



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001UY
Revision No:
2

This is to certify:

That

Fenix Industries B.V.
Kleibultweg 109, 7575 PB Oldenzaal,
Netherlands

is an approved manufacturer of
Copper Alloy Castings

in accordance with

DNV rules for classification – Ships
DNV class programme – DNV-CP-0251 Copper alloy castings

and the following particulars:

Application area	Castings for valves, fittings and general application
Alloy type	Al-bronze, Sn-bronze, Pb-Sn-bronze, Ni-Al-bronze (NV Cu3), Mn-Al-bronze (NV Cu4)
Manufacturing method	Sand casting
Max. weight	5 000 kg
Max. wall thickness	See page 2
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 **2023-12-27**

This Certificate is valid until **2026-12-31**.

DNV local unit: **Netherlands CMC**

Approval Engineer: **Andreas Koch**



for **DNV**

This document has been digitally signed and will
therefore not have handwritten signature

Christian Wildhagen

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.



Form code: AM 311

Revision: 2022-12

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Page 1 of 2

Particulars of the approval

Castings for valves, fittings and general application

Alloy type	Grade ³⁾	Casting method ¹⁾	Max. weight [kg]	Max. wall thickness [mm]	Heat treatment condition ²⁾
Sn-bronze		SC	5 000	400	AC
PbSn-bronze		SC	5 000	400	AC
Al-bronze		SC	5 000	400	AC
Ni-Al-bronze	NV Cu3	SC	5 000	400	AC
Mn-Al-bronze	NV Cu4	SC	5 000	400	AC

Remarks:

- 1) SC: Sand Casting
- 2) AC: As cast
- 3) Incl. equivalent grades in acc. to other standards