APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM00000X6

This is to certify:

That

NLMK DanSteel A/S
FREDERIKSVÆRK, Denmark

is an approved manufacturer of
Rolled Steel Products

in accordance with
DNV GL rules for classification – Ships
Offshore Standard DNVGL-OS-B101

and the following particulars:

Product	**Plates**
Grades	**Hull structural steels, see page 2**
Steelmaking	**Basic oxygen converter, Continuous casting**
Deoxidation	**Killed**
Fine grain elements	**See page 2**
Delivery conditions	**See page 2**
Max. thickness	**See page 2**
Remarks	**See page 2**

Manufacturer approved by this certificate is 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 **Høvik** on **2016-08-30**

This Certificate is valid until **2019-08-29**.
DNV GL local station: **Copenhagen**

Approval Engineer: **Shylate Mahachi**

for **DNV GL**

Digitally Signed By: Gran, Terje
Location: DNV GL Høvik, Norway
Signing Date: 19.09.2016, on behalf of

Hanne Anita Hjerpetjønn
Head of Section

Particulars of the approval

Normal strength steels				
Grade	Fine grain elements	Delivery conditions [1)]	Max. thickness (mm)	Z-quality
VL A, VL B	Al	AR	50	Z25
	Al or Al+Nb	N	100	Z25
VL D	Al or Al+Nb	N	100	Z35
VL E	Al or Al+Nb	N	50	Z35
High strength steels				
Grade	Fine grain elements	Delivery conditions [1)]	Max. thickness (mm)	Z-quality
VL A27S	Al+V+Ti	AR	12.5	Z35
	Al+Nb	N	60	Z35
		TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL D27S, VL E27S	Al+Nb	N	60	Z35
		TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL F27S	Al+Nb+V+Ti	TM	60	Z35
VL AW27, VL DW27, VL EW27	Al+Nb	TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL A32, VL A36	Al+V+Ti	AR	12.5	-
VL A32, VL D32, VL E32	Al+Nb	N	60	Z35
		TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL F32	Al+Nb+V+Ti	TM	60	Z35
VL AW32, VL DW32, VL EW32	Al+Nb	TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL A36, VL D36, VL E36	Al+Nb	N	60	Z35
		TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL F36	Al+Nb+V+Ti	TM	60	Z35
VL AW36, VL DW36, VL EW36	Al+Nb	TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35
VL A40, VL D40, VL E40	Al+Nb	TM	60	Z35
	Al+Nb+V+Ti	TM	60	Z35

Remarks

[1)] AR: As rolled; N: Normalised; TM: Thermo-mechanical rolling.