

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001U5

This is to certify:

That

Kind & Co., Edelstahlwerk, GmbH & Co. KG
Wiehl Nordrhein-Westfalen, Germany

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Products	Forgings and seamless forged rings
Max. weight	See particulars
Delivery Condition	See particulars

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 **2017-11-30**

This Certificate is valid until **2020-11-29**.

DNV GL local station: **Essen**

Approval Engineer: **Andreas Koch**



for **DNV GL**

Digitally Signed By: Wildhagen, Christian

Location: DNV GL Hamburg, Germany

Signing Date: 2017-12-08 , on behalf of

Thorsten Lohmann
Head of Section



Particulars of the approval

Forgings and seamless forged rings

Steel type	Grade	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Delivery condition ²⁾
Duplex	1.4462 acc. to EN 10222-5 ³⁾ , acc. to EN 10250-4	OD	14 000	1 300	SHT
	1.4462 acc. to EN 10222-5, acc. to EN 10250-4	SB		700	
	1.4462 acc. to VdTÜV materials data sheet 418	OD & SB		1 300	
Alloy	GL-M550S	OD		1 300	QT
	GL-M550S	SB		700	
	HY-80 acc. to MIL-S-23009	OD		1 300	
	HY-80 acc. to T9074-BD-GIB- 010/0300 Annex E & G	OD			
	HY-80 acc. to MIL-S-23009	SB		700	
	HY-80 acc. to T9074-BD-GIB- 010/0300 Annex E & G	SB			
	1.6780.5 acc. to BWB WL 1.6780-3	OD		1 300	SHT
	1.6780.5 acc. to BWB WL 1.6780-2	SB		700	
	1.3964 acc. to SEW 390	OD		1 300	
	1.3964.9 acc. to BWB WL 1.3964-3	OD			
	1.3974 acc. to SEW 390	OD			
	1.3974.9 acc. to BWB WL 1.3974-3	OD			
	1.3964 acc. to SEW 390	SB	700	SHT	
	1.3964.9 acc. to BWB WL 1.3964-2	SB			
1.3974 acc. to SEW 390	SB				
1.3974.9 acc. to BWB WL 1.3974-2	SB				

Remarks:

- 1) OD: Open die forging - CD: Closed die forging – SB: Steel Bar
- 2) QT: Quenched and tempered - N: Normalised - NT: Normalised and tempered
N+QT: Normalized followed by quenched and tempered - SHT: Solution Heat Treated (Solution Annealing)
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules

RECOGNITION CERTIFICATE

This is to certify:

That DNV GL recognizes the manufacturer's procedures and processes for production and quality control applied for the manufacturing of the below products. The procedures and processes have been found to meet the quality and safety levels set forth in the DNV GL Rules.

for product(s)

Steel material - Transfer of stamping during production

Manufacturer

Kind & Co., Edelstahlwerk, GmbH & Co. KG
Wiehl, Germany

This Certificate is valid until **2022-01-03**.

Issued at **Essen** on **2018-01-04**



for **DNV GL**

This document has been digitally signed and
will therefore not have handwritten signatures

Pfahlert, Andre
Team Leader Station

Successful periodical assessments are a precondition for the validity of this certificate. The current status of the certificate is shown on <http://approvalfinder.dnvgl.com/>