



Certificate no.:
TAS00004NC

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Lifting Gear

with type designation(s)
Sheave E240543

issued to

Ropeblock B.V.
Oldenzaal, Overijssel, Netherlands

is found to comply with

DNV standard DNV-ST-0378 – Offshore and platform lifting appliances

Application:

See next page

Issued at **Høvik** on **2025-04-01**

This Certificate is valid until **2030-03-31**.

for **DNV**

DNV local unit: **Netherlands CMC**

Approval Engineer: **Fredrik Per Olof Höglund**

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 USD 300 000.

Product description

The sheaves covered by this Type Approval certificate are to be installed permanently on a lifting appliance. They shall not be used as sub-components for loose gear.

The Type Approval covers sheave:

SHEAVE RANGE $\phi 482/\phi 90$

with drawing number: E240543 rev. 00

Casting drawing:

SHEAVE 482/90 - CASTING

with drawing number: 04GR.482.5018 rev. 02

Reference standards

F.E.M., Rules for the Design of Hoisting Appliances, 3rd Ed. 1998

Application/Limitation

Sheave variations are approved according to table below:

Sheave	E240543 rev.00					
Min design temperature [°C]	-30					
Outer diameter [mm]	560					
Wire rope diameter, d [mm]	Min			Max		
	20			26		
Groove radius, R [mm]	Min			Max		
	0.52 x d			0.56 x d		
Load condition						
Wrap angle [deg]	180	90	20	180	90	20
Fleet angle, in/out [deg]	2	2	2	4	4	4
Maximum dynamic line pull* [kN]	420	414	317	279	302	181
Design safety factor	1.5					

* The maximum dynamic load shall include effects such as the weight of the hook/block, the weight of the wire rope and the lifting appliance's design dynamic factor.

Static line pull x dynamic factor shall not exceed maximum dynamic line pull. Minimum dynamic factor is 1.3.

Maximum dynamic line pull for component groups.

F.E.M. 1.001 component group	E1-E3	E4	E5	E6	E7	E8
Load Case 1: Wrap angle 180deg Fleet angle, in/out, 1deg* Maximum dynamic line pull [kN]	420	368	301	247	203	166**
Load Case 2: Wrap angle 90deg Fleet angle, in/out, 1deg* Maximum dynamic line pull [kN]	414	356	294	243	201	166**
Load Case 3: Wrap angle 20deg Fleet angle, in/out, 1deg* Maximum dynamic line pull [kN]	317	317	281	230	188	154**
Load Case 4: Wrap angle 180deg Fleet angle, in/out, 2deg* Maximum dynamic line pull [kN]	279	267	217	176	143	116**
Load Case 5: Wrap angle 90deg Fleet angle, in/out, 2deg* Maximum dynamic line pull [kN]	302	280	229	188	154	126**
Load Case 6: Wrap angle 20deg Fleet angle, in/out, 2deg* Maximum dynamic line pull [kN]	181	181	155	125	101	82**

* Mean fleet angle values are considered

** E8 is based on: P1/B10, P2/B9, P3/B8, P4/B7

1. All materials are to be delivered with 3.1 certificates, documenting mechanical properties and chemical composition in accordance with the Type Approval documentation.
2. The sheave bearings are not covered by this Type Approval.
3. Sheave bearings are to be delivered with manufacturer's CoC, confirming sufficient strength and capacity. Proper lubrication of the bearings is to be guaranteed during operation and use of the sheaves.

Type Approval documentation

Tests to be carried out

1. If a DNV Product Certificate is required, each sheave shall be subjected to overload testing as per DNV-ST-0378 Table 14-1 and 14.2.3.4.
 2. NDT as specified in the Type Approval Documentation are to be carried out by certified personnel.
 3. Testing shall be witnessed by DNV representative.
- Note: sheaves are exempt from impact testing.

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.

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