DNV·GL

Certificate No:
**TAS00000XS**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Lifting set for Offshore containers and Portable Offshore Units**

with type designation(s)
**Wire Rope Offshore Lifting Set for Offshore Containers or Portable Offshore Units**

Issued to
## Hendrik Veder Group B.V
**Rotterdam, Netherlands**

is found to comply with
**DNV 2.7-1 Offshore Containers (2013)**
**EN 12079-2 Offshore containers and associated lifting sets – Part 2: Lifting sets Design, manufacture and marking**
**EN 13414-1 Wire rope slings**
**IMO/MSC Circular 860**
**DNVGL-ST-E273 Standard 2.7-3 Portable offshore units (2016)**

## Application :

**1-, 2-, -3- & 4-Part Lifting Sets, with forerunner where fitted, for Lifting of Offshore Containers with Maximum Gross Mass 0 - 25000 kg, or Portable Offshore Units.**

Issued at **Aberdeen** on **2017-05-11**
This Certificate is valid until **2021-05-10**.
DNV GL local station: **Rotterdam**

Approval Engineer: **Elisabeth Legg**

for **DNV GL**

**Alex Doig**
**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.


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Job Id: **262.1-025009-1**
Certificate No: **TAS00000XS**

## Assembled at

Wire rope slings to be assembled at one of the following plants in the Hendrik Veder Group:

| **Place of manufacture** | **Local DNV GL Office** |
|---|---|
| 131, Eemhavenweg, 3089 KE Rotterdam, The Netherlands | DNV GL Rotterdam |
| 1, Bekhuskaien, 4013 Stavanger, Norway | DNV GL Stavanger |

## Product description

The Type Approval Certificate covers wire rope slings described in Appendix 1, assembled by Hendrik Veder Group B.V., according to DNV 2.7-1 Offshore Containers or DNVGL-ST-E273.

Those wire rope slings assembled by Hendrik Veder Group B.V. consist of components from the following sub suppliers:

| **Component** | **Sub supplier** *(DNV to be informed and review new sub suppliers)* | **DNV TA Certificate number[5]** |
|---|---|---|
| Master link & quad assembly | - SCAW South Africa (Pty) Limited<br>- Kjættingfabriken AS<br>- Crosby Group<br><br>- Gunnebo Industrier AB | S-7732[6]<br>TAS000047<br>TAS000001V<br>S-7895<br>TAS00000TE |
| Wire rope [1)] | - Hendrik Veder Group B.V. | NA |
| Shackles [2)] | - Crosby Group, Inc.<br><br>- Van Beest B.V (Green Pin)<br>- Gunnebo Anja Industrier AS<br>- Yoke Industrial Corp. | S-8357<br>TAS00000HA<br>S-7593[6], S-7649<br>S-7601<br>S-8059 |
| Ferrules [3)] | - Wirop Europe<br>- Crosby Group, Inc<br>- Talurit AB<br>- Van Beest B.V.<br>- Gerro | NA |
| Thimbles [4)] | - GN Rope Fittngs – Grofsmederij Nieuwkoop BV<br>- Van Beest BV<br>- ASEKE Einar Kunsts<br>- Frederik Höppe GmbH<br>- Crosby Group, Inc | NA |

1) Wire ropes used in bottom legs of lifting slings to be 6 x 19 or 6 x 36, Independent Wire Rope Core (IWRC) or Fibre Core (FC) with wire rope grades 1770 or 1960 N/mm$^2$, in accordance to ANSI/API 9A EN 12385-4 or equivalent
2) Shackles are only considered part of sling if captive (i.e. cannot be removed after assembly of sling).
3) Ferrules / sleeves: According to EN 13411-3 or equivalent.
4) Thimbles: Federal Specification FF-T-276b, Type III, EN 13411-1 or equivalent.
5) Certificate number current at the time of issuance of this type approval certificate. The current certificate can be obtained at https://approvalfinder.dnvgl.com/. Provided that the sub-supplier continues to offer suitable type approved components, it is not required to amend this certificate to update changes in sub-supplier type approval certificate numbers.
6) Certificates expire on 2017-06-30

Components should be delivered with the following certificates:

- Master Links, Quad assemblies and Shackles: Certificates based on DNV GL Type Approval.
- Wire Ropes: To be supplied with traceable product certificates according to EN 10204 inspection certificate, type 3.1.
- Thimbles and ferrules: To be supplied with a material certificate to EN 10204, test report, type 2.2.

## Application/Limitation

For each delivered drum of wire rope, a test leg with one eye in each end to be prepared and tested to breaking. A reference should be made to the wire drum test report in each sling set certificate where that wire is used.

All production testing should be done according Hendrik Veder Group B.V.'s internal procedures and to be agreed with local DNV GL office.
The manufacturer shall issue product certificate according to Sec. 8.5 in DNV 2.7-1, using Hendrik Veder Group B.V. Certificate for Offshore container lifting sets, Document No. KW 2.7-1 CERT Rev0, for wire rope slings.
This certificate form is only to be used for slings certified according to this Type Approval Certificate.

**For slings manufactured according to DNV 2.7-1 Offshore Containers**
Lifting sets shall be assembled according to the strength requirements for lifting sets on Offshore Containers as described in DNV 2.7-1 Offshore Containers, Section 8. The angle of the sling legs from vertical should be taken into account when choosing slings. This angle should normally be 45°, but smaller angles can be used.

Special slings, assembled according to the principles described in DNV 2.7-1 Offshore Containers, Section 8 and Appendix E, are also covered by this Type Approval. However, if unsymmetrical slings are to be assembled, local DNV GL office has to be contacted for reviewing in each case, unless otherwise is agreed with local DNV office.

> *Note: The sling leg is not necessarily the weakest part of the lifting set. Master link assemblies selected for slings with legs at 45° may not be suitable for slings with a smaller angle.*

The WLL to be used in certificates and marked on lifting sets shall be the maximum rating of an offshore container on which the sling can be used, at the given sling leg angle.

**For slings manufactured according to DNV 2.7-3 Portable Offshore Units**

Prior to selection of sling sets, the minimum required working load limit (WLL) shall be decided according to the strength requirements for lifting sets on portable offshore units as given in DNVGL-ST-E273, Section 7.3.2 and must be approved by DNV GL. The resulting sling force (RSF) can be found in the Design Verification Report (DVR) issued by DNV for the Portable Offshore Unit. The DVR shall be available for the sling manufacturer.

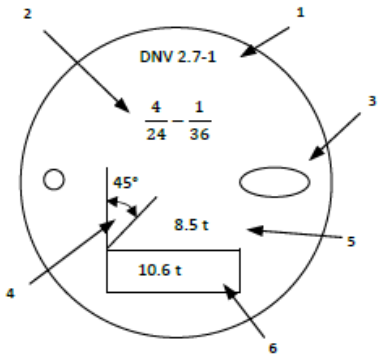
## Type Approval documentation

## Tests carried out

Prototype test to breaking load of assembled wire sling legs (Flemish Eye termination)

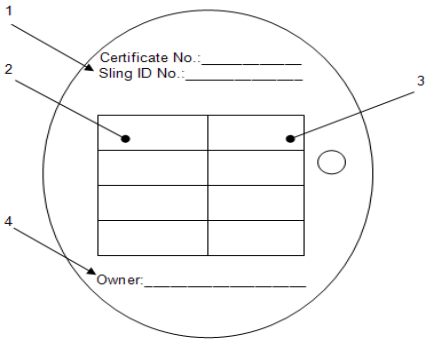
## Marking of product

**For slings manufactured according to DNV 2.7-1 Offshore Containers**
Slings are to be marked with certification tag according to DNV 2.7-1 Offshore Containers, Section 8, as shown below:




Example of identification tag for a wire rope sling – Front

1) CE mark and Reference to DNV 2.7-1 or DNVGL-ST-E273
2) 4 legs of 24 mm, 1 forerunner of 36 mm (example)
3) Manufacturer's mark
4) Sling angle
5) Shackle size
6) WLL




Example of identification tag for a wire rope sling – Back

1) Certificate number (and unique identification number if applicable)
2) Column 1: inspectors mark, inspection suffix and date of periodic inspections (shall be of format YY-MM-DD)
3) Column 2: shackle ID number
4) The owner's name may optionally be included

**For slings manufactured according to DNVGL-ST-E273 Portable Offshore Units**
Each item to be marked according to DNVGL-ST-E273, Section 7.6

## Periodical assessment

In order to maintain the validity of the type approval, certificate retention surveys are to be carried out according to DNV 2.7-1. Intervals are not to exceed 12 months.

END OF CERTIFICATE

## Appendix 1

**Wire rope slings with Steel* ferrules assembled by Hendrik Veder Group B.V., covered by this Type Approval Certificate:**

| Product Name | Applicable Standards | Material Grades | Parameter range (Multi-leg) | | | |
|---|---|---|---|---|---|---|
| | | | SIZE(Ø) [mm] | WLL [t] | PL [kN] | BL [kN] |
| Steel wire rope | EN12385-4 | 1960 N/mm$^2$ | 48 max for forerunner | 25.0 | 580 | 1610 |
| Link assemblies | EN1677-4 | Grade 8 or 10** | 22/20~40/32 or equivalent | ~28.1 | ~71t | ~112t |
| Shackles | EN13889 | Grade 6 or 8*** | ~35 | ~13.5 | ~27t | ~67.5t |

*Optionally, at the client's special request aluminium ferrules may be used for turn-back terminations, but this must approved by the DNV GL local office.
**Grade 10 Link assemblies may be used if DNV GL Type Approved
***Grade 8 shackles may be used if DNV GL Type Approved

Note: The information given above is intended as a guide only. The sizes stated are not limitations. For special (e.g. asymmetric) lifting sets, other sizes may be appropriate.