

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:**

**That**

**thyssenkrupp rothe erde Germany GmbH**  
**Beckumer Str. 87, 59555 Lippstadt,**  
**Germany**

is an approved manufacturer of  
**Heat treatment**

in accordance with  
**DNV GL rules for classification – Ships**

and the following particulars:

<b>Application area</b>	<b>Heat treatment workshop</b>
<b>Heat treatment process</b>	<b>Quenching,</b>
	<b>Tempering,</b>
	<b>Stress relieving,</b>
	<b>Induction hardening</b>
<b>Product type</b>	<b>Forging, Gearing, etc.</b>
<b>Steel type</b>	<b>Carbon and carbon-manganese,</b>
	<b>Alloy</b>
<b>Max. Weight</b>	<b>See page 2</b>
<b>Max. wall thickness</b>	<b>See page 2</b>
<b>Remarks</b>	<b>Approved as Independent Heat Treatment Company</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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-01-23**

for **DNV GL**

This Certificate is valid until **2023-01-22**.

DNV GL local station: **Essen**

Approval Engineer: **Christian Wildhagen**

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**Thorsten Lohmann**  
**Head of Section**



Job Id: **263.11-010162-1**  
Certificate No: **AMMM00002N9**

## Particulars of the approval

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### Approval scope for Independent Heat Treatment Company

Item	Description
Product type	Forging, Gearing, etc.
Steel type	Carbon and carbon-manganese, Alloy
Heat treatment process	Quenching, Tempering, Stress relieving, Induction hardening
Max. thickness	Carbon and carbon-manganese: 800 mm Alloy: 800 mm
Furnace details	Working zone: max. Ø 8000 mm Max. Loading weight: max. 30 t