

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00001EB**  
Revision No:  
**1**

**This is to certify:**

**That**  
**Friedrich Köster GmbH & Co. KG,**  
**Maschinenfabrik und Gießerei**  
**25746 Heide, Friedrichswerk 1-7,**  
**Germany**

is an approved manufacturer of  
**Steel Castings**

in accordance with  
**DNV GL rules for classification – Ships**  
**DNVGL-OS-B101 – Metallic materials**

and the following particulars:

<b>Iron type</b>	<b>Grey cast iron, Nodular cast iron</b>
<b>Casting method</b>	<b>Sand casting See page 2</b>
<b>Max. weight</b>	<b>6 600 kg</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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-06-08**

for **DNV GL**

This Certificate is valid until **2023-05-31**.

DNV GL local station: **Hamburg**

Approval Engineer: **Andreas Koch**

**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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **263.11-007441-2**  
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## Particulars of the approval

### Cast iron

Iron type	Grade <sup>3)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Max. wall thickness [mm]	Heat treatment condition <sup>2)</sup>
Grey	200	SC	6 600	80	AC
	250				
	300				
	350				
	EN-GJL-200 acc. to EN 1561				
	EN-GJL-250 acc. to EN 1561				
	EN-GJL-300 acc. to EN 1561				
Nodular	VL NCI-1	SC	6 600	80	F
	VL NCI-2	SC	6 600	80	AC
	VL NCI 370				
	VL NCI 400				
	VL NCI 500				
	VL NCI 600				
	EN-GJS-400-18L acc. EN 1563				
	EN-GJS-400-18R acc. to EN 1563	SC	6 600	80	AC
	EN-GJS-350-22 acc. to EN 1563				
	EN-GJS-500-7 acc. to EN 1563				
	EN-GJS-400-18 acc. to EN 1563				
	EN-GJS-400-15 acc. to EN 1563				
	EN-GJS-450-10 acc. to EN 1563				
	EN-GJS-600-3 acc. to EN 1563				

#### Remarks:

- 1) SC: Sand casting
- 2) AC: As cast  
F: Ferritizing
- 3) Incl. equivalent grades in acc. to other standards