

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00000S7
Revision No:
2

This is to certify:

That

Bahntechnik Brand-Erbisdorf GmbH
Berthelsdorfer Straße 8, 09618 Brand-Erbisdorf,
Germany

is an approved manufacturer of
Steel Forgings

in accordance with
DNV GL rules for classification – Ships
DNVGL-OS-B101 – Metallic materials

and the following particulars:

Application area	Forgings for hull structures and equipment Forgings for shafting and machinery Forgings for crankshafts Forgings for gearing
Steel type	Carbon and carbon-manganese, Alloy, see page 2
Forging method	Open die forging, ring rolling
Max. weight	See page 2
Max. diameter / section	See page 2
Heat treatment condition	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 **2019-08-28**

for **DNV GL**

This Certificate is valid until **2022-07-31**.

DNV GL local station: **Magdeburg**

Approval Engineer: **Christian Wildhagen**

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Thorsten Lohmann
Head of Section



Job Id: **263.11-003052-3**
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Particulars of the approval

Forgings for hull structures and equipment

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	Heat treatment condition ²⁾
C and C-Mn	VL F400UW, VL F440UW, VL F480UW, VL F520UW, VL F560UW, VL F600UW	OD	5 000	400	N, QT
		RR	350	200	
Alloy	VL F550AW, VL F600AW, VL F650AW	OD	5 000	400	QT
		RR	350	200	

Forgings for shafting and machinery

Forgings for gearing

Forgings for crankshafts

Steel type	Grade ³⁾	Forging method ¹⁾	Max. weight [kg]	Max. thickness [mm]	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	5 000	400	N, QT
		RR	350	200	
Alloy	VL F600A, VL F700A, VL F800A, VL F900A, VL F1000A, VL F1100A	OD	5 000	400	QT
		RR	350	200	

Remarks:

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