77th IIW Annual Assembly and International Conference on Welding and Joining
7-12 July 2024
Rhodes, Greece

PP 125

# Optimization of the formation of coating layers in the refurbishment of moulds for the injection moulding of aluminium alloys

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In this paper, the results of research on the quality evaluation of additive coating layers formed by laser are presented. The aim of the experiment was to determine the suitability of an additive material based on maraging steels for the formation of a mould renovation layer for the high-pressure casting of aluminium alloys. The mould material was Dievar steel (1.2343) with one layer. The additional material was in the form of wires with a chemical composition corresponding to steels 1.2343 and 1.6356. The experiment verified the influence of the cladding parameters on the quality of the additive layers. Metallographic analysis by light microscopy was carried out. Structural and EDX analysis was evaluated. The effect of mixing the cladding metal with the base material was also assessed by means of a low load hardness evaluation carried out in accordance with EN ISO 4063-2. For additive manufacturing, additive materials based on medium and high alloy steels can be recommended.

Keywords: laser; cladding; Dievar; Dratec; UTPA 702