

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001C3
Revision No:
1

This is to certify:

That

Fritz Winter Eisengießerei GmbH & Co. KG
Bürgelweg 1, 35321 Laubach, Germany

is an approved manufacturer of
Iron Castings

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Iron type(s)	Grey cast iron, Nodular cast iron Special cast iron
Max. weight	3 000 kg
Remarks	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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2018-06-19**

for **DNV GL**

This Certificate is valid until **2021-06-30**.

DNV GL local station: **DNV Essen**

Approval Engineer: **Andreas Koch**

Thorsten Lohmann
Head of Section



Job Id: **263.11-004423-3**
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Particulars of the approval

Cast iron

Iron type	Grade	Casting method ¹⁾	Max. weight [kg]	Max. section / wall thickness [mm]	Heat treatment condition ²⁾
Grey	EN-GJL-200 acc. EN 1561	SC	1 000	60	-
	EN-GJL-250 acc. EN 1561				
	EN-GJL-300 acc. EN 1561				
Nodular	VL NCI 400	SC	3 000	70	-
	VL NCI 500				
	VL NCI 600				
	JS 400-15 /S acc. ISO 1083 ³⁾				
	JS 400-18/S acc. ISO 1083 ³⁾				
	JS 500-17 /S acc. ISO 1083 ³⁾				
Special	GJV-450 acc. EN 16079 ⁴⁾	SC	500	30	-
	FW 0004-VD (Varifer®) acc. Fritz Winter Specification FW 0004 dd. 2014-07-07 ⁴⁾				

Remarks:

- 1) SC: Sand Casting
IC: Investment Casting
- 2) F: Ferritizing
SR: Stress relieving
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules
- 4) Possible application and certification of any material to classed object is subject to case by case approval