Case study: EUROCLASS Vehicle Corrosion Issues

Problem

Public transport operators across Europe face a recurring and costly challenge: premature corrosion of exposed metal components on buses, even when vehicles are relatively new. This issue is particularly evident in wheel arches, underbody structures, seams, and joints where factory-applied protection is insufficient or uneven.

Operating environments accelerate the problem. Road salt, moisture, stone chipping, sand, and debris continuously attack vulnerable areas. Once factory primers or thin underbody coatings are breached, corrosion initiates rapidly and spreads beneath coatings, often remaining invisible until structural damage becomes evident.

For fleet operators, the consequences are significant:
- Reduced vehicle service life
- Increased maintenance and repair costs
- Downtime and operational disruption
- Decreased residual value of assets
- Risk of failing safety or inspection requirements

The core issue is not only corrosion itself, but the lack of a robust, multi-layer corrosion protection strategy applied early in the vehicle lifecycle.

Purpose

- To try to solve the problems with severe corrosion on busses which have been used for several years.
- Find a solution for the aftermarket treatment of those busses
- Advice on follow up treatment after repairs
- Advice on products to use
- Advice on applications and preparations

Tectyl proposed approach

Tectyl provides a preventive, multi-layer corrosion protection system specifically designed for buses operating in aggressive environments. The solution combines active corrosion inhibition, high-build mechanical protection, and long-term durability, applied using controlled industrial processes.

Rather than reacting to advanced corrosion, Tectyl focuses on protecting exposed and high-risk areas of nearly new buses before damage occurs, significantly extending service life and reducing total cost of ownership.

Solution

Preventive corrosion protection system for new and nearly new buses.
Tectyl's recommended solution is a **two-layer corrosion protection system,** optimized for wheel arches, underbody components, and other corrosion-prone zones.

1. Surface preparation

Proper preparation is critical to long-term performance:
- Removal of wheel arch liners and protective panels where required
- High-pressure washing to eliminate dirt, salt, sand, and contaminants
- Mechanical cleaning of exposed metal surfaces using rotating steel brushes where needed
- Compressed air cleaning to remove dust and residual debris

This process ensures optimal adhesion and performance of subsequent coatings.

2. First layer: active corrosion protection

Tectyl 558 AMC is applied as the first layer at approximately 150 microns dry film thickness.

Key functions:
- Penetrates micro-crevices and seams
- Actively inhibits corrosion on bare or lightly oxidized metal
- Seals vulnerable areas and prevents moisture ingress

This layer forms the chemical foundation of the protection system.

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3. Second layer: mechanical and impact protection

After a short flash-off period, a second protective layer is applied.

- **Tectyl 120**
- Typical thickness:
  700–800 microns in wheel arch areas
  400–500 microns on underbody surfaces

This high-build coating provides:

- Excellent resistance to stone chipping and abrasion
- Long-term barrier protection against water and road chemicals
- Flexible, durable performance under thermal and mechanical stress

4. Application equipment

For consistent quality and controlled film thickness, Tectyl recommends professional airless application systems, such as:

- High-pressure pump systems with appropriate spray guns and nozzles
- Application parameters tailored to vehicle geometry and target areas This ensures uniform coverage and repeatable results across entire fleets.

5. Maintenance and inspection strategy

To maximize protection over the vehicle lifecycle:

- Visual inspections every two years
- Localized repair or re-application after mechanical damage or structural repairs
- Integration of corrosion checks into standard maintenance schedules.

RESULT

By implementing this preventive Tectyl corrosion protection system on new or nearly new buses, fleet operators achieve:

- Significant reduction in corrosion-related repairs
- Extended vehicle service life
- Lower long-term maintenance costs
- Improved fleet reliability and appearance
- Higher residual value at end of service

Tectyl transforms corrosion protection from a reactive repair activity into a **strategic asset protection solution,** designed for modern public transport fleets operating under demanding conditions.