DNV·GL

Certificate No:
TAS00001UX

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Lifting set for Offshore containers and Portable Offshore Units

with type designation(s)
Masterlinks type AW, AOS and MW, Transition links type BW and BOS

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 1677-4 Components for slings – Safety – Part 4: Links, 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 Links for Lifting Sets for Offshore Containers and Portable Offshore Units

Issued at **Høvik** on **2019-05-16**
This Certificate is valid until **2024-05-15**.
DNV GL local station: **Augsburg**

Approval Engineer: **Nina Thorvaldsen Moberg**

for **DNV GL**

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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

This Type Approval Certificate replacses Type Approval Certificate S-8254.

This Type Approval Certificate covers Links for use in Lifting Sets certified to DNVGL-ST-E271 standard DNV GL 2.7-1 Offshore Containers or Portable Offshore Units certified according toDNV GL-ST-E273 standard DNV GL 2.7-3 Portable Offshore Units and EN 1677-4 Componenets for slings – Safety – Part 4: Links, Grade 8.

Detailed product information and range of certified products covered by this Type Approval are listed in Appendix 1 of this Type Approval Certificate.

DNV GL has accepted some components with internal dimension smaller than table 2 in EN 1677-4. These are marked in Appendix 1.

Manufactured by

Pewag s.r.o., Vamberk, Czech Republic
Local office: DNV GL Czech Republic

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

Tests to be carried out:

- Production testing: According to DNV GL 2.7-1 and EN 1677-4 in agreement with the DNV GL surveyor.
- Material to be impact tested by Charpy impact method according to DNV GL 2.7-1, Section 8.4 or DNV GL 2.7-3 Section 7.4.

For application of links 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 or DNV GL 2.7-3 Section 7.

The manufacturer shall issue product certificates according to Section 8.5 in DNV GL 2.7-1, using the applicable certificate form 01-2AD.07.02.04/I-F_components_E and 01-2AD.07.02.04/I-F_components_E/N. This certificate form is only to be used for links certified according to this Type Approval.

Links covered by this Type Approval certificate may be delievered with design temperature of -20°C or -40°C. Links with design temperature -40°C will have special marking.

Application for links certified according to DNV GL 2.7-3
Prior to selection of links 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 7.3.5. Resulting sling force (RSF) can be found in the Design Verification Report (DVR) issued by DNV GL for the Portable Offshore Unit.

Type Approval documentation

Tests carried out

Prototype strength tested according to DNV GL 2.7-1 and EN1677-4.

Marking of product

Marking should be according to DNV GL 2.7-1 Section 8 or DNV GL 2.7-3 Section 7 and EN 1677-4.

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a survey 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