



FLAMINGO

Fabrication of Lightweight Aluminium Metal matrix composites and validation In Green vehicles

Deliverable D 2.5
Updated report on FLAMINGO specification

Lead Beneficiary

MBN

Delivery Date

21st March 2023



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Publishable Executive Summary

Within this document, updates, deviations and additions to set specifications related to materials and products, equipment and processes, recyclability, demonstration and validation have been collected, based on the actual advancements achieved so far in the project. These will constitute the reference for subsequent activities towards the achievement of project objectives.

Materials: the lightweight material variants have been selected among the initial group of matrix alloys and ceramic reinforcements, for the manufacturing of target components by both casting and extrusion processes of AlMMnC.

Components: the design of demonstration components of EV has been defined, based on the topology optimization from ATX design by ALKE and on the manufacturing processes, i.e. casting and extrusion, as well as on target mechanical properties, cost range, testing methodologies.

Processes: updates on requirements for the production methodologies employed in the projects have been provided, considering specific adaptations required for the integration of Nanoparticles, process scale up and target component design. These include HEBM manufacturing of nanoparticle additives, GSC, LPDC, DC and extrusion steps.

Recyclability: technical aspects related to the recycling of Al-MMnC scraps have been revised, based on processing tests performed to comply with recycling requirements, technological availability at large scale and regulatory framework previously identified.