



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **S-7135**

This is to certify that the
Lifting Sets for Offshore Containers

with type designation(s)
Wire Rope Slings for Offshore Containers

Manufactured by
SIVA IND E COM DE ARTEFATOS DE ARAME E ACO LTDA
Itaquaquecetuba, Brazil

is found to comply with
DNV 2.7-1 Offshore Containers
EN 12079-2 Offshore containers and associated lifting sets Part 2: Lifting sets Design, manufacture and marking
EN13414-1 Wire rope slings
IMO/MSC Circular 860

Application
1-, 2-, 3- & 4-Part Lifting Sets, with Forerunner where fitted for Lifting of Offshore Containers with Maximum Gross Mass 0 - 25 000 kg

Høvik, 2012-07-27
for **Det Norske Veritas AS**

This Certificate is valid until
2016-12-31

Morten Bentzon
Head of Section

DNV local office:
Rio de Janeiro, CMC

Maxat Tleshev
Surveyor

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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

The Type Approval Certificate covers wire rope slings described in appendix 1, assembled by SIVA according to DNV 2.7-1 Offshore Containers.

Those wire rope slings assembled by SIVA consist of components from the following sub suppliers:

Component	Sub supplier (DNV to be informed and review new sub suppliers)	DNV TA Cert. number
Master link & quad assembly	- Gunnebo Industrier AB	S-5264
Wire rope ¹⁾	- SIVA IND E COM DE ARTEFATOS DE ARAME E ACO LTDA	NA
Shackles ²⁾	- Van Beest B.V.	S-5623
Ferrules ³⁾	- Qingdao Highton, Presstécnica.	NA
Thimbles ⁴⁾	- Qingdao Highton, Presstécnica.	NA

- 1) Wire ropes used in fore runner and bottom legs of lifting slings assembled by SIVA 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 with API 9A.
- 2) Only considered part of sling if captive (i.e. can not be removed after assembly of sling).
- 3) Ferrules/sleeves: According to EN 13411-3 or equivalent.
- 4) Thimbles: According to EN 13411-1 or equivalent.

Components should 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 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

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, Chapter 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, Chapter 8 and Appendix E, are also covered by this Type Approval. However, if unsymmetrical slings are to be assembled, local DNV 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.

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 SIVA internal procedures and to be agreed with local DNV office.

The manufacturer shall issue product certificate according to Sec. 8.5 in DNV 2.7-1, using the certificate form F-720.01R00. This certificate form is only to be used for slings certified according to this Type Approval Certificate.

Type Approval documentation

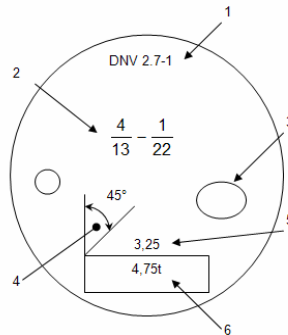
ISO 9001:2008 QA Certificate for SIVA IND E COM DE ARTEFATOS DE ARAME E ACO LTDA, Cert. No. BR005444-1 issued by Bureau Veritas.
Prototype Test Reports No. VRRio.09.091.5.02-0 dated 2009-09-24 and 2009-10-05 endorsed by DNV Rio.

Tests carried out

Prototype test to Breaking Load of assembled wire rope sling leg.

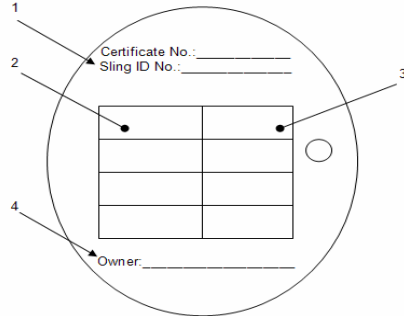
Marking of product

Slings are to be marked with certification tag according to DNV 2.7-1 Offshore Containers, Chapter 8, as shown below:



Example of identification tag for a wire rope sling – Front

- 1) Reference to DNV 2.7-1
- 2) 4 legs of 18 mm, 1 forerunner of 22 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

Certificate Retention Survey

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 6 months.

END OF CERTIFICATE