

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

**Sachsen Guss GmbH
Obere Hauptstr. 228-230
09228 Chemnitz, Germany**is an approved manufacturer of
Iron Castingsin accordance with
DNV GL rules for classification – Ships

and the following particulars:

Iron type(s)	Grey Cast Iron, Nodular Cast Iron
Max. weight	see particulars of the approval
Remarks	see particulars of the approval

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 **2017-04-10**for **DNV GL**This Certificate is valid until **2019-06-30**.DNV GL local station: **Essen**Approval Engineer: **Gabi Dau**

**Thorsten Lohmann
Head of Section**

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	150	SC	30 000	-	-
	200				
	250				
	300				
Nodular	VL NCI -1	SC	30 000	-	-
	VL NCI -2	SC	30 000	-	F
	VL NCI 370	SC	30 000	-	-
	VL NCI 400	SC	30 000	-	-
	VL NCI 500	SC	30 000	-	-
	VL NCI 600	SC	30 000	-	-
	VL NCI 700	SC	30 000	-	-
	VL NCI 800	SC	30 000	-	-
	EN-GJS-400-18-LT acc. to EN 1563 ³⁾	SC	30 000	-	F
	EN-GJS-400-18-RT acc. to EN 1563 ³⁾	SC	30 000	-	F
	EN-GJS-400-15 acc. to EN 1563 ³⁾	SC	30 000	-	-
	EN-GJS-450-10 acc. to EN 1563 ³⁾	SC	30 000	-	-
	EN-GJS-500-7 acc. to EN 1563 ³⁾	SC	30 000	-	-
	EN-GJS-600-3 acc. to EN 1563 ³⁾	SC	30 000	-	-
EN-GJS-700-2 acc. to EN 1563 ³⁾	SC	30 000	-	-	
EN-GJS-800-2 acc. to EN 1563 ³⁾	SC	30 000	-	-	

Remarks:

- 1) SC: Sand 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

Special conditions:

Subject to case-by-case approval, production welding permitted according following approved WPS:

- WF 1410013 HH Page 01 WPSnr. 7.624 artgleich 2, VP:02/2011 dd. 2011-12-15
- WF 1410013 HH Page 02 WPSnr. 7.624 artfremd 3, VP:05/2011 dd. 2011-12-15
- WF 1410013 HH Page 03 WPSnr. 7.624 artgleich 1, VP:01/2011 dd. 2011-12-15
- WF 1410013 HH Page 04 WPSnr. 7.624 artfremd 1, VP:03/2011 dd. 2011-12-15

Prior to welding DNVGL is to be informed about type and location of welding.