Certificate No:
TAS0000349

TYPE APPROVAL CERTIFICATE

This is to certify:

That the lifting set component for offshore containers and portable offshore units

with type designation(s)
Masterlinks
Intermediate, joining and terminal links

Issued to
J.D. Theile GmbH & Co. KG
Schwerte, Nordrhein-Westfalen, Germany

is found to comply with
DNV GL standard DNVGL-ST-E271 – 2.7-1 Offshore containers, January 2021
DNV GL standard DNVGL-ST-E273 – 2.7-3 Portable offshore units, December 2016
ISO 10855-2:2018 Offshore containers and associated liftings sets – Part 2: Design, manufacture and testing of lifting sets
IMO/MSC Circular 860
EN 1677-4 Components for slings – Safety – Part 4: Links, Grade 8

Application :

Grade 8 links for lifting sets for offshore containers and portable offshore units

Issued at **Aberdeen** on **2021-11-03**
This Certificate is valid until **2026-11-02** .
DNV local unit: **Essen**

Approval Engineer: **Elisabeth Legg**

for **DNV**

Brendan Ward
Senior 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 approval covers master links, intermediate links and master link assemblies for use in lifting sets for units certified in accordance with DNVGL-ST-E271 or DNVGL-ST-E273.

Detailed product information of certified products covered by this type approval are listed in Appendix 1 of this type approval certificate.

Application/Limitation
Selection of the correct dimensions of lifting sets and/or lifting set components shall be carried out in accordance with the requirements for lifting sets of offshore containers in DNVGL-ST-E271 section 8.

Tests to be carried out:
- Production testing: in accordance with DNVGL-ST-E271 and EN 1677-4, in agreement with the DNV surveyor.
- Material to be impact tested by Charpy impact method in accordance with DNVGL-ST-E271 section 8.4.

The manufacturer shall issue product certificates, in accordance with DNV GL-ST-E271 section 8.5 and DNVGL-ST-E273 section 7.5, using the certificate form FQW32 Rev. 0. These certificates shall only be used for lifting sets certified in accordance with this type approval.

For links manufactured in accordance with DNVGL-ST-E271
The required working load limit (WLL) for a given container rating should be determined in accordance with DNVGL-ST-E271 Table 8-1 and J.D. Theile GmbH & Co. KG procedure. In no case shall an offshore container lifting set WLL be less than 7.0 tonnes.

For links manufactured in accordance with DNVGL-ST-E273
Prior to selection of links, the minimum required working load limit (WLL) shall be determined in accordance with the strength requirements for lifting sets on portable offshore units as given in DNVGL-ST-E273 section 7.3.5 and must be approved by DNV. Resultant sling force (RSF) can be found in the design verification report (DVR) issued by DNV for the portable offshore unit.

Type Approval documentation

Tests carried out
Prototype testing shall be carried out in accordance with DNVGL-ST-E271.

Marking of product
Components shall be marked in accordance with EN 1677-4 clause 7.1, DNVGL-ST-E271 section 8 or DNVGL-ST-E273 section 7, as appropriate.

Periodical assessment
In order to maintain the validity of the type approval certificate, periodical assessments should be carried out by a DNV surveyor every 12 months.

END OF CERTIFICATE

Appendix 1

Product description and details:

The values of the working load limit (WLL) specified below are nominal for each component and the correct selection shall be made in accordance with DNVGL-ST-E271 section 8.

Masterlinks:

Type	Diameter [mm]	Working Load Limit (WLL) [t]	Manufacturing Proof Force (MPF) [kN]	Minimum Breaking Force (BF) [kN]
TOL A14*	14	2.74	67.2	134
TOL A16*	16	4.1	101	201
TOL A22*	22	11.0	270	540
TOL A22-2	22	7.0	172	343
TOL A26	26	9.3	228	456
TOL A29*	29	19.5	478	956
TOL A29-2	29	14.5	356	711
TOL A32	32	19.0	466	932
TOL A36	36	26.0	638	1270
TOL A40	40	30.5	748	1500
TOL A45	45	40.0	981	1960
TOL A52	52	51.0	1250	2500
TOL A68	68	75.0	1840	3680

*) This size shall only to be used for portable offshore units.

Intermediate, joining and terminal links:

Type	Diameter [mm]	Working Load Limit (WLL) [t]	Manufacturing Proof Force (MPF) [kN]	Minimum Breaking Force (BF) [kN]
TOL B16	16	5.3	130	260
TOL B20	20	8.0	196	392
TOL B22	23	12.5	307	613
TOL B26	26	16.0	392	785
TOL B32	32	21.2	520	1040
TOL B36	36	26.5	650	1300