

# APPROVAL OF MANUFACTURER CERTIFICATE

**This is to certify:**

That  
**AKMETAL Metalurji Endustrisi A.S.**  
**Eski Ankara Asfaltı Cad. 236 Tepeören Mah.,**  
**34959 Tuzla, Istanbul,**  
**Turkey**

is an approved manufacturer of  
**Steel Forgings**

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

and the following particulars:

<b>Application area</b>	<b>Forgings for hull structures and equipment</b> <b>Forgings for shafting and machinery</b>
<b>Steel type(s)</b>	<b>Carbon and carbon-manganese,</b> <b>Alloy</b>
<b>Forging method</b>	<b>Open die forging</b>
<b>Max. weight</b>	<b>7 000 kg</b>
<b>Heat treatment condition</b>	<b>Normalized, normalized and tempered, quenched and</b> <b>tempered</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 **2017-10-11**

for **DNV GL**

This Certificate is valid until **2020-06-30**.

DNV GL local station: **Istanbul**

Approval Engineer: **Christian Wildhagen**

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



## Particulars of the approval

### Forgings for hull structures and equipment

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Delivery condition <sup>2)</sup>
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD	7 000	N, NT, QT
Alloy	VL F550AW, VL F620AW, VL F650AW	OD	7 000	N, NT, QT

### Forgings for shafting and machinery

Steel type	Grade <sup>3)</sup>	Forging method <sup>1)</sup>	Max. weight [kg]	Delivery condition <sup>2)</sup>
C and C-Mn	VL C400U, VL C440U, VL C480U, VL C520U, VL C560U, VL C600U, VL F640U, VL F680U, VL F720U, VL F760U	OD	7 000	N, NT, QT
Alloy	VL C600A, VL C700A, VL C800A, VL C900A, VL F1000A, VL F1100A	OD	7 000	N, NT, QT

Remarks:

- 1) OD: Open die forging
- 2) QT: Quenched and tempered  
N: Normalised  
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.