

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the lifting set components for offshore containers and portable offshore units**with type designation(s)  
**Masterlinks, Type XX.X.OF**  
**Quad Assemblies, Type MA XX OF**

Issued to

**Nøsted & AS**  
**Sannidal, Norway**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**  
**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 or portable offshore units**Issued at **Aberdeen** on **2020-12-14**This Certificate is valid until **2025-12-13** .for **DNV GL**DNV GL local unit: **Sandefjord**Approval Engineer: **Alex Doig**.....  
**Elisabeth Legg**  
**Principal 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 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.



## Product description

This type approval certificate replaces TAS0000047.

This approval covers master links and quad 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.

The following products are covered:

- Masterlinks, Type XX.X.OF
- Quad Assemblies, Type MA XXOF

## Application/Limitation

Tests to be carried out:

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

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.

The required Working Load Limit (WLL) for a given container rating should be determined in accordance with DNVGL-ST-E271 Table 8-1. In no case should the lifting set WLL be less than 7.0 tonnes.

The manufacturer shall issue product certificates in accordance with DNVGL-ST-E271 section 8.5, using the certificate form No. 1. This certificate form shall only be used for links certified in accordance with this type approval.

### 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 GL. 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 testing shall be carried out in accordance with the standards.

### Marking of product

Components should be marked in accordance with DNVGL-ST-E271 section 8 or DNVGL-ST-E273 section 7 and EN 1677-4 chapter 7.1.

### Periodical assessment

In order to maintain the validity of the type approval certificate, periodical assessments should be carried out by a DNV GL surveyor every 6 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 XX.X.OF

Type	Nominal size [mm]	WLL [tonnes]	MPF [kN]	BF ** [kN]
20.60F	20	6.7 *	164.8	328.6
22.60F	22	8.2	201.1	402.2
25.60F	25	10.7	262.9	524.8
25.70F	25	8.8	216.5	431.6
28.60F	28	12.9	316.9	632.7
28.70F	28	11.8	289.4	578.8
32.60F	32	17.1	419.9	838.8
38.60F	38	28.1	689.6	1378.3
45.60F	45	38.3	936.9	1878.6
50.60F	50	45.0	1103.6	2207.3
60.60F	60	65.3	1602.0	3203.0

\*) Master links with WLL less than 7.0 tonnes are not allowed to be used in lifting sets for offshore containers

\*\*) Breaking force is based on safety factor 5.

### Quad Assemblies, type MA XXOF

Type	WLL [tonnes]	MPF [kN]	BF ** [kN]	Master link	Intermediate link
MA 22 OF	8.2	201.1	402.2	22.60F	20.60F
MA 25 OF	10.7	262.9	524.8	25.60F	20.60F
MA 25.7 OF	8.8	216.5	431.6	25.70F	22.60F
MA 28 OF	12.9	316.9	632.7	28.60F	25.60F
MA 28.7 OF	11.8	289.4	578.8	28.70F	22.60F
MA 32 OF	17.1	419.9	838.8	32.60F	25.60F
MA 38 OF	28.1	689.6	1378.3	38.60F	32.60F
MA 45 OF	38.3	939.8	1878.6	45.60F	38.60F
MA 50 OF	45.0	1103.6	2207.3	50.60F	45.60F
MA 60 OF	65.3	1602.0	3203.0	60.60F	50.60F

\*\*) Breaking force is based on safety factor 5.