



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000012T
Revision No:
2

This is to certify:

That
ŽDAS, a.s.
Strojirenska 675/6, 591 01 Zdar nad Sazavou,
Czech Republic

is an approved manufacturer of
Steel Castings

in accordance with
DNV rules for classification – Ships
DNV class programme – DNV-CP-0246 Steel castings

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,
Steel type	Carbon and carbon-manganese, Alloy, Austenitic stainless, Martensitic stainless, See page 2
Casting method	Sand casting
Max. weight	50 000 kg
Heat treatment condition	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 classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Hamburg** on **2023-01-11**

for **DNV**

This Certificate is valid until **2025-12-31**.

DNV local unit: **Prague CMC**

Approval Engineer: **Andreas Koch**

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	50 000	N, NT, QT
Alloy	NV C550AW, NV C620AW	SC	50 000	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	50 000	N, NT, QT
Alloy	NV C550A, NV C600A, NV C690A	SC	50 000	QT

Castings for propellers

Steel type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
Martensitic	NV C12Cr1Ni, NV C13Cr4Ni, NV C16Cr5Ni	SC	50 000	QT

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, NV C490H	SC	50 000	N, NT, QT
Alloy	NV C0.5Mo, NV C1Cr0.5Mo, NV C2.25Cr1Mo	SC	50 000	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	C450L, C490L	SC	50 000	N, NT, QT
Alloy	NV C2.25Ni, NV C3.5Ni	SC	50 000	N, NT, QT

Remarks:

- 1) SC: Sand Casting
- 2) N: Normalized
QT: Quenched and tempered
NT: Normalized and tempered
- 3) Incl. equivalent grades in acc. to other standards