

APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM000005F
Revision No:
4

This is to certify:

That

Salzgitter Mannesmann Grobblech GmbH
Mülheim an der Ruhr, Germany

is an approved manufacturer of
Rolled Steel Products

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

and the following particulars:

Application area	High strength steel
	Z-grade steels (plates with through thickness properties)
	Steels for boiler and pressure vessels
	Steel for low temperature service
Products	Plates
Manufacturing method	Basic Oxygen Converter
Max. thickness	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 **2019-09-25**

for **DNV GL**

This Certificate is valid until **2022-10-12**.

DNV GL local station: **Essen**

Approval Engineer: **Stefan Röhr**

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Thorsten Lohmann
Head of Section



Job Id: **263.11-004433-3**
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Particulars of the approval

High strength steel

Grade	Product	Steel making ¹⁾	Fine grain elements	Max. thickness [mm]	Heat treatment condition ²⁾	Z- quality
VL A36, VL D36 VL E36, VL F36	Plates	BOC	Al+Nb+Ti	90	TM	Z35

Rolled steels for boiler and pressure vessels

Grade ³⁾	Product	Steel making ¹⁾	Fine grain elements	Max. thickness [mm]	Heat treatment condition ²⁾	Z-quality
VL 360-0A, -0N	Plates	BOC	Al+Nb+Ti	90	TM	Z35
VL 360-1FN						
VL 360S-1FN						
VL 410-0A, -0N						
VL 410-1FN						
VL 410S-1FN						
VL 460-0A, -0N						
VL 460-1FN						
VL 460S-1FN						
VL 490-0N						
VL 490-1FN						
VL 510-1FN						
VL 510S-1FN						

Steel for low temperature service

Grade ³⁾	Product	Steel making ¹⁾	Fine grain elements	Max. thickness [mm]	Heat treatment condition ²⁾	Z-quality
VL 360-2FN	Plates	BOC	Al+Nb+Ti	40	TM	Z35
VL 2-2	Plates	BOC	Al+Nb+Ti	40	TM	Z35
VL 2-3	Plates	BOC	Al+Nb+Ti	40	TM	Z35
VL 2-4	Plates	BOC	Al+Nb+Ti	30	TM	Z35
VL 2-4L	Plates	BOC	Al+Nb+Ti	25	TM	Z35
VL 4-2	Plates	BOC	Al+Nb+Ti	40	TM	Z35
VL 4-3	Plates	BOC	Al+Nb+Ti	40	TM	Z35
VL 4-4	Plates	BOC	Al+Nb+Ti	30	TM	Z35
VL 4-4L	Plates	BOC	Al+Nb+Ti	25	TM	Z35

Remarks:

- 1) BOC: Basic Oxygen Converter
- 2) TM: Thermo-Mechanical Rolling
- 3) Including equivalent steel grades according to EN 10028