



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM000002F**  
Revision No:  
**2**

This is to certify:

That

**OK Kwang Engineering Co., Ltd.**  
**59, Hakjang-ro 169beon-gil, Sasang-gu, Busan,**  
**Republic of Korea**

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

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

and the following particulars:

|                                 |  |
|---------------------------------|--|
| <b>Application area</b>         | <b>Castings for valves, fittings and general application</b> |
| <b>Alloy type</b>               | <b>Sn-bronze,<br/>Pb-Sn-bronze</b>                           |
| <b>Manufacturing method</b>     | <b>Sand casting</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 **2022-09-06**

for **DNV**

This Certificate is valid until **2025-06-29**.

DNV local station: **Busan**

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 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

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## Particulars of the approval

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### Castings for valves, fittings and general application

| Alloy type/grade | Casting method <sup>1)</sup> | Max. weight [kg] | Heat treatment condition <sup>2)</sup> |
|------------------|------------------------------|------------------|--|
| Sn-bronze        | SC                           | 500              | AC                                     |
| Pb-Sn Bronze     | SC                           | 500              | AC                                     |

Remarks:

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