

## Problem

A major railway service and maintenance provider in the EU is responsible for maintaining trains that transport approximately 1.2 million passengers daily. Operating 24 hours per day, 7 days per week, the maintenance department must ensure safety, reliability, and punctuality under demanding operational conditions.

Train underbodies are continuously exposed to:

- ▶ Moisture and condensation
- ▶ Road debris and ballast impact
- ▶ Abrasion from track particles
- ▶ Temperature fluctuations
- ▶ Contaminants accumulated during service

These environmental and mechanical factors accelerate both corrosion and surface wear of underbody components over time. Without effective protection, exposed metal parts may require more frequent maintenance, repair, or replacement, increasing operational workload and lifecycle costs.

The maintenance team therefore required a corrosion protection solution capable of protecting underbody structures while still allowing efficient inspection during routine servicing.



## Tectyl proposed approach

Tectyl proposed a protective coating system specifically designed to protect train underbody components against both corrosion and mechanical abrasion in demanding railway service environments.

The objective was to:

- ▶ Provide durable corrosion protection
- ▶ Improve resistance to mechanical wear
- ▶ Extend maintenance intervals
- ▶ Support long-term operational reliability

In addition, the solution needed to fit seamlessly into existing railway maintenance workflows without complicating inspection procedures. For this reason, a transparent protective coating system was selected, allowing maintenance personnel to visually inspect treated surfaces while maintaining effective corrosion and abrasion protection during continuous operation.

### Solution

Alternative corrosion protection system integrated into OEM Transparent corrosion and abrasion protection for train underbodies

The implemented solution included:

► **Tectyl 300G Clear E**

Tectyl 300G Clear E provides:

**Durable corrosion protection**

Forming a protective barrier against moisture and environmental exposure.

**Abrasion resistance**

Protecting underbody surfaces from mechanical wear caused by ballast and track debris.

**Transparent coating layer**

Allowing inspection of components without removing the protective film.

**Maintenance-friendly application**

Suitable for service and maintenance environments where efficiency and turnaround time are critical.

The product was integrated into the maintenance workflow to ensure consistent application and long-term protective performance.

### Result

The implementation of Tectyl 300G Clear E improved protection of train underbody components against corrosion and abrasion.

Maintenance operations benefited from reduced surface degradation, extended protection intervals, and improved visibility during inspections. The preventive protection strategy supports operational reliability and contributes to safe and efficient railway transport services.

This case demonstrates how targeted underbody corrosion protection enhances durability in continuous railway service operations.

## Tectyl™ 300G Clear E

