



Certificate no.:
TAS000044K

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Loose Gear - Block**

with type designation(s)
LB 710.34.2.45.D

issued to

Ropeblock B.V.
Oldenzaal, Overijssel, Netherlands

is found to comply with

DNV standard DNV-ST-0377 – Standard for shipboard lifting appliances

Application:

Product(s) approved by this certificate is/are accepted for DNV product certification and installation on all vessels classed by DNV.

Issued at **Hamburg** on **2023-12-08**

This Certificate is valid until **2028-12-07**.

DNV local unit: **Netherlands VMC**

for **DNV**

Approval Engineer: **Stefan Heuer**

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.



Form code: TA 281

Revision: 2023-09

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Product description

Lower Block type LB 710.34.2.45.D

Application/Limitation

1. Working conditions:

- Design temperature: -10°C
- SWL: 45t (Rope 22.5t)
- Hoist load coefficient (psi) ≤ 1.5
- Categorization acc. to FEM 1.001: E3 (B4/P2)
- DNV Shipboard Cranes types: A, B (rope Ø34mm, non- or poorly rotating, max. 1960N/mm²)

2. Material/ workmanship requirements:

The following minimum Charpy-V values shall be observed and be confirmed with material inspection certificates 3.1 (ISO 10474):

Draw. No.	Min. Charpy-V	Test temp.	Description
01.16.V.D.203.B	42J	-40°C	Hook
02.16.V.81120	42J	-40°C	Hook nut
03.100.91	34J	-10°C	Trunnion
E230148.05	42J	-40°C	Shaft
E230148.06.A	34J	-10°C	Beam
E230148.16	34J	-40°C	Studeye
E230148.17	34J	-40°C	Body
E230148.22	42J	-40°C	Bolt

NDT as per DNV-ST-0377, 11.5.8:

Welding studeye/ body: 100% Visual, 100% MP - ISO 5817 B

3. Comments:

- Rope sheaves are not subject to DNV approval. Verification covers only sheave scantlings relating to the rope diameter and strength. Rope sheaves made of metallic material shall be manufactured according to a recognized international standard. Required certification level: PD (Manufacturer product declaration).
- The construction shall be protected permanently against corrosion.
- Screws shall be secured against unscrewing (e.g. by tightening torque, liquid thread locker).

4. Product certification:

To obtain DNV Product Certificates, each lower block and hook shall be tested with:

$$L_{pstat} = [(1.22 \times SWL) + 20t] = 74.9t$$

Type Approval documentation

Marking of product

Each lower block shall be marked by the manufacturer with at least:

- manufacturer's name or trademark
- type of loose gear
- serial number
- year of construction
- nominal load(s) "SWL" in t or kg

Periodical assessment

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE