

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001VY
Revision No:
1

This is to certify:

That
Georg Umformtechnik GmbH
Willroth, Germany

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships
Offshore Standard DNV GL-OS-B101

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for crankshafts Forgings for gearing
Steel type(s)	Carbon Carbon-manganese, Alloy
Max. weight	See page 2
Delivery Condition	See page 2
Remarks	For crankshafts above and including 50 kg additional inspection must be arranged

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 **2018-01-08**

This Certificate is valid until **2020-12-19**.

DNV GL local station: **Essen**

Approval Engineer: **Andreas Koch**



for **DNV GL**

Digitally Signed By: Wildhagen, Christian

Location: DNV GL Hamburg, Germany

Signing Date: 2018-01-08 , on behalf of

Thorsten Lohmann

Head of Section



Job Id: **263.11-004695-2**
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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. diameter / section [mm]	Delivery condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD	700	400	N, NT, QT
Alloy	VL F550AW, VL F620AW, VL F650AW	OD	500	400	N, NT, QT

Forgings for crankshafts Forgings for gearing Forgings for shafting and machinery

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. diameter / section [mm]	Delivery condition ²⁾
Alloy	acc. to EN 10083	OD, CD	500	400	QT
	acc. to EN 10084				
	acc. to EN 10250				

Remarks:

- 1) OD: Open die forging
CD: Closed die forging
- 2) QT: Quenched and tempered
N: Normalised
NT: Normalised and tempered
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules