

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000009R
Revision No:
2

This is to certify:

That
Platestahl Umformtechnik GmbH
Platthofstraße 1
58513 Lüdenscheid,
Germany

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships

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, Austenitic stainless, Ferritic-austenitic (duplex) stainless See page 2
Forging method	Open die forging / ring rolling
Max. weight	See page 2
Max. diameter / section	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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-02-11**

This Certificate is valid until **2023-02-28**.
DNV GL local station: **Essen**

Approval Engineer: **Christian Wildhagen**



for **DNV GL**
Digitally Signed By: Wenning, Martin
Location: DNV GL Hamburg, Germany
Signing Date: 2020-02-12, on behalf of

Thorsten Lohmann
Head of Section

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Form code: AM 311

Revision: 2020-01

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Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD, RR ⁵⁾	1 500	350	N, NT, QT
Alloy	VL F550AW, VL F600AW, VL F650AW	OD, RR ⁵⁾	1 500	350	QT

Forgings for shafting and machinery

Forgings for gearing

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F400U, VL F440U, VL F480U, VL F520U, VL F560U, VL F600U, VL F640U, VL F680U, VL F720U, VL F760U	OD, RR ⁵⁾	1 500	350	N, NT, QT
Alloy	VL F600A, VL F700A, VL F800A, VL F900A, VL F1000A, VL F1100A	OD, RR ⁵⁾	1 500	350	QT

Stainless steel forgings

Steel type	Grade ³⁾⁴⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
Austenitic	-	OD, RR ⁵⁾	1 500	350	SHT
Ferritic-austenitic	22 Cr Duplex	OD, RR ⁵⁾	1 500	350	SHT
	25 Cr Duplex	OD, RR ⁵⁾	1 500	350	SHT

Remarks:

- ¹⁾ OD: Open die forging
RR: Ring Rolling
- ²⁾ QT: Quenched and tempered
N: Normalised
NT: Normalised 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.
- ⁵⁾ Max. outer diameter 2 000 mm for rolled rings