

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 set

Issued to

CAB ENERGISERVICIOS, S.A. DE C.V.
Villahermosa, TAB, Mexico

is found to comply with

DNV standard DNV-ST-E271 – 2.7-1 Offshore containers, January 2021 (Amended October 2021)
ISO 10855-2:2018 Offshore containers and associated liftings sets – Part 2: Design, manufacture and testing of lifting sets
IMO/MSC Circular 860
EN 13414-1 Wire rope slings

Application :

1, 2, 3, and 4 leg lifting sets, with forerunner where fitted, for lifting of:
- offshore container, with maximum gross mass 0 to 25000 kg

Issued at **Aberdeen** on **2022-12-01**

This Certificate is valid until **2027-11-30** .

for **DNV**

DNV local unit: **Villahermosa**

Approval Engineer: **Alex Doig**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

This type approval covers wire rope lifting sets from 19.0 mm to 44.5 mm diameter assembled with flemish eyes by Cab Energiservicios S.A. de C.V. in accordance with DNV-ST-E271.

The wire rope lifting sets assembled by Cab Energiservicios S.A. de C.V. consist of components from the following sub suppliers:

Component	Sub supplier (DNV to be informed and review new sub suppliers)	DNV type approval reference
Master link and Quad assembly	Crosby Group LLC McKinnon Chain (South Africa) Pty Ltd Yoke Industrial Corp. Ltd	TAS00002GF TAS00002KR TAS00001D6 TAS0000302 TAS000013Z TAS0000337 TAS00002SZ
Wire rope ¹⁾	Bharat Wire Ropes Ltd Camesa (WireCo World Group) Hasçelik San. ve Tic. A.Ş. Kiswire Ltd. Manho Rope & Wire Ltd.	N/A
Shackles ²⁾	Crosby Group LLC Van Beest B.V. Yoke Industrial Corp.	TAS00002GA TAS000033J TAS000011V TAS0000241
Ferrules ³⁾	Crosby Group LLC Muncy Industries	N/A
Thimbles ⁴⁾	Crosby Group LLC Van Beest B.V.	N/A

1) Wire ropes, fore runner and bottom legs, to be used in lifting slings to be 6x36, Classification Wire Rope, Bright or Drawn-Galvanized, Independent Wire Rope Core (IWRC), 1960 Grade, in accordance with EN 12385-4, 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 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 carried out in accordance with Cab Energiservicios S.A. de C.V. procedures, to be agreed with the local DNV office.

The manufacturer shall issue product certificates, in accordance with DNV-ST-E271 section 8.5, using the Cab Energiservicios S.A. de C.V. form CLS-CAB-01, rev 02. These certificates shall only be used for lifting sets certified in accordance with this type approval certificate.

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 DNV-ST-E271.

Lifting sets shall be assembled in accordance with the strength requirements described in DNV-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.

If using wire rope manufactured in US Customary Units sizes (inch) for DNV type approved lifting sets, care should be taken to ensure that the correct minimum breaking load is applied during the selection process

Special lifting sets, assembled in accordance with the principles described in DNV-ST-E271 section 8 and appendix E, are also covered by this type approval. If unsymmetrical slings are to be assembled, the local DNV 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

Tests carried out

Prototype breaking load test of assembled wire rope sling leg.

Marking of product

For lifting sets manufactured in accordance with DNV-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 3 months.

END OF CERTIFICATE