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Additive manufacturing for automotive — Qualification principles — Generic machine evaluation and specification of key performance indicators for PBF- LB/M processes

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*Fabrication additive pour l'automobile — Principes de
qualification — Évaluation générique de la machine et
spécifications des indicateurs clefs de performance pour les
procédés PBF-LB/M*

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document provides a methodology to evaluate PBF-LB/M AM-machines in the context of automotive on an objective basis. The need to provide a document standardizing this topic exists because in high-volume industrial production, the reproducibility of the produced component is crucial to meet production goals. Therefore, reproducibility and capability of the machines used for manufacturing need to be evaluated upfront. A methodology and performance characteristics are introduced to enable the evaluation on an objective and quantitative basis. The documentation resulting from the AM-machine evaluation is used to obtain a reliable orientation selection and evaluation of PBF-LB/M AM-machines.

Moreover, the document provides guidelines for machine production key performance indicators (KPIs) which can be used in procurement, production planning and production to improve the understanding between the machine manufacturer and user. The KPIs to be determined within the scope of this document help to systematically evaluate the performance of PBF-LB/M machines. However, this does not necessarily guarantee that the KPIs can always be used to select the most suitable machine for a specific application scenario. Since a large number of very specific influencing factors affect the selection of an optimal machine, situational, individual parameters must be included in the decision. However, the KPIs can form the basis for this decision.

The requirements regarding quality and planning of build jobs are specific for the automotive industry. The introduced generic approach can be expanded to other industries.

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