



CERTIFICATE OF QUALIFICATION

Document No:
COQ10443203

This is to certify:

That

KSB SE & Co. KGaA
Bahnhofplatz 1, 91257 Pegnitz, Germany

is a qualified manufacturer of:

Additive Manufacturing of metallic parts

in accordance with

DNV-ST-B203 and DNV-SE-0568 Module B

and the following particulars:

AM Facility qualified	KSB SE & Co. KGaA Standort Pegnitz, Bahnhofplatz 1, 91257 Pegnitz, Germany
AM Technologies qualified	Laser beam powder bed fusion (PBF-LB) to AMC 3 level
BPQs qualified	Additive Manufactured B462 NORIBEAM ALLOY 625+U (UNS N06625) for PBF-LB
Parts qualified	Impeller, AMC 3 level as per manufacturer's own specification, PBF-LB and UNS N06625 (AM) material, see page 2 for details.

Reference documents:

Facility description : KSB_Facility doc_PI2131302_rev00

Audit report : 10443203A Rev. 01 & Audit comments to KSB June 2023_rev01_SB

BPQ records : KSB_BPQ_PI2131303_rev00

PQ records : FB03_PQR_PI2103765_2023-001 & 002

Issued at **Oslo, Norway** on **2023-12-19**

This Certificate is valid until **2028-12-18**.

Technical Authority: **Sastry Yagnanna Kandukuri**

for **DNV**

Sondre Løken
Head of Section - Materials Advisory

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Qualified part details

Item	Description
Part(s) name	Impeller NC2094214 001 MCA 01, Impeller UG2087627 001 ZMK 01
Part description	Impeller diameter up to 425mm
Material type	B462 NORIBEAM ALLOY 625+U
AM technology	PBF-LB
Delivery condition/ HT	As built
PPS Number	FB01_PPS_PI2103765_2023-001 – ***2023-015
AMC category	AMC 3
Unique ID of digital file	K230402_IN625+U.openjz K230808_IN625+U.openjz
Unique Id of parameter file	IN625_040_080_HiProM404
Unique ID of AM machine	SI04014057
Reference BPQ number	KSB_BPQ_PI2131303_rev00
PQR Number	FB03_PQR_PI2103765_2023-001_Laufrad FB03_PQR_PI2103765_2023-002_Sauglaufrad