



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002J0
Revision No:
1

This is to certify:

That

Björneborg Steel AB
Kristinehamnsvägen 2, 68161 Björneborg,
Sweden

is an approved manufacturer of
Steel Forgings

in accordance with
DNV rules for classification – Ships

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery
Steel type	Carbon and carbon-manganese, Alloy
Forging method	Open die forging
Max. weight	76 000 kg
Heat treatment condition	See page 2
Additional approval conditions	Including steelmaking

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 **2022-06-08**

for **DNV**

This Certificate is valid until **2024-12-31**.

DNV local station: **Stockholm**

Approval Engineer: **Stefan Röhr**

Thorsten Lohmann
Head of Section

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.



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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	76 000	N, NT, QT
Alloy	NV F550AW, NV F600AW, NV F650AW	OD	76 000	QT

Forgings for shafting and machinery

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	76 000	N, NT, QT
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	OD	76 000	QT

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered
N: Normalized
NT: normalized and tempered
- 3) Incl. equivalent grades in acc. to other standards