



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM0000133
Revision No:
4

This is to certify:

That

Breitenfeld Edelstahl AG
Breitenfeldstraße 22, 8662 St. Barbara-Mitterdorf,
Austria

is an approved manufacturer of
Steel Forgings

in accordance with

DNV rules for classification – Ships
DNV class programme – DNV-CP-0247 Steel forgings

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for gearing Stainless steel forgings
Steel type	Carbon and carbon-manganese, Alloy, Martensitic stainless
Forging method	Open die forging, ring rolling
Max. weight	See page 2
Heat treatment condition	See page 2

Manufacturer(s) approved by this certificate is/are accepted to deliver according to DNV GL, DNV and GL rules. Materials to be applied to DNV classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Hamburg** on **2025-03-07**

This Certificate is valid until **2028-03-03**.

DNV local unit: **Augsburg**

Approval Engineer: **Christian Wildhagen**



for **DNV**

This document has been digitally signed and will
therefore not have handwritten signature

Stefan Röhr

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.

Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW	OD, RR	5 800	N, NT, QT
Alloy	NV F550AW, NV F600AW, NV F650AW	OD, RR	5 800	QT

Forgings for shafting and machinery

Forgings for gearing

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV F400U, NV F440U, NV F480U, NV F520U, NV F560U, NV F600U, NV F640U, NV F680U, NV F720U, NV F760U	OD, RR	5 800	N, NT, QT
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD, RR	5 800	QT

Stainless steel forgings

Grade	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
1.4939 (X10CrNiMoV12-2-2)	OD, RR	5 800	QT (acc. to standard)
1.4542 (X5CrNiCuNb16-4)	OD, RR	5 800	QT (acc. to standard)

Remarks:

- 1) OD: Open die forging; RR: Ring Rolling
- 2) QT: Quenched and tempered; N: Normalized; NT: Normalized and tempered; N+QT: Normalized followed by quenched and tempered
- 3) Incl. equivalent grades in acc. to other standards