



# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00002XG**

This is to certify:

That

**Tycon Alloy Industries (Zhongshan) Co., Ltd.**  
**28 Wugui Road, Cuiheng New District, Zhongshan City, Guangdong Province,**  
**China**

is an approved manufacturer of  
**Steel Castings**

in accordance with

**DNV GL rules for classification – Ships**  
**DNVGL-OS-B101 – Metallic materials**

and the following particulars:

|                                 |  |
|---------------------------------|--|
| <b>Application area</b>         | <b>Castings for boilers, pressure vessels and piping systems,<br/>Stainless steel castings</b> |
| <b>Steel type</b>               | <b>Austenitic stainless</b>  |
| <b>Casting method</b>           | <b>See page 2</b>  |
| <b>Max. weight</b>              | <b>1 500 kg (Sand casting), 120 kg (Investment Casting)</b>                                    |
| <b>Max. wall thickness</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 **2021-11-25**

for **DNV**

This Certificate is valid until **2024-11-24**.

DNV local station: **China South NB**

Approval Engineer: **Andreas Koch**

**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

Revision: 2021-03

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## Particulars of the approval

### Stainless steel castings

| Steel type | Grade <sup>3)</sup>   | Casting method <sup>1)</sup> | Max. weight [kg]             | Max. section / wall thickness [mm] | Heat treatment condition <sup>2)</sup> |
|------------|---|------------------------------|------------------------------|------------------------------------|--|
| Austenitic | GX 2 CrNi 18 10 (304L)<br>GX 5 CrNi 19 9 (304)<br>GX 6 CrNiNb 19 10 (347)<br>GX 2 CrNiMo 19 11 2 (316L)<br>GX 5 CrNiMo 19 11 2 (316)<br>GX 5 CrNiMo 19 11 3 (317) | SC, IC                       | 1 500 kg (SC)<br>120 kg (IC) | 200                                | SHT                                    |

Remarks:

- 1) SC: Sand Casting  
IC: Investment Casting
- 2) SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards

Special conditions:

- Repair welding is permitted in accordance with approved procedure: PQR210301 dated 2021.07.15 as well as in accordance with other welding procedures approved by DNV GL. The requirements for repair welding as stated in DNVGL- RU-SHIP Pt.2 Ch.2 Section 8 shall be complied with.
- Including austenitic stainless steel for approved low-temperature applications