



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000033U
Revision No:
1

This is to certify:

That

Akdas Döküm Sanayi ve Ticaret A.S.
Sincan 1. OSB Oguz Cad. No. 40 Ankara,
Türkiye

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 structure and equipment, Castings for machinery, Castings for propellers |
| Steel type | Carbon and carbon-manganese, Alloy, Martensitic stainless |
| Max. weight | See page 2 |
| Max. wall thickness | See page 2 |
| Heat treatment condition | See page 2 |
| Remarks | 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 **2023-12-08**

for **DNV**

This Certificate is valid until **2026-11-07**.

DNV local unit: **Istanbul**

Approval Engineer: **Dechun Lou**

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 structures and equipment

| Steel type | Grade ³⁾ | Casting method ¹⁾ | Max. weight [kg] | Max. wall thickness [mm] | Heat treatment condition ²⁾ |
|------------|--|------------------------------|------------------|--------------------------|--|
| C and C-Mn | NV C400UW, NV C440UW, NV C480UW, NV C520UW, NV C560UW, NV C600UW | SC | 100000 | 517 | NT or QT |
| Alloy | NV C550AW, NV C620AW | SC | 32400 | 300 | NT or QT |

Castings for machinery

| Steel type | Grade ³⁾ | Casting method ¹⁾ | Max. weight [kg] | Max. wall thickness [mm] | Heat treatment condition ²⁾ |
|------------|--|------------------------------|------------------|--------------------------|--|
| C and C-Mn | NV C400U, NV C440U, NV C480U, NV C520U, NV C560U, NV C600U | SC | 100000 | 517 | NT or QT |
| Alloy | NV C550A, NV C600A | SC | 32400 | 300 | NT or QT |

Castings for propellers

| Steel type | Grade ³⁾ | Casting method ¹⁾ | Max. weight [kg] | Max. wall thickness [mm] | Heat treatment condition ²⁾ |
|-------------|---------------------------------------|------------------------------|------------------|--------------------------|--|
| Martensitic | NV C12Cr1Ni, NV C13Cr4Ni, NV C16Cr5Ni | SC | 1831 | 171 | QT |

Remarks:

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