

TYPE APPROVAL CERTIFICATE

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

with type designation(s)

Wire Rope Slings for Offshore Containers

Issued to

De Ruiter Staalkabel B.V.**Dordrecht, Zuid-Holland, 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 **2019-07-12**for **DNV GL**This Certificate is valid until **2024-07-11**.DNV GL local station: **Rotterdam**Approval Engineer: **Ronald Quiballo**

Elisabeth Legg
Principal Engineer

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: **262.1-030950-1**
Certificate No: **TAS000023H**

Product description

The Type Approval Certificate covers wire rope lifting sets assembled with turnback and flemish eyes by De Ruiters Staalkabel B.V, in accordance with DNVGL-ST-E271

The wire rope lifting sets assembled by De Ruiters Staalkabel B.V consist of components from the following sub suppliers:

Component	Sub supplier (DNV GL to be informed and review new sub suppliers)	DNV GL TAC number
Master link & quad assembly	Scaw South Africa (Pty) Limited – McKinnon Chain Kjættingfabriken AS Gunnebo Industrier AB Crosby Group LLC	TAS000013Z TAS0000047 TAS00000TE TAS00001D6 S-7895
Wire rope ¹⁾	Usha Martin Ltd. ZDB Dratovna AS Vornbaumen Stahlseile GmbH & Co. KG	N/A
Shackles ²⁾	Van Beest BV Gunnebo Anja Industrier AS Crosby Group LLC	TAS000011V TAS00001B8 TAS00000HA
Ferrules ³⁾	Sahm Splice GmbH Crosby Group LLC Wirop Europe GmbH	N/A
Thimbles ⁴⁾	GN Rope Fittings BV Van Beest 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 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 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.

Application/Limitation

For each delivered drum of wire rope, a test leg with one eye in each end shall 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 in accordance with De Ruiters Staalkabel B.V internal procedures, 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 De Ruiters Staalkabel B.V form WI.5.0 Rev. 1 "Certificate for Offshore Container Lifting Sling DNVGL-ST-E271". This certificate form is only to be used for lifting sets certified in accordance with this Type Approval Certificate.

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The WLL to be referenced 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.

Lifting sets shall be assembled in accordance with 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 in accordance with 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.

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

Type Approval documentation

Rev. / Date	Title	
1	WI.1.0	Manufacture of Wire Rope Slings
5-1	WI.4.0	Sling Pro (Page 5 only)
1	WI.5.0	Certificate for Offshore Container Lifting Sling DNVGL-ST-E271
01	WI.6.0	Testing Procedure

In addition the following documents are used as information for the Type Approval:

- Test certificates for:
 - Wire ropes
 - Links

Initial Audit of Manufacturer reports endorsed by DNV GL Rotterdam, dated 2019-04-26.

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: refer to Section 8.

Periodical assessment

In order to maintain the validity of the type approval certificate, periodical assessments should be carried out every 6 months.

END OF CERTIFICATE