



## Deliverable D 4.1

### Test results for joining

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<b>Dissemination Level:</b>	CONFIDENTIAL (CO)
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Document Control Information													
<b>Title</b>	<i>Test results for joining</i>												
<b>Scope / purpose of deliverable</b>	<i>This report describes the obtained test results and associated overall quality of the different joints and joining techniques, applied on the material combinations under research. Metal-to-metal, metal-to-composite and composite-to-composite material combinations are analyzed for different type of metal and composite materials, both first life and (recycled) second life materials. Different online monitoring systems for composite welding are explored with focus on improving quality of the monitoring.</i>												
<b>Expected outcomes / contribution to impact</b>	<i>The differences between the obtained results for material combinations and joining techniques under research are summarized. Also the differences between first and (recycled) second life materials and the effect on the overall quality of the joint become clear.</i>												
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Date	Version	Change/Comment
13.07.2023	V1	<i>Template available</i>
03.08.2023	V2	<i>Neat draft available</i>
12.12.2023	V3	<i>Checked and commented by partners</i>
21.12.2023	V4	<i>Incl. all partner Inputs except for metal-to-metal test results</i>
22.12.2023	UPLOAD221223	<i>Final check and preparation for Upload</i>
	FINAL	<i>Final Deliverable incl. Metal-to-metal test results</i>

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# ABBREVIATIONS

Table 1: List with abbreviations

Acronym	Description
CF	Carbon Fibre
CMT	Cold Metal Transfer
CPT	Consolidated Ply Thickness
CTE	Coefficient of Thermal Expansion
EoL	End of Life
EPDM	Ethylene Propylene Diene Monomer Rubber
FKM	Fluorine Kautschuk Material
FRP	Fibre Reinforced Plastics
HPDC	High Pressure Die Casting
ILSS	Interlaminar Shear Strength
KET	Key Enabling Technology
KPI	Key Performance Indicator
LDED	Laser Directed Energy Deposition
LM-PAEK	Low Melting Poly Aryl Ether Ketone
LPBF	Laser Powder Bed Fusion
NDI	Non-Destructive Inspection
PMMA	Polymethyl Methacrylate
PPS	Poly Phenylene Sulfide
RPT	Roller Peeling Test
SHM	Structural Health Monitoring
SIPN	Semi-Interpenetrating Polymer Networks
SLS	Single Lap Shear
TEP	Thermal Expanding Particles
TP	Thermoplastic Composite
UD	Uni Directional
WAAM	Wire Arc Additive Manufacturing

# 1 PUBLISHABLE SUMMARY

Summary and conclusion will be added in the updated version for which AIT-input will also be integrated in this deliverable, to be uploaded beginning of 2024 (February).

