



APPROVAL OF MANUFACTURER CERTIFICATE

Certificate No:
AMMM0000085
Revision No:
2

This is to certify:

That

GN Rope Fittings - Grofsmederij Nieuwkoop B.V.
Transportweg 47, 2421LT Nieuwkoop, Netherlands

is an approved manufacturer of
Steel Wire Ropes

in accordance with

DNV-OS-E304 – Offshore mooring steel wire ropes, Edition July 2020 (Amended August 2021)
DNV class programme CP-0256 – Manufacture of offshore mooring steel wire ropes and sockets – Offshore mooring steel wire ropes or Sockets manufacturer

and the following particulars:

Products	Sockets for mobile offshore mooring, Sockets for long term mooring
Grade	34CrNiMo6 modified, see page 2
Delivery condition	See page 2
Max. thickness	260 mm, see page 2
Max. weight	2050 kg
Remarks	See particulars of the approval

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 classed object shall fulfill the material requirements in the applicable DNV class rules.

Issued at **Høvik** on **2022-11-09**

for **DNV**

This Certificate is valid until **2025-12-31**.

DNV local unit: **Netherlands CMC**

Approval Engineer: **Shylate Mahachi**

Sondre Løken
Head of Section

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Particulars of the approval

Sockets for steel wire ropes				
Grade ¹⁾	Delivery conditions ^{2),3)}	Max. thickness [mm]	Max. weight [kg]	Material manufacturer ^{4), 5), 6)}
34CrNiMo6	AQT	260	2 050	Georgsmarienhütte GmbH SSK von Schaeuwen Wetter GmbH

Remarks:

- ¹⁾ For approved material specification see table S1.
- ²⁾ AQT: Annealed ($\geq 690^{\circ}\text{C}$), Quenched and Tempered.
- ³⁾ Final quenched and tempered at subcontractor (Staalharderij Dominial B.V.).
- ⁴⁾ Starting material from approval of manufacturer at Georgsmarienhütte GmbH.
- ⁵⁾ Rough forged bars (reduction ratio $\geq 5:1$) annealed at $\geq 690^{\circ}\text{C}$ are delivered from SSK von Schaeuwen Wetter GmbH.
- ⁶⁾ Approval is limited to the listed raw material manufacturer and forging supplier.

Table S1 - Specification for chemical composition - sockets for steel wire ropes												
Grade		C	Si	Mn	P	S	Cr	Ni	Mo	Cu	Al	N
34CrNiMo6 ¹⁾	Min	.30	-	.50	-	-	1.30	1.30	.15	-	.020	-
	Max	.38	.40	.80	.015	.035	1.70	1.70	.30	.40	.060	.012

Remarks:

- ¹⁾ Specially approved specification.
- ²⁾ The content of Sn, Sb and As may be required determined. In such cases, the maximum content shall be 0.020% for Sn, 0.002% for Sb, 0.03% for As and 0.0008% for B.