

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00000WS
Revision No:
2

This is to certify:

That
Emil Müller GmbH Metallwerk
Reichshof-Hespert, Germany

is an approved manufacturer of
Wrought Copper and Copper Alloys

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Application area	Copper and copper alloy tubes
Alloy type	Phosphorus-deoxidised copper, Copper-Nickel 90-10, Copper-Nickel 70-30, Aluminium Brass, Admiralty Brass
Manufacturing method	Seamless
Max. outer diameter	See page 2
Max. wall thickness	See page 2
Heat treatment condition	See page 2
Additional approval conditions	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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2019-10-23**

for **DNV GL**

This Certificate is valid until **2022-08-31**.

DNV GL local station: **Essen**

Approval Engineer: **Stefan Röhr**

.....
Thorsten Lohmann
Head of Section



Job Id: **263.11-003301-3**
Certificate No: **AMMM00000WS**
Revision No: **2**

Particulars of the approval

Copper and copper alloy tubes

Designation	Grade	Manufacturing method ¹⁾	Max. outer diameter [mm]	Max. wall thickness [mm]	Heat treatment condition
Phosphorus-deoxidised copper	Cu-DHP acc. to EN 12449 / 12451	HFS/CFS	70	7	acc. to standard
Copper-Nickel 90-10	CuNi10Fe1Mn acc. to EN 12449 / 12451	HFS/CFS	70	7	acc. to standard
Copper-Nickel 70-30	CuNi30Mn1Fe acc. to EN 12449 / 12451	HFS/CFS	70	7	acc. to standard
Aluminium Brass	CuZn20Al2As acc. to EN 12449 / 12451	HFS/CFS	70	7	acc. to standard
Admiralty Brass	CuZn28Sn1As acc. to EN 12449 / 12451	HFS/CFS	70	7	acc. to standard

Remarks:

¹⁾ HFS: hot finished seamless; CFS: cold finished seamless

Additional approval conditions

Including eddy current testing in place of hydraulic testing