

# APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:  
**AMMM00000SJ**  
Revision No:  
**2**

**This is to certify:**

**That**

**"Ilyich Iron and Steel Works of Mariupol" PJSC  
1, Levchenko Street, 87504 Mariupol, Ukraine**

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 High strength steel Z-grade steels (plates with through thickness properties)</b>
<b>Products</b>	<b>Plates</b>
<b>Manufacturing method</b>	<b>Basic oxygen converter, Continuous casting</b>
<b>Max. thickness</b>	<b>See page 2</b>
<b>Heat treatment condition</b>	<b>As rolled, normalized/controlled rolled, thermo-mechanically rolled</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 **2020-02-05**

for **DNV GL**

This Certificate is valid until **2022-06-30**.

DNV GL local station: **Odessa**

Approval Engineer: **Stefan Röhr**

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

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Job Id: **263.11-006145-3**  
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## Particulars of the approval

### Normal strength steel

Grade <sup>3)</sup>	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Supply Condition	Z-quality
VL A, VL B	Plate	BOC, CC	Al, Al+Ti	50	AR	-
		BOC, CC	Al+Ti	50	NR/CR	Z35
VL D	Plate	BOC, CC	Al, Al+Ti	50	NR/CR	Z35
VL E	Plate	BOC, CC	Al+Ti	50	TM	Z35

### High strength steel

Grade <sup>3)</sup>	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Supply Condition	Z-quality
VL A32, VL A36, VL D32, VL D36, VL E32, VL E36	Plate	BOC, CC	Al+V+Ti, Al+Nb+Ti	50	TM	Z35
VL A32, VL A36, VL D32, VL D36, VL E32, VL E36, VL A40, VL D40, VL E40	Plate	BOC, CC	Al+Nb+V+Ti	50	TM	Z35

#### Remarks:

- 1) BOC: Basic oxygen converter  
CC: Continuous casting
- 2) AR: as rolled  
CR: controlled rolled  
NR: normalising rolling  
TM: thermo-mechanical rolling
- 3) The mentioned VL grades cover the accordant NV and GL grades of former legacy DNV and GL without restrictions of any kind.