

APPROVAL OF MANUFACTURER CERTIFICATE

This is to certify:**That the Manufacturer****Knapheide GmbH
Beckum, Germany**

is approved for the

Assembling of type approved hoses and couplings

The approval is granted on condition that

DNV GL rules for classification – Ships**DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses**

are complied with in all respect

Hose	Non-metallic flame resistant hydraulic hose assemblies
Type	1SN, 1SC, 2SN, 2SC, Semperpac 1SN-K, Semperpac 2SN-K, 4SP, 4SH
Size	DN 6 up to DN 51
Standard	Reference is made to the applicable Type Approval Certificate, listed on page 2

Manufacturer approved by this certificate is accepted to deliver according to DNV GL, DNV and GL rules.

Issued at **Hamburg** on **2017-07-05**for **DNV GL**This Certificate is valid until **2020-07-04**.DNV GL local station: **Essen**Approval Engineer: **Martin Zeller**

Olaf Drews
Head of Section

Approval basis

The below listed hose assemblies (hoses and end fittings) are type approved according to the specifications/technical data mentioned in Type Approval Certificates:

Manufacturer	Product/Type designation	Type Approval
Semperit Technische Produkte GmbH	1SN corresponding to EN853	P-14531
	1SC corresponding to EN857	
	Semperpac 1SN-K	
	2SN corresponding to EN853	
	2SC corresponding to EN857	
	Semperpac 2SN-K	
	4SP corresponding to EN 856	84530-92
4SH corresponding to EN 856 : 1996	13736-99	

Size range

DN 6 up to DN 51

The selection of the hose assemblies for the corresponding application and the right installation are to be in accordance with the specifications of the manufacturer.

Limitation

Refer to the applicable Type Approval Certificates as listed above.

Documents

- Audit Report, Order No: A0286363 dated on 2016-07-08
- Checklist for renewal of approved manufacturers 20.96a dated on 2016-11-01
- ISO 9001:2008 Certificate, Reg. Nr.: MPA A NRW Q 120 expires on 22.01.2018
- KNAPHEIDE – Document: KHS-0030-Organigramm QS-00
with regards to the 'nominated Persons': Giuseppe Franco and Werner Dortmund
- SEMPERIT Approval Letter 'Authorized Hose Assembler' dated on 20.06.2017
- KNAPHEIDE – Document:
Prozesslenkungsplan – IST-0004-Herstellung Schlauchleitung Index 02, Stand 07/17
- REPORT – BURST test dated on 2017-07-03 +
KNAPHEIDE Burst Pressure Test Documentation / 001-2017 – 003-2017, dated on 2017-07-03

Production place

Knapheide GmbH, Daimlerring 1, 59269 Beckum

Marking

For identification and traceability purposes, each hose assembly is at least permanently marked on the hose end fitting with:

- Hose assembly manufacturer's name or trade mark – DN – PN – ID No. –

Production testing

Each manufacture red hose assembly is to be subjected to a hydraulic pressure test in accordance to the purchaser specifications, at least in accordance with the respective DNV GL Rules, with 1.5 times the maximum working pressure.

Remark

For determination of the maximum working pressure of the hose assembly both, the maximum operating pressures of the hose end fitting and hose type, as specified in the latest manufacturer product catalogues, are to be considered.



Job Id: **263.11-005741-1**
Certificate No: **AMT0000061**

Product certification

In case of orders according to GL Rules, a DNV GL-product certificate of the manufactured and pressure tested hose assemblies issued by DNV GL is mandatory.
Otherwise a 3.1 customer Work Certificate is required and sufficient.

Certificate Retention Survey

The approval is valid for three years. To maintain the approved status, the manufacturer is to be re-inspected every three years. Application for renewal should be made not later than three months before the expiry date of the certificate.

Any alteration to the approved condition during the period of validity, e.g. method of manufacture, maximum dimensions or conditions of supply, is to be reported to the Society.
A re-inspection and/or re-testing may be required when deemed necessary by the Society.

END OF CERTIFICATE