

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

**Josef Schonlau Maschinenfabrik und Eisengießerei GmbH &
Co. KG
Geseke, 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	3 500 kg
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.

This Certificate is valid until **2019-06-30**.Issued at **Hamburg** on **2016-06-27**DNV GL local station: **Essen**Approval Engineer: **Christian Wildhagen**for **DNV GL**

Digitally Signed By: Roehr, Stefan

Location: DNV GL Hamburg, Germany

Signing Date: 2016-06-28, on behalf of

**Thorsten Lohmann
Head of Section**

Particulars of the approval

Cast iron:

Grade	Product	Supply Condition	Casting Method	Weight [kg], max.
VL NCI-1	GGG	F	SC	3 500
VL NCI-2	GGG	F	SC	3 500
VL NCI370	GGG	AC/SR	SC	3 500
VL NCI400	GGG	AC/SR	SC	3 500
VL NCI500	GGG	AC/SR	SC	3 500
VL NCI600	GGG	AC/SR	SC	3 500
VL NCI700	GGG	AC/SR	SC	3 500
VL NCI800	GGG	AC/SR	SC	3 500
Grades acc. to EN 1563	GGG	AC/SR/F	SC	3 500
EN-GJSA-XNiCr20-2 acc. to EN 13835	GGG-A	AC	SC	3 500
Grades acc. to EN 1561	GG	AC	SC	3 500

GGG: nodular cast iron
 AC: as cast
 SC: sand casting

GG: grey cast iron
 F: ferritized

-A: austenitic
 SR: stress relieved