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STIR4STEEL

Friction stir welding for improving joinability of high-performance steels for automotive components to boost green road mobility

Deliverable D2.1 (D5)

FSW welded steel samples for mechanical testing

Deliverable No.	D2.1
Related WP	WP2
Deliverable Title	Process parameter optimization for the selected material combination and joint design
Due Date	31.05.2023 (Month 21)
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Dissemination Level	Confidential
Status	Final

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Publishable Summary

Based on the process and tool development for Use Case III, three steel grades were investigated: standard material (42CrMo4), with high sulphur content (42CrMo4R) and with bismuth addition (42CrMo4MB). The effect of the solid-state welding process on the properties of the joints and the distinct weld zones will be evaluated. For this purpose, a “Preliminary welding procedure specification (pWPS)” for every steel grades was created within the task 2.1 and 2.2 (process and tool development). Based on the pWPS, multiple welds were then produced for every steel grade, which can now be used for the mechanical testing and characterization. The results can then be compared with the base material and reference joint values.