

TYPE APPROVAL CERTIFICATE

This is to certify:

That the D-Shackle for Roll Thimble

with type designation(s)
2013-0966

Issued to

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

is found to comply with
DNV-OS-E302 "Offshore mooring chain" October 2013

Application :

to be used for Temporary, Mobile and Long Term Mooring as defined in Offshore Standard
DNV-OS-E301 "Position Mooring" October 2013

Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.

This Certificate is valid until **2019-08-31**.

Issued at **Høvik** on **2015-08-28**

DNV GL local station: **Rotterdam**

Approval Engineer: **Pierre-Eric Moulia**

for **DNV GL**

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: **262.1-016241-2**
Certificate No: **TAS000003C**

Product description

D shackle for mooring lines with breaking strength up to 8418 kN (NV R5 84 mm or NV R4 92 mm chains)

Application/Limitation

The D shackles are to be used in connection with chains for Temporary, Mobile Mooring or Long Term Mooring as defined in Offshore Standard DNV-OS-E301 Position Mooring October 2013.

The D shackles shall be manufactured and tested in accordance with Offshore Standard DNV-OS-E302 "Offshore Mooring Chain" October 2013.

The approval is conditional that the manufacturer is approved by DNVGL for R4 grade material.

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 DNV-OS-E302 October 2013.

Marking of product

Each D shackle shall be marked shall be marked according to Offshore Standard DNV-OS-E302 October 2013 Ch2 Sec2 §1.4.1 & §3.9.

Certificate Retention Survey

For retention of the Type Approval, DNVGL surveyor shall perform a survey every second year and before the expiry date of this Certificate to verify that the conditions of the type approval are complied with.