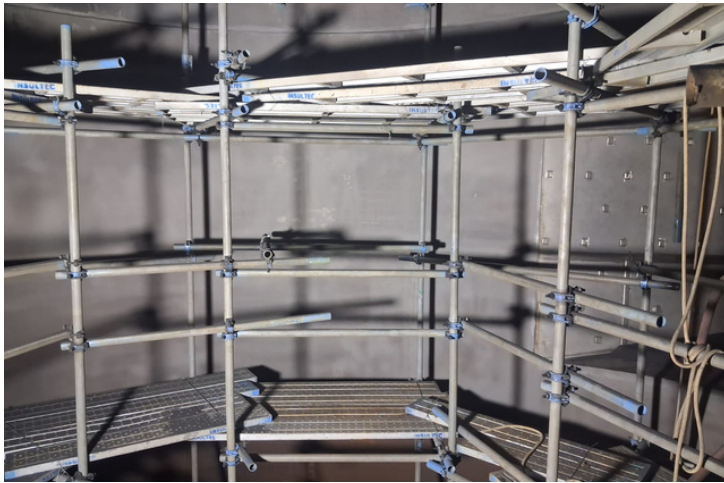


Solution

Duromar® HPL-2131 High-Build Glass Flake Lining was applied at a nominal thickness of 3 mm to provide long-term protection against severe corrosion, chemical attack, and abrasive process conditions. Prior to the full lining application, Duromar® HPL-2132 was applied as a stripe coat on all weld seams, edges, and critical areas to ensure complete coverage and enhanced protection. The combined system forms a durable, seamless, and highly chemical-resistant barrier, improving asset reliability, extending service life, and minimizing long-term maintenance requirements.

Surface Preparation

- **Internal tank surfaces were abrasive blasted to achieve SA 2.5** surface cleanliness in accordance with ISO 8501-1 requirements.
- Abrasive blasting completed to **SA 2.5 (Near White Metal Finish)**.
- Surface profile measured using a **Digital Profile Gauge**.
- Anchor profile achieved between **80–100 microns**.
- Salt contamination testing performed prior to coating application.
- **Salt contamination** values were well below the specified acceptance limit of 70 mg/m².
- **Final inspection confirmed all prepared surfaces were suitable for coating application.**



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Coating Application

- **Duromar® HPL-2132** was applied as a stripe coat over all welding seams.
- **Duromar® HPL-2131 Glass Flake Lining** was applied across the complete internal tank surfaces.
- The lining system was built up to a nominal **3 mm Dry Film Thickness (DFT)**.
- The coating system was allowed to cure for approximately **120 hours** before inspection.
- The total coated area of **112 m²** was completed in accordance with the project specification.



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Inspection & Quality Assurance

A comprehensive QA/QC protocol was implemented at every stage:

- **Material acceptance verification completed before application.**
- **Surface cleanliness verified to SA 2.5 standard.**
- Surface profile confirmed between 80–100 microns.
- **Salt contamination testing** successfully completed.
- **Dry Film Thickness (DFT)** measurements confirmed approximately 3 mm throughout the lining system.
- **Holiday (Spark) testing** carried out at 12 kV.
- **No pinholes, discontinuities, or coating defects detected.**
- **Final visual inspection confirmed uniform coverage** and compliance with project specifications.
- **Final work acceptance successfully completed following joint inspection.**



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Outcome

The completed Glass Flake Lining System provided a highly durable and chemically resistant barrier for both tanks. The project successfully met all inspection and quality requirements, ensuring long-term protection against corrosion, chemical attack, and operational degradation.

Key Highlights:

- **112 m² total internal lining** completed.
- **3 mm High-Build Glass Flake Lining applied.**
- **SA 2.5** Abrasive Blast Surface Preparation achieved.
- **80–100 Micron** Surface Profile verified.
- **Salt Contamination** Below **70 mg/m²** confirmed.
- **120-Hour Controlled Cure** before final inspection.
- **Holiday Testing** at 12 kV with zero pinholes detected.
- **Dry Film Thickness** confirmed at approximately 3 mm.
- **Successfully completed** and accepted after final inspection.
- **Long-term protection against corrosion, chemical attack, and industrial wastewater exposure.**



KEY FEATURES



High-build glass flake protection



Excellent chemical and corrosion resistance



Strong adhesion to blasted steel



Seamless coating reduces corrosion risk



Long service life, low maintenance



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