DNV·GL

Certificate No:
TAS0000028

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Lifting set for Offshore containers and Portable Offshore Units

with type designation(s)
Offshore Chain Type ENORM K

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

is found to comply with
DNV 2.7-1 Offshore Containers (2013)
DNV Standard for Certification No. 2.7-3 Portable Offshore Units (2011)
PAS 1061 Round steel link chain slings, Grade 10
EN 818-2 Short link chain for lifting purposes - Safety - Part 2: Medium tolerance chain for chain for chain slings - Grade 8
EN 12079-2 Offshore containers and associated lifting sets Part 2: Lifting sets Design, manufacture and marking
IMO/MSC Circular 860

Application :

ENORM Grade 10 - Short Link Chain for Lifting Sets for Offshore Containers and Portable Offshore Units

This Certificate is valid until **2019-08-29**.

Issued at **Høvik** on **2015-09-25**
DNV GL local station: **Essen** for **DNV GL**

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.

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Product description

This Type Approval Certificate replaces Type Approval Certificate S-6499.

This Type Approval Certificate covers sling chain as listed on the table below, manufactured by J.D. Theile GmbH & Co. KG, in accordance to the requirements in DNV 2.7-1 Offshore Container or DNV 2.7-3 Portable Offshore Units, EN 818-1, PAS 1061 and relevant parts from EN 818-2.

Detailed product information and range of certified products covered by this Type Approval are listed in Appendix 1 of this Type Approval Certificate. Sizes are according to EN 818-2.

Application/Limitation

Tests to be carried out:

- Production testing: According to DNV Standard for Certification No. 2.7-1, EN 818-1 "Short link chain for lifting purposes - Safety - Part 1: General conditions of acceptance" and relevant parts from EN 818-2 "Short link chain for lifting purposes - Safety - Part 2: Medium tolerance chain for chain slings - Grade 8" in agreement with the DNV surveyor..
- Material to be impact tested by Charpy impact method according to DNV 2.7-1 Offshore Containers, Section 8.4.

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 2.7-1 Offshore Containers, Section 8 or DNV 2.7-3 Portable Offshore Units Section 7.

The manufacturer shall issue product certificates according to Section 8.5 in DNV 2.7-1, using the certificate form FQW 14-1.This certificate form is only to be used for chains certified according to this Type approval Certificate.

For chains manufactured according to DNV 2.7-3 Portable Offshore Units
Prior to selection of chain 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 2.7-3, Chapter 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 chain manufacturer.

Type Approval documentation

Tests carried out

Prototype strength tested according to standards.

Marking of product

Marking should be according to DNV 2.7-1 Offshore Containers, Section 8 and EN 818-1 "Short link chain for lifting purposes - Safety - Part 1: General conditions of acceptance", with "Grade 10".

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

Chain type ENORM

Type	Dia. [mm]	WLL [t]	MPF [kN]	Min. BF [kN]
ENORM K8 *	8	2,5	62,8	101
ENORM K10	10	4,0	98,1	157
ENORM K13	13	6,7	166	265
ENORM K16	16	10,0	251	402
ENORM K18	18	12,5	318	509
ENORM K20	20	16,0	393	628
ENORM K22	22	19,0	475	760
ENORM K26	26	26,5	664	1060

*This size is only to be used for Portable Offshore Units.