

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:**That****Vítkovické slévárny spol. s r.o.
OSTRAVA-VÍTKOVICE, Czech Republic**is an approved manufacturer of
Iron Castingsin accordance with
DNV GL rules for classification – Ships

and the following particulars:

Iron type(s)	Nodular Cast Iron, Grey Cast Iron
Max. weight	See page 2
Max. wall thickness	See page 2
Heat treatment condition	As cast, ferritizing, 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 **2017-12-28**for **DNV GL**This Certificate is valid until **2020-12-31**.DNV GL local station: **Ostrava**Approval Engineer: **Stefan Röhr**

Thorsten Lohmann
Head of Section

Particulars of the approval

Cast iron

Iron type	Grade ¹⁾	Casting method ¹⁾	Max. weight [kg]	Max. section / wall thickness [mm]	Heat treatment condition ²⁾
Grey	200	SC	5 300	1 000	AC
	250				
	EN-GJL-150, EN-GJL-200 acc. EN 1561 ³⁾				
Nodular	VL NCI-1	SC	5 300	1 000	F
	VL NCI-2	SC	5 300	1 000	F
	VL NCI 370	SC	5 300	1 000	AC
	VL NCI 400	SC	5 300	1 000	AC
	VL NCI 500	SC	5 300	1 000	AC
	VL NCI 600	SC	5 300	1 000	AC
	VL NCI 700	SC	5 300	1 000	AC
	VL NCI 800	SC	5 300	1 000	AC
	EN-GJS-400-18 acc. EN 1563 ³⁾	SC	5 300	1 000	F
	EN-GJS-500-7 acc. EN 1563 ³⁾	SC	5 300	1 000	AC

Remarks:

- 1) SC: Sand casting
- 2) AC: As cast
F: Ferritizing
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules