

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:**

That

**INDUSTEEL FRANCE SAS**

**118 route des Etaings BP 368, 42800 Chateauneuf Loire,  
France**

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>High strength steel Extra high strength steel Steels for boiler and pressure vessels Steel for low temperature service</b>
<b>Products</b>	<b>Plates</b>
<b>Manufacturing method</b>	<b>Electric ARC furnace, Ingot 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 **2019-08-28**

for **DNV GL**

This Certificate is valid until **2021-07-30**.

DNV GL local station: **Marseille**

Approval Engineer: **Christian Wildhagen**

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



Job Id: **263.11-002718-7**  
 Certificate No: **AMMM00000XW**  
 Revision No: **4**

## Particulars of the approval

### High strength steel

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>
VL A32, VL D32, VL E32 VL A36, VL D36, VL E36	Plate	EAF, IC	Nb+V	250	N

### Extra high strength steel

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>
VL A620, VL D620, VL F620, VL A690, VL D690, VL E690 <sup>3)</sup>	Plate	EAF, IC	Al+V	254	QT
VL AO620, VL DO620, VL FO620, VL AO690, VL DO690, VL EO690 <sup>3)</sup>	Plate	EAF, IC	AAI+V	254	QT
VL FO690 <sup>4)5)</sup>	Plate	EAF, IC	Al+V	215	QT

### 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>
VL 0.3Mo, VL 1Cr0.5Mo, VL 2.25Cr1Mo	Plate	EAF, IC	-	140	N, NT, QT

### Steel for low temperature service

Grade	Product	Steel making <sup>1)</sup>	Fine grain elements	Max. thickness [mm]	Delivery condition <sup>2)</sup>
VL 5Ni	Plate	EAF, IC	-	140	N, NT, QT

#### Remarks:

- 1) EAF: Electric arc furnace  
IC: Ingot casting
- 2) N: normalised  
NT: normalized and tempered  
QT: quenched and tempered
- 3) Maximum heat input for weldability testing was 2 kJ/mm.
- 4) Maximum heat input for weldability testing was 3.5 kJ/mm.
- 5) According updated IACS UR W16, CTOD testing and a crack susceptibility weld test is required. Until reception of appropriate test reports, extra high strength steel grades are granted approval in accordance with DNVGL-OS-B101.