Polcom 2020 Abstract

Effects of the Surface Finish on Thin Specimens made by Electron Beam Melting Technology

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Keywords: Additive Layer Manufacturing; structural behavior; material characterization, Electron Beam Melting, Roughness

Summary: Additive Layer Manufacturing (ALM) has been increasingly attracting the research and industry community interest due to the several benefits provided by the layer-by-layer production approach. With respect to the surface finish, process parameters influence significantly the surface roughness. According to the State of the Art, it has been found out that the roughness level may affect the structural performance of ALM products by both quasi-static and fatigue points of view. In this paper, an experimental investigation has been proposed, showing that the roughness level plays a more influent role for thin components, with respect to the quasi-static response. The investigated ALM process concerns the Electron Beam Melting technology (EBM).