

CORAIL PROJECT | 2021 - 2023

The CORAIL project aims to improve the corrosion resistance of Linear Friction Welding (LFW) welded joints made on aluminum alloy blanks. The approach consists of first working on the thermal of the process to study different heat treatments and the development of a numerical model for the simulation of the applied thermal cycle. Then, tests in the LFW environment aim to confirm the impact of the chosen methodology on the performance of the assembly.



2 YRS



353 K€



CORROSION RESISTANCE OF ALUMINUM ALLOYS AFTER LFW WELDING

PROJECT ACHIEVEMENTS

- Setting up an experimental bench and studying different cooling cycles
- Design and production of a tooling for LFW tests with forced spray cooling
- Thermal cycle simulation at the scale of the experimental bench and to the scale of the LFW coupon for tooling design and comparison with the measurements carried out
- Characterization of the performance of the welded material

TECHNICAL & ECONOMIC IMPACTS

- Reduced manufacturing cost
- Reduced environmental impact

INDUSTRIAL APPLICATIONS

The targeted industrial applications are the manufacture of structural parts in 7xxx aluminum alloy machined in blanks welded by LFW and with a geometry close to that of the final parts.