



FLAMINGO

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

Deliverable D 2.1 Specification report on materials to be used

Lead Beneficiary

MBN

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23rd July 2021



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Publishable Executive Summary

MBN, ÖGI and BUL have methodically selected the lightweight materials variants to be targeted in FLAMINGO. These Al-MMnCs have to compete in the market with Advanced High Strength Steels (AHSS), and those solutions that can deliver the highest strength have been reported. As Al-MMnCs are a combination of ceramic reinforcements NPs distributed in an aluminium alloy matrix, several matrix alloys and reinforcements options were considered with respect to the casting and extrusion manufacturing process. The delivered solutions aim at outperforming the specific strength of the AHSS steels.

A group of components have been identified, both from current EVs and the target ALKÈ ATX demonstrator, and for each case Al-MMnCs have been proposed as an alternative to current steel materials, in accordance with the identified aluminium alloys and NPs. The report concludes with a comparison of strengths between currently adopted steels and an estimate of those expected by the proposed Al-MMnCs for each component, system or part proposed, once normalized by the material density.

