

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00001YR**  
Revision No:  
**1**

**This is to certify:**

**That**

**Raguse & Voss Metallgießerei GmbH**  
**Grauwalling 24, 27580 Bremerhaven, Germany**

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</b>
<b>Alloy type(s)</b>	<b>Phosphor bronze, Gunmetal, Leaded gunmetal, Al-bronze, Ni-Al-bronze</b>
<b>Casting method</b>	<b>Sand casting</b>
<b>Max. weight</b>	<b>2 000 kg</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 **2021-01-20**

for **DNV GL**

This Certificate is valid until **2023-12-31**.

DNV GL local station: **Bremerhaven**

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: **263.11-008572-2**  
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## Particulars of the approval

### Castings for valves, fittings and general application

Grade <sup>3)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Heat treatment condition <sup>2)</sup>
CuSn10-C acc. to EN 1982	SC	2 000	AC
G-CuSn12 acc. to DIN 1705	SC	2 000	AC
G-CuSn10Zn acc. to DIN 1705	SC	2 000	AC
G-CuSn7ZnPb acc. to DIN 1705	SC	2 000	AC
CuSn7ZnPb-C acc. to EN 1982	SC	2 000	AC
CuSn7Zn4Pb7-C acc. to EN 1982	SC	2 000	AC
CuAl10Fe5Ni5-C acc. to EN 1982	SC	2 000	AC
G-CuAl10Ni acc. to DIN 1714	SC	2 000	AC
CuAl9Ni7 acc. To WL 2.0967	SC	2 000	AC
CuAl10Ni5Fe-C acc. to EN 1982 (Cu3)	SC	2 000	AC

Remarks:

- 1) SC: Sand Casting
- 2) AC: As cast
- 3) Including equivalent grades to other standards

**Additional approval conditions:**

Repair welding is in general permitted according to approved procedure

- WPS No. RV001 dd. 2008-09-03 (WF 0810328 HH)

as well as according to other welding procedures approved by DNVGL. The requirements for repair welding as stated in DNVGL- RU-SHIP Pt.2 Ch.2 Section 11 shall be complied with.