

APPROVAL OF MANUFACTURER CERTIFICATE

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 GL rules for classification – Ships

and the following particulars:

Application area	Castings for valves, Fittings and general application
Alloy type	Castings for propellers Al-bronze, Pb-Sn-bronze, Mn-bronze (VL Cu1), Ni-Al-bronze (VL Cu3),
Manufacturing method	Sand casting
Max. weight	See page 2
Heat treatment condition	As cast

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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2019-05-22**

for **DNV GL**

This Certificate is valid until **2022-03-09**.

DNV GL local station: **Copenhagen**

Approval Engineer: **Enno Brück**

Thorsten Lohmann
Head of Section



Job Id: **263.11-009660-1**
Certificate No: **AMMM00000EY**
Revision No: **1**

Particulars of the approval

Castings for valves, fittings and general application

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

Castings for propellers

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

Remarks:

- 1) SC: Sand Casting
- 2) AC: As cast