

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00001C2
Revision No:
1

This is to certify:

That
ArcelorMittal Ringmill SA
Seraing, Belgium

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for gearing Forgings for boilers, pressure vessels and piping systems
Steel type	Carbon and carbon-manganese, Alloy
Forging method	Open die forging/ring rolling
Max. weight	See page 2
Max. diameter / section	See page 2
Heat treatment condition	See page 2
Additional approval conditions	See page 2

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 **2019-05-22**

for **DNV GL**

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

DNV GL local station: **Antwerp**

Approval Engineer: **Stefan Röhr**

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Thorsten Lohmann
Head of Section



Job Id: **263.11-003581-3**
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Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD / RR	4 500	N, NT, QT
Alloy	VL F550AW, VL F600AW, VL F650AW	OD / RR	4 500	QT

Forgings for shafting and machinery

Forgings for gearing

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	VL F400U, VL F440U, VL F480U, VL F520U, VL F560U, VL F600U, VL F640U, VL F680U, VL F720U, VL F760U	OD / RR	4 500	N, NT, QT
Alloy	VL F600A, VL F700A, VL F800A, VL F900A, VL F1000A, VL F1100A	OD / RR	4 500	QT

Forgings for boilers, pressure vessels and piping systems

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Heat treatment condition ²⁾
C and C-Mn	VL F450H, VL F490H	OD / RR	4 500	N, NT, QT
Alloy	VL F0.5Mo, VL F1Cr0.5Mo	OD / RR	4 500	N, NT, QT
	VL F2.25Cr1Mo	OD / RR	4 500	N, QT

Remarks:

- 1) OD: Open die forging; RR: Ring Rolling
- 2) QT: Quenched and tempered; N: Normalized; NT: Normalized and tempered
- 3) Incl. equivalent grades in acc. to other standards