

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:**

**That**

**Traryds Metall AB**  
**Strömsnäsbruk, Sweden**

is an approved manufacturer of  
**Copper Alloy Castings**

in accordance with  
**DNV GL rules for classification – Ships**

and the following particulars:

<b>Application area</b>	<b>Castings for valves, fittings and general application, Castings for propeller parts</b>
<b>Alloy type</b>	<b>Sn-bronze, Pb-Sn-bronze, Ni-Al-bronze (VL Cu3) Gunmetal Leaded gunmetal</b>
<b>Manufacturing method</b>	<b>Sand casting</b>
<b>Max. weight</b>	<b>See page 2</b>
<b>Max. wall thickness</b>	<b>See page 2</b>
<b>Heat treatment condition</b>	<b>See page 2</b>
<b>Additional approval conditions</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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-06-11**

for **DNV GL**

This Certificate is valid until **2023-06-10**.

DNV GL local station: **Malmö**

Approval Engineer: **Stefan Röhr**

**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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **263.11-009318-1**  
Certificate No: **AMMM00002S8**

## Particulars of the approval

### Castings for valves, fittings and general application

Alloy type/grade	Casting method <sup>1)</sup>	Max. weight [kg]	Max. wall thickness [mm]	Heat treatment condition <sup>2)</sup>
Sn-bronze	SC	150	75	AC
Pb-Sn-bronze	SC	150	75	AC
Ni-Al-bronze	SC	150	75	AC
Gunmetal	SC	150	75	AC
Leaded gunmetal	SC	150	75	AC

### Castings for propeller parts

Alloy type	Grade	Casting method <sup>1)</sup>	Max. weight [kg]	Max. wall thickness [mm]	Heat treatment condition <sup>2)</sup>
Ni-Al-bronze	VL Cu3	SC	150	75	AC

Remarks:

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

### Additional approval conditions

Weld repairs are not allowed