



Repair & Rebuild of Acid Neutralisation Trench Lines using Duromar® DF-1301, DuroFil, and Duromar® DF-4301

Case Study

Scope of Work

A chemical process plant reported severe deterioration of their acid neutralisation trench lines caused by continuous exposure to aggressive chemicals and mechanical wear. The damaged concrete surfaces exhibited deep cracks, erosion, and chemical attack, posing a risk of leakage, structural weakening, and non-compliance with safety standards.

The client required a long-term repair solution capable of restoring trench line integrity, providing chemical resistance, and extending operational life without frequent shutdowns.

Solution

Arudra Coatings proposed a composite repair and rebuild system using Duromar® high-performance polymer linings and rebuild materials. The approach involved:

- Surface restoration with a high-strength filler to rebuild the eroded trench profile.
- Application of a chemical-resistant barrier lining to ensure protection against strong acids, alkalis, and corrosive effluents.
- Seamless monolithic protection for long-term durability and reduced maintenance.

This methodology ensured the trench lines were restored to near-original condition while achieving superior resistance to chemical attack.

Product

The following Duromar® products were deployed in combination:

- Duromar® DF-1301 – Surface-tolerant primer and barrier coating with excellent adhesion to concrete.
- DuroFil – High-strength epoxy filler designed to rebuild eroded and pitted areas.
- Duromar® DF-4301 – High chemical resistance coating providing a dense, impermeable lining against acid and alkali attack.

Application Procedure

- Surface Preparation:**
- Mechanically cleaned and abrasive blasted the trench surface to remove laitance, chemical residues, and loose concrete.
 - Ensured a sound, roughened profile for proper adhesion.
- Sealing the Concrete with Duromar DF-1301**
- A thin coat of DF-1301 was applied to act as a primer, enhancing adhesion between substrate and topcoat.
- Rebuilding with DuroFil**
- Applied DuroFil to restore the damaged and eroded sections of the trench walls and base.
 - Smoothed and leveled to achieve original trench geometry.
- Final Protection with Duromar® DF-4301**
- Applied multiple coats of DF-4301 to achieve the specified dry film thickness.
 - Created a seamless, high-density lining capable of withstanding continuous exposure to corrosive effluents.

KEY FEATURES



Comprehensive Repair System



Superior corrosion resistance



Versatile Application



High chemical resistance



Superior Adhesion



Extended Service Life