



**Research Fund for Coal and Steel**



**Gears with top in-service performance  
developed for  
hybrid and electric vehicles**

**Deliverable D3.1 (D4)**

Collection of the main data related to the process  
parameters employed in the conventional  
carburizing operation

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## **PUBLISHABLE SUMMARY**

The standard carburizing heat treatment processes consists of heating parts to an elevated temperature in a protective atmosphere, carburizing with a carbon enriched atmosphere at austenitizing temperature and then quenching in oil or other medium specially formulated for this process.

At FIAT plants of the Stellantis Group, the conventional steel grade used for the whole transmissions production (ICE) is 27MnCr5 and the Heat Treatment process is performed by the Low Pressure Carburizing and Gas Quenching system (LPC-GQ). A description of the different subsystems and process parameters is detailed, besides the testing procedures and reference material properties of the ICE gears manufactured in these production lines.