

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Lifting set for Offshore containers and Portable Offshore Units**with type designation(s)
A342CT Master Links

Issued to

Crosby Group LLC
Tulsa, OK, USA

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
ISO 10855-2:2018 Offshore containers and associated liftings sets – Part 2: Design, manufacture and testing of lifting sets
EN 1677-4 Components for slings – Safety – Part 4: Links, Grade 8
IMO/MSC Circular 860**Application :****Grade 8 links for lifting sets for Offshore Containers and Portable Offshore Units**Issued at **Høvik** on **2020-11-02**This Certificate is valid until **2025-11-01** .for **DNV GL**DNV GL local unit: **Houston**Approval Engineer: **Igor Antonijevic**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-029574-1**
Certificate No: **TAS00002T3**

Manufactured by

Lebus Manufacturing, Longview, Texas, USA
Elwood Forge, Navasota, Texas, USA
Modern Forge, Merrillville, Indiana, USA

The Crosby Group LLC takes responsibility that production at all places of manufacture are in compliance with the Rules, Standards and/or Regulations listed on page 1 of this Type Approval Certificate.

Product description

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 according to DNV GL-ST-E273 standard DNV GL 2.7-3 Portable Offshore Units.

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 dimensions smaller than Table 2 in EN 1677-4, these are marked in Appendix 1

Application/Limitation

Design temperature: - 40°C

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 No. 271 Product Certificate – Master Links. This certificate form is only to be used for links certified according to this Type Approval.

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 in accordance with the applicable standards.

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

In order to maintain the validity of the type approval, periodic assessments shall be carried out by a DNV GL surveyor. Intervals between assessments shall not exceed 6 months.



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END OF CERTIFICATE

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Appendix 1

Product description and details:

P/N	Nom. Size [in]	WLL _s [lbs]	MPF [lbs]	Min. BF [lbs]
3575500 ¹⁾	7/8	15200	38000	76000
3575509 ²⁾	1	26000	65000	130000
3575518 ²⁾	1-1/4	39100	97750	195500
3575527	1-1/2	61100	152750	305500
3575536	1-3/4	84900	212250	424500
3575545	2	102600	256500	513000

¹⁾ this size is only suitable for portable offshore units.

²⁾ non-standard sizes, see comment under Product description.