

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

Göpfert AG
Industriestraße, 25795 Weddingstedt,
Germanyis an approved manufacturer of
Copper Alloy Castingsin accordance with
DNV GL rules for classification – Ships

and the following particulars:

Alloy type(s)	Sn-bronzes, Pb-Sn-bronzes, Al-Bronze
Max. weight	500 kg
Remarks	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 **2017-07-31**for **DNV GL**This Certificate is valid until **2020-06-30**.DNV GL local station: **Hamburg**Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section

Job Id: **263.11-007660-1**
Certificate No: **AMMM00001KS**

Particulars of the approval

Castings for valves, fittings and general application

Alloy type	Grade ²⁾	Casting method ¹⁾	Max. weight [kg]	Max. section / wall thickness [mm]
Sn-bronze	CuSn10Zn acc. DIN 1705	SC	500	100
	CuSn10-C acc. EN 1982	SC	500	100
Pb-Sn-bronze	CuSn5Zn5Pb5-C acc. EN 1982	SC	500	100
	CuSn5Zn5Pb2-C acc. EN 1982	SC	500	100
Al-bronze	CuAl10Fe5Ni5-C acc. EN 1982	SC	500	100

Remarks:

- 1) SC: Sand Casting
- 2) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules