DNV·GL

Certificate No:
TAS00001C8

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Hook

with type designation(s)
A-t.8

Issued to
Lamet Sollevamenti S.r.l.
Dormelletto NO, Italy

is found to comply with
DNV GL standard DNVGL-ST-0377 – Standard for shipboard lifting appliances
DNV GL standard DNVGL-ST-0378 – Standard for offshore and platform lifting appliances

Application :

Product(s) approved by this certificate is/are accepted for DNVGL product certification.

Issued at **Hamburg** on **2018-02-07**
This Certificate is valid until **2023-02-06**.
DNV GL local station: **Milan**

for **DNV GL**

Approval Engineer: **Stefan Heuer**

Jörg Kallies
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

Swivel hooks type A-t.8

Application/Limitation

1. Working conditions:
- Design temperature: -20°C
- Hoist load coefficient ≤ 1.25
- Max. 20000 load cycles
- Axial cylindrical bearing: C0 ≥ 80 kN

2. Fabrication:
- Method of hook fabrication: forging
- Materials are to be delivered with 3.1 certificates acc. to EN 10204 (or ISO 10474)
- Hook: 18NiCrMo5 (R_m ≥ 930MPa, $Rp_{0,2}$ ≥ 830 MPa, A ≥ 10%, KV ≥ 32J at -10°C)

3. Product certification:
To obtain a DNVGL Product Certificate, each hook shall be tested (as per MSC.81(70)) with:

- Lpstat: 2.0 x SWL

4. Periodic quality inspection:
- 1 batch = 500 pieces
- 1 hook per batch shall be destructive load tested (BL > 4 x SWL).
- Per batch: testing of mechanical properties (yield point, tensile strength, elongation, impact energy).
- 1 nondestructive material test (liquid penetration) per batch.

The above mentioned test reports shall be presented to DNVGL Surveyor during Product Certification.

5. Maintenance:
Each hook shall be inspected by a qualified person before every use and shall be subjected to a thorough examination every year. Non-destructive material tests (e.g. dye penetration) shall be carried out when it becomes necessary, latest every 5 years.

Type Approval documentation

Tests carried out

Prototype test report no. 1670U witnessed by DNVGL dated 2014-09-11

Marking of product

Each lifting hook shall be marked by the manufacturer with at least (DNVGL-ST-0377, 7.4):

- Manufacturer´s name or trademark
- Type of loose gear
- Serial number
- Year of construction
- Nominal load "SWL" in t or kg

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a periodical assessment after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE