



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002ET
Revision No:
1

This is to certify:

That

Hawle Guss GmbH & Duktal Guss Fürstenwalde GmbH
Saarower Chaussee 34, 15517 Fürstenwalde,
Germany

is an approved manufacturer of
Iron Castings

in accordance with

DNV rules for classification – Ships
DNV-OS-B101 – Metallic materials

and the following particulars:

Iron type	Grey cast iron, Nodular cast iron
Casting method	Sand casting, Investment casting
Max. weight	180 kg
Max. wall thickness	See page 2
Heat treatment condition	See page 2
Additional approval conditions	See page 2

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 **2022-01-18**

for **DNV**

This Certificate is valid until **2024-12-31**.

DNV local station: **Magdeburg**

Approval Engineer: **Andreas Koch**

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Thorsten Lohmann
Head of Section

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Particulars of the approval

Cast iron

Iron type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Max. section / wall thickness [mm]	Heat treatment condition ²⁾
Grey	200	SC, IC	180	200	AC, SR
	250	SC, IC	180	200	
	300	SC, IC	180	200	
Nodular	VL NCI-2	SC, IC	180	200	AC, SR, F
	VL NCI 370	SC, IC	180	200	
	VL NCI 400	SC, IC	180	200	
	VL NCI 500	SC, IC	180	200	AC, SR
	VL NCI 600	SC, IC	180	200	
	VL NCI 700	SC, IC	180	200	
	VL NCI 800	SC, IC	180	200	

Remarks:

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