

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM000000S**  
Revision No:  
**4**

This is to certify:

That

**Gustav Grimm Edelstahlwerk GmbH & Co. KG**  
Ronsdorfer Str. 172-174, 42828 Remscheid,  
Germany

is an approved manufacturer of  
**Steel Forgings**

in accordance with

**DNV rules for classification – Ships**  
**DNV rules for classification – Naval vessels**  
**DNV-OS-B101 – Metallic materials**  
**DNV class programme – DNV-CP-0247 Steel forgings**

and the following particulars:

<b>Application area</b>	<b>Forgings for hull structures and equipment</b> <b>Forgings for shafting and machinery</b> <b>Forgings for boilers, pressure vessels and piping systems</b> <b>Ferritic steel forgings for low temperature service</b> <b>Stainless steel forgings</b> <b>Forgings of liquid quenched and tempered structural steels</b>
<b>Steel type</b>	<b>Carbon and carbon-manganese,</b> <b>Austenitic stainless,</b> <b>Martensitic stainless,</b> <b>Ferritic stainless,</b> <b>Ferritic-austenitic (duplex) stainless</b>
<b>Forging method</b>	<b>Open die forging</b>
<b>Max. weight</b>	<b>10 000 kg</b>
<b>Heat treatment condition</b>	<b>See page 2 ff.</b>
<b>Additional approval conditions</b>	<b>See page 2 ff.</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 **2025-06-06**

This Certificate is valid until **2028-06-30**.

DNV local unit: **Essen**

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 <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F400UW, NV F440UW, NV F480UW, NV F520UW, NV F560UW, NV F600UW	OD	10 000	N, NT, QT

### Forgings for shafting and machinery

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	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	OD	10 000	N, NT, QT

### Forgings for boilers, pressure vessels and piping systems

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F450H, NV F490H	OD	10 000	N, NT, QT

### Ferritic steel forgings for low temperature service

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
C and C-Mn	NV F450L, NV F490L	OD	10 000	N, NT, QT

### Stainless steel forgings

Steel type / grade	Forging method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
Austenitic stainless	OD	10 000	SHT
Martensitic stainless	OD	10 000	QT
Ferritic stainless	OD	10 000	A
22Cr-duplex stainless	OD	10 000	SHT
25Cr-duplex stainless	OD	10 000	SHT

**Forgings of liquid quenched and tempered structural steels**

Steel type / grade	Forging method <sup>1)</sup>	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition <sup>2)</sup>
NV-M550S, NV-M700S	OD	2 500	300	QT
1.6780 (HY-80) acc. to MIL-S-23009C / BWB WL 1.6780-3 1.6782 (HY-100) acc. to MIL-S-23009C / BWB WL 1.6782-3	OD	2 500	300	QT

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered; N: Normalized; NT: Normalized and tempered  
SHT: Solution Heat Treated (Solution Annealing); A: Annealed
- 3) Incl. equivalent grades in acc. to other standards