

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:

That

ILA-Langner GmbH & Co. KG
Zum Rommelsberg 9
35713 Eschenburg-Eibelshausen,
Germany

is an approved manufacturer of
Pressed Parts

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Application area	Pressed parts (dished ends and manhole cover)
Steel type	Carbon and carbon-manganese, See page 2
Manufacturing method	Cold forming
Max. thickness	8 mm
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 **2020-09-21**

for **DNV GL**

This Certificate is valid until **2023-09-20**.

DNV GL local station: **Essen**

Approval Engineer: **Christian Wildhagen**

Thorsten Lohmann
Head of Section

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Job Id: **263.11-010775-1**
Certificate No: **AMMM00002T3**

Particulars of the approval

Pressed parts (dished ends and manhole cover)

Steel type	Manufacturing method ¹⁾	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	CF	8	AF

Remarks:

- ¹⁾ CF: cold forming
- ²⁾ AF: as formed (see special conditions)

Special conditions:

Acc. DNVGL-RU-Ship Pt.2 Ch.2 Sec.3 [5], for cold-formed dished ends made of steel grades with nominal yield strengths not exceeding 275 MPa, heat treatment is not required if all of the following conditions are fulfilled:

- the temperature of the charging media is -10°C or above,
- the design temperature $T_D \leq 120^{\circ}\text{C}$ and the nominal wall thickness $t \leq 8$ mm