

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000025A
Revision No:
2

This is to certify:

That

LES BRONZES D'INDUSTRIE S.A.
26 rue de la République, Amneville les Thermes,
France

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:

Application area	Castings for valves, fittings and general application
Alloy type(s)	P- bronze Al-bronze, Sn-bronze, Pb-Sn-bronze, Mn-bronze (Cu1), Ni-Al-bronze (Cu3),
Casting method	Centrifugal casting
Max. weight	20 000 kg
Heat treatment condition	See page 2

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 **2024-08-20**

This Certificate is valid until **2027-07-31**.

DNV local unit: **France CMC**

Approval Engineer: **Enno Brück**



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/grade	Casting method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
P-bronze	CC	20 000	AC
Al-bronze	CC	20 000	AC, QT
Sn-bronze	CC	20 000	AC
Pb-Sn-bronze,	CC	20 000	AC
Mn-bronze (Cu1)	CC	20 000	AC
Ni-Al-bronze (Cu3)	CC	20 000	AC

Remarks:

- 1) CC: Centrifugal Casting,
- 2) AC: As cast,
QT: Quenched and tempered