Accepted Manuscript

Title: Main defects observed in aluminum alloy parts produced by SLM: from causes to consequences

Authors: Cassiopée Galy, Emilie Le Guen, Eric Lacoste,

Corinne Arvieu

PII: S2214-8604(17)30322-6

DOI: https://doi.org/10.1016/j.addma.2018.05.005

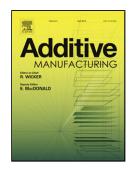
Reference: ADDMA 371

To appear in:

Received date: 26-7-2017 Revised date: 16-2-2018 Accepted date: 3-5-2018

Please cite this article as: Galy C, Le Guen E, Lacoste E, Arvieu C, Main defects observed in aluminum alloy parts produced by SLM: from causes to consequences, *Additive Manufacturing* (2010), https://doi.org/10.1016/j.addma.2018.05.005

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



ACCEPTED MANUSCRIPT

Main defects observed in aluminum alloy parts produced by SLM: from causes to consequences

Cassiopée GALY, Emilie LE GUEN, Eric LACOSTE*, Corinne ARVIEU

Univ. Bordeaux, I2M, UMR 5295, F-33400 Talence, France.

*Corresponding author:

Eric LACOSTE

Present address: I2M, UMR 5295 - Site IUT - 15, rue Naudet - CS 10207 - 33175 - Gradignan Cedex

- FRANCE Tel.: (33)5 56 84 58 65 - Fax: (33)5 56 84 58 43 - email: eric.lacoste@u-bordeaux.fr

HIGHLIGHTS:

• Defects of aluminium alloys SLMed parts are described from causes to consequences

• New prospects for studies concerning SLM and Al- alloys are highlighted

Aluminium alloys studied by SLM are reviewed

Abstract

In recent years, the SLM process has been studied for the production of aluminum alloy parts, as these

alloys demonstrate significant potential for the future, notably due to their low density which allows a

considerable reduction in mass. The aim of this bibliographical study is to identify and classify the

parameters and phenomena which influence the appearance of defects in aluminum alloy parts

produced using the SLM process and hence the final properties of these parts. To do this, a cause tree

diagram was created. For each defect or consequence identified (porosities, defects linked with hot

cracking phenomena, anisotropy in the material and surface quality), we revealed the potential sources

of the appearance of this defect, going back to the initial causes.

Keywords

1

Download English Version:

https://daneshyari.com/en/article/7205834

Download Persian Version:

https://daneshyari.com/article/7205834

<u>Daneshyari.com</u>