



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00002BS
Revision No:
1

This is to certify:

That
SCHMEES cast Pirna GmbH
Basteistraße 60, 01796 Pirna,
Germany

is an approved manufacturer of
Steel Castings

in accordance with
DNV rules for classification – Ships
DNV-OS-B101 – Metallic materials

and the following particulars:

Application area	Castings for hull structures and equipment Castings for machinery Castings for propellers Castings for boilers, pressure vessels and piping systems Ferritic steel castings for low temperature service Stainless steel castings
Steel type(s)	Carbon and carbon-manganese, Alloy, Ferritic stainless, Martensitic stainless, Austenitic stainless, 22Cr duplex stainless, 25Cr duplex stainless
Max. weight	See page 2 ff.
Heat treatment condition	See page 2 ff.

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 **2022-05-06**

for **DNV**

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

DNV local station: **Magdeburg**

Approval Engineer: **Stefan Röhr**

Thorsten Lohmann
Head of Section

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Particulars of the approval

Castings for hull structure and equipment

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV C400UW, NV C440UW, NV C480UW, NV C520UW, NV C560UW, NV C600UW	SC	10 000	N, NT, QT
Alloy	NV C550AW, NV C620AW	SC	10 000	QT

Castings for machinery

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV C400U, NV C440U, NV C480U, NV C520U, NV C560U, NV C600U	SC	10 000	N, NT, QT
Alloy	NV C550A, NV C600A, NV C690A	SC	10 000	QT

Castings for propellers (propellers/blades/hubs/bosses)

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Martensitic	NV C12Cr1Ni, NV C13Cr4Ni, NV C16Cr5Ni	SC	10 000	QT
Austenitic	NV C19Cr11Ni	SC	10 000	SHT

Castings for boilers, pressure vessels and piping systems

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV C450H	SC	10 000	N, NT, QT
	NV C490H	SC	10 000	N, NT, QT
Alloy	NV C0.5Mo	SC	10 000	NT, QT
	NV C1Cr0.5Mo	SC	10 000	NT, QT
	NV C2.25Cr1Mo	SC	10 000	NT, QT

Ferritic steel castings for low temperature service

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	NV C450L	SC	10 000	N, NT, QT
	NV C490L	SC	10 000	N, NT, QT
Alloy	NV C2.25Ni	SC	10 000	N, NT, QT
	NV C3.5Ni	SC	10 000	N, NT, QT

Stainless steel castings

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Austenitic	GX 2 CrNi 18 10 (304L) GX 5 CrNi 19 9 (304) GX 6 CrNiNb 19 10 (347) GX 2 CrNiMo 19 11 2 (316L) GX 5 CrNiMo 19 11 2 (316) GX 5 CrNiMo 19 11 3 (317)	SC	10 000	SHT
22 Cr Duplex	GX 2 CrNiMoN 22 5 3	SC	10 000	SHT
25 Cr Duplex	GX 2 CrNiMoCuN 25 6 3 3	SC	10 000	SHT

Remarks:

- 1) SC: Sand Casting
- 2) N: Normalized; NT: Normalized and tempered; QT: Quenched and tempered;
SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards