

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Lifting set for Offshore containers and Portable Offshore Units**with type designation(s)
Chain Sling Assemblies

Issued to

PEWAG Austria GmbH
Graz, Steiermark, Austria

is found to comply with

DNV GL standard DNVGL-ST-E271 – 2.7-1 Offshore containers, August 2017**DNV GL standard DNVGL-ST-E273 – 2.7-3 Portable offshore units, December 2016****EN 818-4 Short link chain for lifting purposes – Safety – Part 4: Chain slings – Grade 8****ISO 10855-2:2018 Offshore containers and associated liftings sets – Part 2: Design, manufacture and testing of lifting sets****IMO/MSC Circular 860****Application :****Grade 8: 1-, 2-, 3- & 4-Part Lifting Sets, with forerunner where fitted, for Lifting of Offshore Containers with Maximum Gross Mass 0 - 25,000 kg and Portable Offshore Units**Issued at **Høvik** on **2019-05-16**This Certificate is valid until **2024-05-15**.for **DNV GL**DNV GL local station: **Augsburg**Approval Engineer: **Nina Thorvaldsen Moberg****Inger-Helene Hals**
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.



Product description

This Type Approval Certificate replaces Type Approval Certificate S-8255.

This Type Approval Certificate covers chain slings assembled by PEWAG s.r.o, according to standard DNVGL-ST-E271 - DNV GL 2.7-1 Offshore Containers (DNV GL 2.7-1) or standard DNVGL-ST-E273 - DNV GL 2.7-3 Portable Offshore Units (DNV GL 2.7-3).

The Chain Sling Assemblies consist of components covered by PEWAG Austria GmbH respective DNV GL Type Approval Certificates; details are listed in Appendix 1 of this Type Approval Certificate.

Manufactured by

Pewag Austria GmbH takes responsibility that both design and production are in compliance with the Rules, Standards and/or Regulations listed on page 1 of this Type Approval Certificate.

Application/Limitation

All proof load tests during production to be carried out in accordance with EN 818-4. All production testing should be done according PEWAG Austria GmbH internal procedures and to be agreed with local DNV GL office.

The manufacturer shall issue product certificates according to DNV GL 2.7-1 Section 8.5, using the applicable certificate form of 01-2AD.07.02.04/I-F_slings_E and 01-2AD.07.02.04_I-F_slings_E_N_E/N. These certificate forms are the only one to be used for slings certified according to this Type Approval Certificate.

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.

Application for slings certified according to DNV GL 2.7-1

Lifting sets shall be assembled according to the strength requirements for lifting sets on Offshore Containers as described in DNV GL 2.7-1, 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.

For application of chains the minimum working load limit (WLL) shall be decided according to the strength requirements for lifting sets on offshore containers as given in DNV GL 2.7-1, Section 8 and PEWAG Austria GmbH internal procedure with range of component sizes. In no case should the WLL of Lifting Sets for Offshore Containers be less than 7.0 tonnes.

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

Job Id: **262.1-017150-4**
Certificate No: **TAS00001UY**

Application for slings certified according to DNV GL 2.7-3

Prior to selection of sling set 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 DNV GL 2.7-3, Section 7.3.2 and must be approved by DNV GL. Resulting sling force (RSF) can be found in the Design Verification Report (DVR) issued by DNV GL for the Portable Offshore Unit. The DVR shall be available for the sling manufacturer.

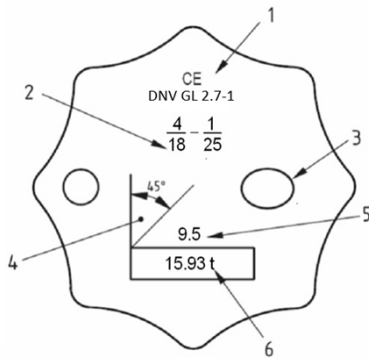
Type Approval documentation

Tests carried out

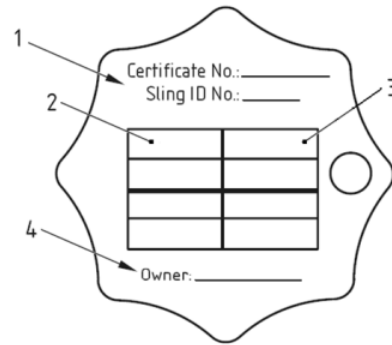
Prototype strength tested according to standards listed on the front page of this type approval certificate.

Marking of product

Slings are to be marked with certification tag according to DNV GL 2.7-1 Section 8 or DNV GL 2.7-3 Section 7.6, example shown below:



Example of identification tag for a chain sling – Front



Example of identification tag for a chain sling – Back

- 1) CE mark and Reference to DNV GL 2.7-1 or DNV GL 2.7-3
- 2) 4 legs of 18 mm, 1 forerunner of 25 mm (example)
- 3) Manufacturer's mark
- 4) Sling angle
- 5) Shackle size
- 6) WLL

- 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

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform an assesment every 6 months and before the expiry date of this certificate to verify that the type approval is complied with.

END OF CERTIFICATE

Appendix 1

Product description and details

Master links type AW

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
AW 16-DNV 2.7-1	16.5	3.5	85.8	137
AW 18-DNV 2.7-1	19	5	123	196
AW 22-DNV 2.7-1	23	7.6	186	298
AW 26-DNV 2.7-1 ¹⁾	27	10.9	267	428
AW 32-DNV 2.7-1 ¹⁾	33	16.4	402	644
AW 36-DNV 2.7-1	36	25.6	628	1005
AW 45-DNV 2.7-1	45	38.3	939	1503
AW 50-DNV 2.7-1	50	50.56	1240	1984
AW 56-DNV 2.7-1 ¹⁾	56	67	1643	2629
AW 72-DNV 2.7-1	70	85	2085	3335

Master links type MW

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
MW 18-DNV 2.7-1	19	4.2	103	165
MW 22-DNV 2.7-1	23	6.7	164	263
MW 26-DNV 2.7-1	27	10.6	260	416
MW 32-DNV 2.7-1 ¹⁾	33	16	392	628
MW 36-DNV 2.7-1 ¹⁾	38	24	589	942

Master links type AOS

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
AOS 23	23	6.7	164	263
AOS 25	25	8.9	218	349
AOS 28	28	14.5	356	569
AOS 33 ¹⁾	33	24.15	592	948
AOS 36	36	28.91	709	1134
AOS 40	40	34.27	840	1345
AOS 45	45	38.3	939	1503
AOS 50	50	50.56	1240	1984
AOS 56 ¹⁾	56	67	1643	2629
AOS 70	70	85	2085	3335

¹⁾ Non-standard sizes, see comment under Product Description.

Transition links (terminal links) type BW:

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
BW 10	10	2.0	49.1	78.6
BW 13	12.7	3.15	77.3	124
BW 16	16.5	5.4	133	212
BW 20	19.5	8.5	208	334
BW 22	23	11.4	280	447
BW 23	23	11.4	280	447
BW 26	27	16.0	392	628
BW 27	27	16.0	392	628
BW 32	33	22.4	549	879
BW 36	36	30.0	736	1177
BW 40	40	42.4	1040	1664
BW 45	45	42.4	1040	1664
BW 50	50	63.0	1545	2472

Transition links type BOS:

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
BOS 17	17	5.06	124	199
BOS 19	19	6.71	165	263
BOS 23	23	10.94	268	429
BOS 27	27	12.91	317	507
BOS 30	30	18.57	455	729

Chain Offsh Ni:

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
Offsh Ni 10	10	3.15	78.5	126
Offsh Ni 13	13	5.3	133	212
Offsh Ni 16	16	8.0	201	322
Offsh Ni 19	19	11.2	284	454
Offsh Ni 22	22	15.0	380	608
Offsh Ni 26	26	21.2	531	849
Offsh Ni 32	32	31.5	804	1290

Chain WIN:

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
WIN 10	10	3.15	78.5	126
WIN 13	13	5.3	133	212
WIN 16	16	8.0	201	322
WIN 19	19	11.2	284	454
WIN 22	22	15.0	380	608