



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00000EY**  
Revision No:  
**3**

This is to certify:

That

**Frese Metal & Stålstøberi A/S**  
**Sorøvej 6, 4200 Slagelse,**  
**Denmark**

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:

<b>Application area</b>	<b>Castings for valves, Fittings and general application</b>
<b>Alloy type</b>	<b>Castings for propellers</b> <b>Al-bronze,</b> <b>Pb-Sn-bronze,</b> <b>Mn-bronze (NV Cu1),</b> <b>Ni-Al-bronze (NV Cu3),</b>
<b>Manufacturing method</b>	<b>See page 2</b>
<b>Max. weight</b>	<b>See page 2</b>
<b>Heat treatment condition</b>	<b>See page 2</b>

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 **2025-05-30**

This Certificate is valid until **2028-03-09**.

DNV local unit: **Copenhagen Fleet In Service**

Approval Engineer: **Andreas Koch**



for **DNV**

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

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 valves, fittings and general application

Alloy type	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
Al-bronze	SC	2 000	AC
Pb-Sn Bronze	SC	2 000	AC

### Castings for propellers

Alloy type	Grade	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
Mn-bronze	NV Cu1	SC	2 000	AC
Ni-Al-bronze	NV Cu3	SC	2 000	AC

Remarks:

- <sup>1)</sup> SC: Sand Casting
- <sup>2)</sup> AC: As cast