

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:****That****"Ilyich Iron and Steel Works of Mariupol" PJSC  
Mariupol, Ukraine**is an approved manufacturer of  
**Steelmaking and Rolled Steel Products**in accordance with  
**DNV GL rules for classification – Ships**

and the following particulars:

|                             |  |
|-----------------------------|--|
| <b>Product</b>              | <b>Plates</b>  |
| <b>Grade(s)</b>             | <b>Rolled steel for structural application</b>                             |
| <b>Steelmaking</b>          | <b>Basic Oxygen Converter,<br/>Continuous casting</b>                      |
| <b>Deoxidation</b>          | <b>Killed</b>  |
| <b>Fine grain elements</b>  | <b>See particulars of the approval</b>                                     |
| <b>Delivery conditions</b>  | <b>As rolled, normalized/controlled rolled, thermo-mechanically rolled</b> |
| <b>Max. thickness/diam.</b> | <b>See particulars of the approval</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 **2016-07-06**This Certificate is valid until **2019-06-30**.  
DNV GL local station: **Nikolaev**Approval Engineer: **Christian Wildhagen**for **DNV GL**

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

Job Id: **263.11-006145-1**  
 Certificate No: **AMMM00000SJ**

## Particulars of the approval

### Rolled steel products:

| Grade   | Product | Supply Condition | Thickness [mm], max. | Fine grain elements  | Z-quality |
|---|---------|------------------|----------------------|----------------------|-----------|
| <b>Normal strength steels</b>   |         |                  |                      |                      |           |
| VL A, VL B,<br>NV A, NV B,<br>GL-A, GL-B  | BL      | AR               | 50                   | Al,<br>Al+Ti         | -         |
|   | BL      | NR/CR            | 50                   | Al+Ti                | Z35       |
| VL D,<br>NV D,<br>GL D  | BL      | NR/CR            | 50                   | Al,<br>Al+Ti         | Z35       |
| VL E,<br>NV E,<br>GL-E  | BL      | TM               | 50                   | Al+Ti                | Z35       |
| <b>Higher strength steels</b>   |         |                  |                      |                      |           |
| VL A32, VL A36,<br>VL D32, VL D36,<br>VL E32, VL E36,<br>NV A32, NV A36,<br>NV D32, NV D36,<br>NV E32, NV E36,<br>GL-A32, GL-A36,<br>GL-D32, GL-D36,<br>GL-E32, GL-E36  | BL      | TM               | 50                   | Al+V+Ti,<br>Al+Nb+Ti | Z35       |
| VL A32, VL A36,<br>VL D32, VL D36,<br>VL E32, VL E36,<br>VL A40, VL D40, VL E40<br>NV A32, NV A36,<br>NV D32, NV D36,<br>NV E32, VL E36,<br>NV A40, NV D40, NV E40<br>GL-A32, GL-A36,<br>GL-D32, GL-D36,<br>GL-E32, GL-E36,<br>GL-A40, GL-D40, GL-E40 | BL      | TM               | 50                   | Al+Nb+V+Ti           | Z35       |

BL: plate

AR: as rolled

N: normalized

NR/CR: normalized/controlled rolled

TM: thermo-mechanically rolled