User case:

Total cost optimization for bus chassis corrosion protection

Problem

For bus manufacturers, corrosion protection of chassis structures is not only a technical requirement but also an important factor influencing overall production efficiency and lifecycle cost. A bus manufacturer in Poland was therefore looking to optimize the total cost of ownership related to chassis corrosion protection within their production process.

Although the existing coating system provided basic protection, the application process resulted in high material consumption, overspray losses, and frequent maintenance of spray equipment.

In addition, the system generated higher VOC emissions and required more labour during chassis correction and post-application cleaning. These factors increased operational workload and negatively affected overall production efficiency.

While the initial product price appeared competitive, the total process cost per vehicle was significantly influenced by material waste, maintenance interruptions, and additional labour requirements. The manufacturer therefore required a corrosion protection solution that would improve application efficiency, reduce process costs, and maintain reliable protection of bus chassis components exposed to demanding road conditions.

Tectyl proposed approach

Tectyl proposed a two-layer corrosion protection system designed to improve both protective performance and production efficiency within the existing manufacturing process.

The solution combines a penetrating corrosion protection primer with a high-build underbody coating that provides durable resistance to mechanical damage and environmental exposure.

The recommended system included **Tectyl 558 AMC** as the first protective layer and **Tectyl 120** as the final underbody coating. This approach allows the primer to penetrate seams and joints while the high-build coating forms a robust barrier against moisture, road salt, and stone chipping.

In addition to corrosion resistance, the proposed system was evaluated for its impact on material consumption, application efficiency, and overall process stability. The goal was to deliver reliable long-term protection while simultaneously reducing operational complexity and total coating cost per vehicle.

Tectyl™

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Solution

Two-layer chassis protection system

The implemented solution included:

- **Tectyl 558 AMC** applied as a penetrating corrosion protection layer
- **Tectyl 120** applied as a high-build underbody protective coating

This system provided several operational advantages.

The penetrating properties of **Tectyl 558 AMC** ensure effective protection of seams, welds, and complex geometries on chassis structures. The product stabilizes surface conditions and improves adhesion of the protective top layer.

Tectyl 120 forms a thick, durable coating that protects the chassis against mechanical abrasion, stone chipping, and long-term exposure to moisture and road salt.

During production trials the manufacturer observed significant process improvements, including reduced material consumption, lower overspray waste, and longer service intervals for spray equipment and filters.

Result

Although the unit price of the coating system was higher than the previously used material, the optimized application process significantly reduced the overall production cost per vehicle.

Material consumption decreased by approximately 20 percent under theoretical calculations and by up to 30-40 percent under real production conditions. Overspray waste and filter replacement frequency were reduced, while labour required for chassis correction and cleaning of protective masking was minimized.

The implementation of the Tectyl corrosion protection system resulted in improved process efficiency, reduced environmental impact through lower VOC emissions, and better control over the total cost of ownership in bus chassis manufacturing.

Tectyl™ 558 AMC

Tectyl™ 120

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