

Objective

Higher exhaust gas temperatures can result in increased performance of turbo and after treatment systems, resulting in fuel consumption savings and exhaust gas emission reduction.

The aim of the project is to reduce 50% of temperature losses within the exhaust manifold by using a commercially available enamel or plasma sprayed coating on the inside of the manifold of a heavy duty truck.

Research topics

- Coating selection based on:
 - Resistance to thermo shocks, erosion and chemicals
 - Low heat conductivity
- Evaluation of selected coating in engine tests

Industrial benefits

- Plasma sprayed coating was selected and tested in an engine.
- Higher exhaust temperature resulted in 0.2% lower fuel consumption (highway cruising conditions).
- 80 litres of Diesel saved per truck per year. This amounts 4 million litres (≈ 4 M€) per year for the trucks sold by DAF.
- Spin-off activities will be started to further apply this coating to further increase fuel savings.



Thermal loss reduction in DAF exhaust system using an isolating coating – DAF Trucks