

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:**

That  
**AKMETAL Metalurji Endustrisi A.S.**  
**Istanbul, Turkey**

is an approved manufacturer of  
**Steel Castings**

in accordance with  
**DNV GL rules for classification – Ships**  
**DNV GL offshore standards**

and the following particulars:

<b>Application area</b>	<b>Castings for hull structures and equipment</b>
<b>Steel type</b>	<b>Castings for machinery</b>
<b>Casting method</b>	<b>Carbon and carbon-manganese,</b>
<b>Max. weight</b>	<b>Alloy</b>
<b>Heat treatment condition</b>	<b>Sand casting</b>
<b>Additional approval conditions</b>	<b>12 000 kg</b>
	<b>Normalized, normalized and tempered, quenched and tempered,</b>
	<b>see page 2</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 **2018-08-01**

for **DNV GL**

This Certificate is valid until **2021-06-30**.

DNV GL local station: **Istanbul**

Approval Engineer: **Christian Wildhagen**

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



Job Id: **263.11-004611-3**  
Certificate No: **AMMM000025T**

## Particulars of the approval

### Castings for hull structure and equipment

Steel type	Grade <sup>3)4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Max. section / wall thickness [mm]	Delivery condition <sup>2)</sup>
C and C-Mn	VL C400UW, VL C440UW, VL C480UW	SC	12 000	250	N, NT, QT
Alloy	VL C550AW, VL C620AW	SC	12 000	250	QT

### Castings for machinery

Steel type	Grade <sup>3)4)</sup>	Casting method <sup>1)</sup>	Max. weight [kg]	Max. section / wall thickness [mm]	Delivery condition <sup>2)</sup>
C and C-Mn	VL C400U, VL C440U, VL C480U, VL C520U	SC	12 000	250	N, NT, QT
Alloy	VL C550A, VL C600A, VL C690A	SC	12 000	250	QT

#### Remarks:

- 1) SC: Sand Casting
- 2) N: Normalised  
QT: Quenched and tempered  
NT: Normalised and tempered
- 3) Certification of any material applied to classed object shall fulfill the applicable material requirements in the DNV GL class rules
- 4) Incl. equivalent grades in acc. to other standards