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Prague, Czech Republic**Chemical heterogeneity of Inconel 625 overlay with an increased molybdenum content deposited by laser cladding and evaluated by potentiodynamic corrosion test**Klufová Pavla¹, Vostřák Marek² and Chocholátý Ondřej¹¹University of West Bohemia, Czech Republic²New Technologies – Research Centre, University of West Bohemia, Czech Republic

The paper focuses on a detailed analysis of chemical heterogeneity of Inconel 625 overlay with an increased molybdenum content deposited by laser cladding. Within the experimental program 5 samples of laser clads were prepared with a total area of 100 * 150 mm/clad onto a substrate of S355J2 steel. The thickness of substrate was 50 mm. During the laser cladding process, the distribution of the temperature field on the face of the S355J2 steel substrate was monitored by means of a thermal imaging

camera. Surface of Inconel 625 clads were machining to its useful height. The corrosion potential, polarization resistance and corrosion rate in the selected areas of laser clads were determined by the potentiodynamic corrosion test. The obtained results were evaluated with regard to substrate heating during laser cladding process and metallographic structure of Inconel 625 clads with increased molybdenum content.

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