

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00001F5**  
Revision No:  
**1**

## This is to certify:

That

**vonRoll casting ag**  
**Rüeggisingerstrasse 2 CH-6020 Emmenbrücke,**  
**Switzerland**

is an approved manufacturer of  
**Iron Castings**

in accordance with  
**DNV GL 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>Sand casting, see page 2</b>
<b>Max. weight</b>	<b>See page 2</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 **2020-10-26**

for **DNV GL**

This Certificate is valid until **2023-07-31**.

DNV GL local station: **Augsburg**

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 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: **263.11-007560-2**  
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## Particulars of the approval

### Cast iron

Iron type	Grade <sup>3)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
Grey	200	SC	600	AC or acc. customer specification
	250			
	300			
	EN-GJL-200 acc. EN 1561			
	EN-GJL-250 acc. EN 1561			
	EN-GJL-300 acc. EN 1561			
Nodular	VL NCI 400	SC	600	AC or acc. customer specification
	VL NCI 450-18			
	VL NCI 500-14			
	VL NCI 600-10			
	EN-GJS-400-15 acc. EN 1563			
	EN-GJS-400-18 acc. EN 1563			
	EN-GJS-450-10 acc. EN 1563			
	EN-GJS-450-18 acc. EN 1563			
	EN-GJS-500-14 acc. EN 1563			
	EN-GJS-600-10 acc. EN 1563			
	GG251 acc. customer specification <sup>4)</sup>			
	EN-GJS-XSiMo3.8-0.6 acc. customer specification <sup>4)</sup>			
	EN-GJS-XSiMo4-0,5 acc. customer specification <sup>4)</sup>			
	EN-GJS-XSiMo4-1 acc. customer specification <sup>4)</sup>			
	EN-GJSA-XNiSiCr35-5-2 acc. customer specification <sup>4)</sup>			

#### Remarks:

- 1) SC: Sand casting
- 2) AC: As cast
- 3) Incl. equivalent grades in acc. to other standards
- 4) Possible application and certification of any material to classed object is subject to case by case approval