



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00000WY**  
Revision No:  
**2**

This is to certify:

That

**Flanschenwerk Bebitz GmbH**  
Lebendorfer Str. 1, 06420 Könnern,  
Germany

is an approved manufacturer of  
**Steel Forgings**

in accordance with

**DNV rules for classification – Ships**  
**DNV-OS-B101 – Metallic materials**

and the following particulars:

<b>Application area</b>	<b>Forgings for boilers, pressure vessels and piping systems</b>
<b>Steel type</b>	<b>Stainless steel forgings</b> <b>Carbon and carbon-manganese,</b> <b>Alloy,</b> <b>Austenitic stainless,</b> <b>Ferritic-austenitic (duplex) stainless</b>
<b>Forging method</b>	<b>See page 2</b> <b>Open die forging / closed die forging / ring rolling,</b> <b>See page 2</b>
<b>Max. weight</b>	<b>See page 2</b>
<b>Max. diameter / section</b>	<b>See page 2</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 **2022-07-08**

for **DNV**

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

DNV local station: **Hamburg**

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 boilers, pressure vessels and piping systems

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition <sup>2)</sup>
C and C-Mn	VL F450H, VL F490H	OD, CD	600	DN 10 – DN 1400	N, NT, QT
Alloy	VL F0.5Mo, VL F1Cr0.5Mo	OD, CD	600	DN 10 – DN 1400	N, NT, QT
	VL F2.25Cr1Mo	OD, CD	600	DN 10 – DN 1400	N, QT

### Stainless steel forgings

Steel type/Grade <sup>4)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition <sup>2)</sup>
Austenitic	OD, CD, RR	600	DN 10 – DN 1400	SHT
22 Cr Duplex	OD, CD, RR	600	DN 10 – DN 1400	SHT
25 Cr Duplex	OD, CD, RR	600	DN 10 – DN 1400	SHT

### Steels acc. other standards

Grade	Forging method	Max. weight [kg]	Max. diameter [mm]	Heat treatment condition
Steel acc. EN 10025	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard
Steel acc. EN 10088-1, -2, -3	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard
Steel acc. EN 10222-1, -2, -3, -4, -5	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard
ASTM A350	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard
ASTM A694	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard
ASTM A105	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard
ASTM A182	OD, CD, RR	600	DN 10 – DN 1400	acc. to Standard

#### Remarks:

- 1) OD: Open die forging  
 CD: Closed die forging  
 RR: Ring Rolling
- 2) QT: Quenched and tempered  
 N: Normalized  
 NT: Normalized and tempered  
 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.