



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM000001Y**  
Revision No:  
**5**

This is to certify:

That

**Schmiedag GmbH**  
**Grüntaler Str. 11,**  
**58089 Hagen,**  
**Germany**

is an approved manufacturer of  
**Steel Forgings**

in accordance with  
**DNV rules for classification – Ships**

and the following particulars:

<b>Application area</b>	<b>Forgings for hull structures and equipment Forgings for shafting and machinery Stainless steel forgings</b>
<b>Steel type</b>	<b>Carbon and carbon-manganese, Alloy, Austenitic stainless, See page 2</b>
<b>Forging method</b>	<b>Closed die forging</b>
<b>Max. weight</b>	<b>500 kg</b>
<b>Max. thickness</b>	<b>100 mm</b>
<b>Heat treatment condition</b>	<b>See page 2</b>

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 **2022-07-20**

for **DNV**

This Certificate is valid until **2025-06-30**.

DNV local station: **Essen**

Approval Engineer: **Christian Wildhagen**

**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.



Form code: AM 311

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## Particulars of the approval

### Forgings for hull structures and equipment

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW	CD	500	100	N, QT
Alloy	NV F550AW, NV F600AW, NV F650AW	CD	500	100	QT

### Forgings for shafting and machinery

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F400U, NV F440U, NV F480U, NV F520U, NV F560U, NV F600U, NV F640U, NV F680U, NV F720U, NV F760U	CD	500	100	N, QT
Alloy	NV F600A, NV F700A, NV F800A, NV F900A, NV F1000A, NV F1100A	CD	500	100	QT

### Stainless steel forgings

Steel type <sup>3) 4)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition <sup>2)</sup>
Austenitic stainless	CD	500	100	SHT
	CD	500	100	SHT

### Steels acc. other standards

Grade	Forging method <sup>1)</sup>	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition <sup>2)</sup>
C and C-Mn steels acc. ISO 683-1	CD	500	100	N, QT
Alloy steels acc. ISO 683-2	CD	500	100	QT
Austenitic steels acc. EN 10222-5	CD	500	100	SHT

#### Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered  
N: Normalized  
SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards
- 4) Stainless steel forgings shall be in accordance with recognized standards, e.g. EN 10222, ASTM A473/A965/A1049 and JIS G 3214, provided that supplementary requirements contained herein are also met. Recognition of other standards is subject to submission to the Society for evaluation.