Certificate No:
TAS000032K

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Lifting Gear / Rope Sheaves

with type designation(s)
770-675-130x77-78, 640-560-90x65-65, 1750-1547-240x158-185

Issued to
Röchling Industrial Xanten GmbH
Xanten, Nordrhein-Westfalen, **Germany**

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 :

This Type Approval entitles the manufacturer to issue Works Certificates for the individual products.

Issued at **Hamburg** on **2021-06-01**
This Certificate is valid until **2026-05-31**.
DNV local station: **Essen**

Approval Engineer: **Heiko Herrmann**

for **DNV**

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.

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.

Product description

Wire rope sheaves made from cast polyamide (PA6c)

Type no.	Dimensions	Liebherr ID No.	RIX-article code	Drawing No.
1	770-675-130x77-78	790424714	S06110379	SR59-003
2	640-560-90x65-65	919013114	S061110424	SR179-018
3	1750-1547-240x158-185	112 779 12	S061110002	SR-RD1750-003

Application/Limitation

Basic Data:

Type no. [-]	Nominal diameter [mm]	Maximum line pull [kN]	Rope diameter [-]	Wrap angle [°]	Maximum deflection [°]	Design temperature [°C]
1	675	250	32-34	180	3	-25°C to 50°C
2	560	140	27-28	180	3	-25°C to 50°C
3	1547	1350	70	180	4	-25°C to 60°C

Material: ‘Lamigamid 310’ acc. to DNVGL Approval of Manufacturer (AoM) no. AMMM00002CN

Working Conditions: Superposition of worst-case conditions cannot be assessed in this context. The operator shall observe impairing effects according to manufacturer recommendations, e.g. humidity, deflection, temperature or rope speed.

Maintenance: Instructions for inspection and maintenance of plastic rope sheaves as well as removal criteria shall be provided by the manufacturer.

Bushing/bearing: Outer dimensions are evaluated for undersize; bearings are checked for plausibility. Sufficient monitoring and maintenance shall be provided.

Pitch Diameter: Various crane types place demands on the diameter ratio of sheave to rope. These shall be considered during crane design and approval.

Type Approval documentation

Marking of product

Each sheave shall be permanently marked with a unique serial number and DNV Type Approval ID. If sufficient traceability is provided by the documentation on board the vessel, TA ID may be waived.

Periodical assessment

A production site with valid Approval of Manufacturer (AoM) certificate for material in question is exempted from the obligation concerning retention and renewal assessments.

End of Certificate