



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00000RN**  
Revision No:  
**2**

This is to certify:

That

**Josef Schonlau Maschinenfabrik und Eisengiesserei GmbH & Co. KG**  
**Ernst-von-Bayen-Straße 22,**  
**59590 Geseke,**  
**Germany**

is an approved manufacturer of  
**Iron Castings**

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

and the following particulars:

<b>Iron type</b>	<b>Grey cast iron, Nodular cast iron</b>
<b>Casting method</b>	<b>See page 2</b>
<b>Max. weight</b>	<b>3 500kg</b>
<b>Max. wall thickness</b>	<b>See page 2</b>
<b>Heat treatment condition</b>	<b>See page 2</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 **2022-08-29**

for **DNV**

This Certificate is valid until **2025-06-30**.

DNV local station: **Essen**

Approval Engineer: **Christian Wildhagen**

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

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.



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## Particulars of the approval

### Cast iron

Iron type	Grade <sup>4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Max. wall thickness [mm]	Heat treatment condition <sup>2)</sup>
Grey	200	SC	3 500	250	AC
	250				
	300				
	350				
	Grades acc. to EN 1561				
Nodular	NV NCI-1	SC	3 500	250	F
	NV NCI-2				F
	NV NCI370				AC/SR
	NV NCI400				AC/SR
	NV NCI500-7				AC/SR
	NV NCI600-3				AC/SR
	NV NCI700				AC/SR
	NV NCI800				AC/SR
	Grades acc. to EN 1563				AC/SR/F
	EN-GJSA-XNiCr20-2 acc. to EN 13835				AC

#### Remarks:

- <sup>1)</sup> SC: Sand casting
- <sup>2)</sup> AC: As cast  
F: Ferritizing  
SR: Stress relieving
- <sup>3)</sup> Incl. equivalent grades in acc. to other standards