

TYPE APPROVAL CERTIFICATE

This is to certify:**That the D14 LTM end joining shackles**with type designation(s)
33000xxxx

Issued to

**GN Rope Fittings - Grofsmederij Nieuwkoop B.V.
Nieuwkoop, Netherlands**

is found to comply with

DNVGL-OS-E302 – Offshore mooring chain, Edition July 2018**Application :****to be used for Temporary, Mobile and Long Term Mooring
as defined in Offshore Standard DNVGL-OS-E301 'Position Mooring' July 2018**Issued at **Høvik** on **2019-09-30**This Certificate is valid until **2024-09-29**.DNV GL local station: **Rotterdam**for **DNV GL**Approval Engineer: **Pierre-Eric Moulia**

**Inger-Helene Hals
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-032511-1**
Certificate No: **TAS000028U**

Product description

D14 LTM end joining shackles in R3, R3S and R4 grades for mooring chains, according to ABNT NBR 13715-3 2012.

Application/Limitation

The shackle is to be used in connection with chains for Temporary, Mobile and Long Term Mooring as defined in Offshore Standard DNVGL-OS-E301 'Position Mooring' July 2018.

The shackle shall be manufactured and tested in accordance with Offshore Standard DNVGL-OS-E302 'Offshore Mooring Chain' July 2018.

The approval is conditional that manufacturer is holding an Approval of Manufacturer DNVGL Certificate, for the given grade and size.

Individual Product Certificate is to be issued for each delivery.

Type Approval documentation

Tests carried out

For every order, testing shall be carried out according to DNVGL-OS-E302 July 2018.

Marking of product

Each shackle shall be marked according to Offshore Standard DNVGL-OS-E302 "Mooring Chain" July 2018 Ch2 Sec2 §1.4 & §3.9.

Periodical assessment

For retention of this Type Approval, a DNVGL surveyor shall perform a periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days). The objective of the periodical assessment is to verify that the conditions for the Type Approval have not been altered. (Ref DNVGL-CP-0338 Type approval scheme).