

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

Luda (Taian) Industrial Co., Ltd.
Development Zone of Wangguadian Town
Feicheng City, Shandong Province, China

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Application area	Forgings for boilers, pressure vessels and piping systems
Steel type	Stainless steel forgings Carbon and Carbon-Manganese, Austenitic Stainless
Forging method	See page 2
Max. weight	See page 2
Max. thickness	See page 2
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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2019-09-13**

This Certificate is valid until **2022-09-12**.

DNV GL local station: **Qingdao**

Approval Engineer: **Stefan Röhr**



for **DNV GL**

Digitally Signed By: Lohmann, Thorsten
Location: DNV GL Hamburg, Germany
Signing Date: 2019-10-18

Thorsten Lohmann
Head of Section



Particulars of the approval

Forgings for boilers, pressure vessels and piping systems

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F450H, VL F490H	OD/CD	300	200	N

Stainless steel forgings

Steel type / grade ⁴⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
Austenitic stainless	OD/CD	300	200	SHT

Remarks:

- 1) OD: Open die forging; CD: Closed die forging
- 2) N: Normalized; SHT: Solution Heat Treated (Solution Annealing)
- 3) Incl. equivalent grades in acc. to other standards
- 4) Stainless steel forgings shall be in accordance with recognized standards, e.g. EN 10222, ASTM A473/A965/A1049 and JIS G 3214, provided that supplementary requirements contained herein are also met. Recognition of other standards is subject to submission to the Society for evaluation.