INFLUENCE OF SURFACE PRETREATMENT ON THE QUALITY OF THE VITREOUS ENAMEL COATING

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Abstract:

This paper compares different surface pretreatments of the samples and their influence on the quality of the vitreous enamel coating. In this case, 316L stainless steel was chosen as the base material and a premix enamel coating specially prepared for stainless steel for enameling. Samples prepared by Selective Laser Melting (SLM) were used. Both mechanical (blasting, tumbling) and chemical (pickling) pre-treatments were applied. The surface variation of the differently prepared samples together with the interface between the vitreous enamel coating and the base material were examined by SEM. Microhardness and wear measurements were used to evaluate the quality of the vitreous enamel coating. The results show that different surface pretreatments affect the final enamel coating and its quality.

Keywords:

Vitreous Enamel; Surface Treatment; Coating; SLM; Additive Technology.