

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM0000172**  
Revision No:  
**2**

## This is to certify:

That

**S.C. LIBERTY Galati S.A.**  
**Calea Smardan Nr. 1, 800698 Galatz**  
**Romania**

is an approved manufacturer of  
**Steelmaking and Rolled Steel Products**

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

and the following particulars:

<b>Application area</b>	<b>Normal strength steel</b> <b>High strength steel</b> <b>Z-grade steels (plates with through thickness properties)</b> <b>Steels for boiler and pressure vessels</b> <b>Steel for low temperature service</b>
<b>Product</b>	<b>Plates, Strip</b>
<b>Manufacturing method</b>	<b>Basic oxygen converter,</b> <b>Ingot or Continuous casting</b>
<b>Max. thickness / diameter</b>	<b>See page 2</b>
<b>Heat treatment condition</b>	<b>See page 2</b>
<b>Additional approval conditions</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 GL classed object shall fulfill the material requirements in the applicable DNV GL class rules.

Issued at **Hamburg** on **2020-02-06**

for **DNV GL**

This Certificate is valid until **2023-01-29**.

DNV GL local station: **Galatz**

Approval Engineer: **Andreas Koch**

**Thorsten Lohmann**  
**Head of Section**

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## Particulars of the approval

### Normal strength steel

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>	Z-quality
VL A, VL B, VL D	Plate	BOC, CC	Al	25	AR	-
VL A, VL B, VL D, VL E	Plate	BOC, IC or CC	Al, Al+Nb	100	N	Z35
VL A, VL B, VL D	Plate	BOC, CC	Al, Al+Nb	60	NR	Z35
VL E	Plate	BOC, CC	Al	60	N	Z35
VL A, VL B, VL D, VL E	Strip	BOC, CC	Al	12	NR	-
	Strip	BOC, CC	Al	12	N	-

### High strength steel

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>	Z-quality
VL A32, VL A36, VL D32, VL D36	Plate	BOC, CC	Al, Al+Nb	60	NR	Z35
VL A32, VL A36, VL D32, VL D36, VL E36	Plate	BOC, IC or CC	Al, Al+Nb	100	N	Z35
VL E32	Plate	BOC, IC or CC	Al	100	N	Z35
VL A32, VL A36, VL D32, VL D36, VL E32, VL E36, VL F32, VL F36	Plate	BOC, CC	Al+Nb	50	N	Z35
VL A32, VL A36, VL D32, VL D36, VL E36	Strip	BOC, CC	Al	12	NR	-
	Strip	BOC, CC	Al	12	N	-

### Rolled steels for boiler and pressure vessels

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>	Z-quality
VL 410-0 A VL 460-0-A	Plate	BOC, CC	Al	25	AR	-
VL 410-0 N VL 410-1 FN VL 460-0 N VL 460-1 FN VL 490-0 N VL 490-1 FN VL 510-1 FN	Plate	BOC, CC	Al	60	N	-

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**Steel for low temperature service**

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>	Z-quality
VL 4-2	Plate	BOC, CC	Al+Nb+V	40	N	-

**Steels acc. to other standards<sup>3)</sup>**

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>	Z-quality
Steel acc. to EN 10025-2						
S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S355K2	Plate	BOC, IC or CC	Acc. standard	100	Acc. standard	Z35
S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S355K2	Strip	BOC, IC or CC	Acc. standard	12	Acc. standard	-

Remarks:

- 1) BOC: Basic oxygen converter  
 CC: Continuous casting  
 IC: Ingot casting
- 2) AR: as rolled  
 NR: normalising rolling  
 N: normalised
- 3) Possible application and certification of any material to classed object is subject to case by case approval