

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Lifting set for Offshore containers and Portable Offshore Units**

with type designation(s)

Wire rope lifting sets for Offshore Containers

Issued to

**Vlierodam B.V. - Handelsmaatschappij
Rhoon, Netherlands**

is found to comply with

DNV GL standard DNVGL-ST-E271 – 2.7-1 Offshore containers, August 2017**ISO 10855-2:2018 Offshore containers and associated liftings sets – Part 2: Design,
manufacture and testing of lifting sets****EN 13414-1 Wire rope slings****IMO/MSC Circular 860****Application :****1, 2, 3 and 4 leg lifting sets, with forerunner where fitted, for lifting of:****- Offshore Containers, with Maximum Gross Mass 0 to 25000 kg.**Issued at **Aberdeen** on **2018-06-21**This Certificate is valid until **2023-06-20**.for **DNV GL**DNV GL local station: **Rotterdam**Approval Engineer: **Elisabeth Legg****Alex Doig
Team Lead**

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.



Product description

This Type Approval Certificate replaces DNV GL Type Approval Certificate No. S-8245.

The Type Approval Certificate covers wire rope lifting sets assembled by Vlierodam B.V. - Handelsmaatschappij. These shall be assembled with Flemish Eye splice, in accordance with DNVGL-ST-E271.

The wire rope lifting sets assembled by Vlierodam B.V. - Handelsmaatschappij consist of components from the following sub suppliers:

Component	Sub supplier (DNV GL to be informed and review all new sub suppliers)	DNV GL TAC No.
Master Link and Quad assembly	Scaw South Africa (Pty) Limited Gunnebo Industrier AB Kjættingfabriken AS	TAS000013Z TAS00000TE TAS0000047
Wire rope ¹⁾	Usha Siam Ltd. Hascelik DSR Wire Corp Usha Martin Limited Haggie Rand Vornbaumen Bridon ZDB Kiswire Brunton Shaw Camesa Drumet	n/a
Shackles ²⁾	Van Beest BV Crosby Group LLC	TAS000011V TAS00000HA
Ferrules ³⁾	Sahm Splice Crosby Group LLC	n/a
Thimbles ⁴⁾	GN Rope Fittings BV	n/a

- 1) Wire ropes used in fore runner and bottom legs of lifting sets shall be 6-stranded and of type 6x19 or 6x36 and may be fibre cored or steel cored, with wire rope grades 1770 N/mm² or 1960 N/mm², in accordance to EN 12385, or equivalent.
- 2) Shackles are only considered part of the lifting set if captive (i.e. can not be removed after assembly of lifting set).
- 3) Ferrules/sleeves shall be in accordance with EN 13411-3, or equivalent.
- 4) Thimbles shall be in accordance with EN 13411-1, or equivalent.

Components shall 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 material certificates in accordance with EN 10204, inspection certificate, type 3.1.
- Thimbles and ferrules: To be supplied with a material certificate in accordance with EN 10204, test report, type 2.2.

Job Id: **262.1-009413-3**
Certificate No: **TAS00001HV**

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 lifting set certificate where that wire is used.

All production testing should be carried out according to Vliero dam B.V. - Handelsmaatschappij internal procedures and to be agreed with the local DNV GL office.

The manufacturer shall issue product certificates in accordance with DNV GL-ST-E271 Section 8.5, using the certificate form B215F. This certificate form is only to be used for lifting sets certified according to this Type Approval Certificate.

The WLL to be used in certificates and marked on lifting sets shall be the maximum working load limit (WLL) of the lifting set, as per the definition in DNVGL-ST-E271.

For lifting sets manufactured in accordance with DNVGL-ST-E271

Lifting sets shall be assembled according to the strength requirements described in DNVGL-ST-E271 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 may be used.

Special lifting sets, assembled according to the principles described in DNVGL-ST-E271 Section 8 and Appendix E, are also covered by this Type Approval. If unsymmetrical slings are to be assembled, the local DNV GL office shall be contacted to review each case, unless otherwise agreed in advance.

Type Approval documentation

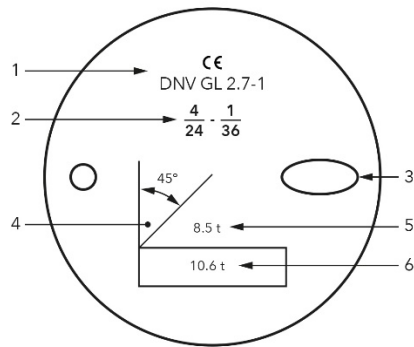
Tests carried out

Prototype breaking load test of assembled wire rope sling leg.

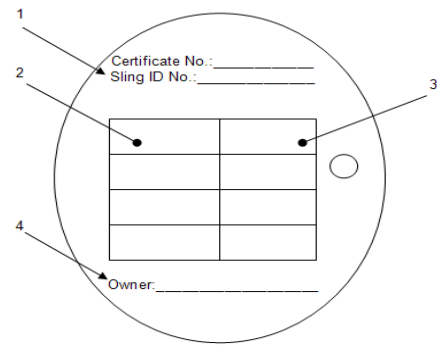
Marking of product

For lifting sets manufactured in accordance with DNVGL-ST-E271

Lifting sets are to be marked with certification tag, or otherwise, in accordance with DNVGL-ST-E271 Section 8, as shown below:



Example of identification tag for a wire rope sling – Front



Example of identification tag for a wire rope sling – Back

- 1) Reference to DNV GL 2.7-1
- 2) 4 legs of 24 mm, 1 forerunner of 36 mm (example)
- 3) Manufacturer's mark
- 4) Sling angle
- 5) Shackle size (assembly secured)
- 6) WLL

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

Periodical assessment

In order to maintain the validity of the type approval certificate, periodical assessments should be carried out every 12 months.

END OF CERTIFICATE