

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings

with type designation(s)
Hansa-Flex Type KP600 and KP700

Issued to

HANSA-FLEX AG
Bremen, Germany

is found to comply with

DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses

Application :

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

Temperature range: -40°C up to +121°C

Max. working press.: up to 445 bar

Sizes: DN10 to DN31

Issued at **Hamburg** on **2020-06-29**

This Certificate is valid until **2025-06-28**.

DNV GL local station: **Hamburg CMC**

for **DNV GL**

Approval Engineer: **Christof Kotzmann-Bendrien**

.....
Olaf Drews
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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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

Synthetic rubber hose assemblies consisting of

- oil resistant liner
- reinforcement made of four steel wire braid
- cover:
 - KP 600: Oil resistant and weatherproof synthetic rubber
 - KP 700: Oil resistant and weatherproof synthetic rubber
- crimped with hose end fittings made of carbon or stainless steel

Hose type	Hose standard	Size range
KP 600	ISO 18752-CCT	D10 to DN31
KP 700		

Component	Types
Hose end fittings	DNV GL-Übersicht-HF" dated 2020-06-24
Materials	Carbon steel 11SMnPb30 with electro galvanized surface or Stainless steel 1.4571/1.4404 ¹

Note

¹ The stainless-steel grades 1.4571, 1.4404 are considered not suitable for use in sea water systems with stagnant service conditions.

Hose assembly production places

The following Hansa Flex hose assembly production places are approved

Germany
HANSA-FLEX AG, Zum Panrepel 3, 28307 Bremen
HANSA-FLEX AG, Sandgrube 12, 22525 Hamburg
HANSA-FLEX AG, Holzkoppelweg 14, 24118 Kiel
HANSA-FLEX AG, An der Autobahn 15, 28876 Oyten
HANSA-FLEX AG, Havelstraße 12-14, 24539 Neumünster
HANSA-FLEX AG, Oranienburger Str. 10, 26388 Wilhelmshaven
HANSA-FLEX AG, Auf dem Reuterhamm 7, 27576 Bremerhaven
Croatia
HANSA-FLEX Croatia d.o.o., Podružnica Dugopolje, Sv. Leopolda Mandica 22°, 21204 Dugopolje
Latvia
HANSA-FLEX Hidraulika SIA, Saremas iela 2, 1005 Riga
Lithuania
HANSA-FLEX Hidraulika UAB, Tilzes g. 60, 91108 Klaipeda

Responsibility

The company HANSA-FLEX AG, Bremen, takes the responsibility that both design and production of the hose assemblies are in compliance with the DNV GL Rules and Class Programs listed on page 1 of this certificate.

Application/Limitation

The hose assemblies of type KP are type approved for the use according to their suitability in:

- Fuel oil, lubricating oil and thermal oil systems, Hydraulic piping systems

- Sea water and Fresh water systems
- Compressed air systems (for application above 17bar with pin pricked cover)
- Class III steam systems
- Non-main class piping systems

Hose assemblies are not approved for application in:

- piping systems with service condition below atmospheric pressure (vacuum)
- high pressure fuel oil injection systems

Maximum working pressure (M.A.W.P)

KP 600

Identification	DN	Size	M.A.W.P. bar	Min. bend radius mm
KP 610	10	6	445	65
KP 613	12	8	420	90
KP 616	16	10	420	100
KP 620	19	12	380	120
KP 625	25	16	350	150
KP 632	31	20	350	280

KP 700

Identification	DN	Size	M.A.W.P. bar	Min. bend radius mm
KP 720	19	12	420	120
KP 725	25	16	420	150

Temperature range¹

Mineral oil, Polyglycol based oil, Water-oil emulsions	- 40°C ² to +121°C
Water	0°C up to +70°C

Notes

¹ Refer to manufacturers data sheets

² Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C, unless the material is normalized

Production testing and certification

Each hose assembly is to be subjected to a hydraulic pressure test with 1.5 times the M.A.W.P. Appropriate Works Certificate (W) to be issued for each batch.

Marking of product

For traceability to this type approval certificate one of the hose end fittings are to be at least marked with:

Job Id: **262.1-033289-1**
Certificate No: **TAP0000235**

Scope	Example
Manufacturer's alphanumeric code	KP xxx
M.A.W.P.	WP xxx bar

Installation

For selection of hose assemblies and installation the following boundary conditions are to be observed:

Hose assemblies shall

- only be used where it is necessary to compensate vibrations or relative movement of components, e.g. in case of flexible mounting of the machinery.
- not replace or to be used where permanent piping is possible or required.
- be always accessible for inspection.

Hose assemblies shall further be

- of short lengths (approximately up to 1.5m).
- used in systems for lubrication oil, fuel oil and petroleum base hydraulic oil must be possible to shut off from the piping system. Furthermore, shall be shielded from hot surfaces, e.g. boiler fronts or other sources of ignition.

Reference DNVGL Rules Pt.4, Ch.6 Piping Systems – Section 9.

Type Approval documentation

Tests carried out

Dimensional check test, Change in length test, Burst pressure test, Pressure impulse test, Ozone and Oil resistance test, Cover adhesion and Cold flexibility test, Fire resistance test acc. to ISO 15540/15541.

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a survey after 2 and 3,5 years and also before the expiry date of this certificate to verify that the conditions of the type approval are complied with.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval Certificate has been issued.

The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.
- Witnessing the burst test on every third size of each type. Reference DNVGL – CP-0183.

End of certificate