DNV·GL

Certificate No:
TAP00000N3

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 HD 100-1SN, HD 200-2SN, KP 100-1SC, KP 200-2SC and HD 200 T – 2SN, acc. to DIN EN 853, FLAME RESISTANT HYDRAULIC HOSES IN ACC. WITH ISO 15540

Issued to
HANSA-FLEX AG
Bremen, Germany

is found to comply with
DNV GL rules for classification – Ships
DNV GL rules for classification – Yachts
DNV GL rules for classification – Offshore units

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Temperature range:	**-40ºC up to +100ºC (HD 200 T: -55°C to +135°C)**
Max. working press.:	**40 up to 400 bar (Dep. type, see certificate)**
Sizes:	**6 up to 51mm (Dep. type, see certificate)**

This Certificate is valid until **2021-07-27**.

Issued at **Hamburg** on **2016-11-03**

for **DNV GL**

DNV GL local station: **Bremerhaven**

Approval Engineer: **Peter Gierhan**

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.

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Product description

Design:

Type HD 100-1SN: Synthetic rubber hose with one internal steel wire braid according to DIN 853

Type HD 200 (-T)-2SN: Synthetic rubber hose with two internal steel wire braids according to DIN 853

Type KP 100-1SC: Synthetic rubber hose with one internal steel wire braid according to DIN 857

Type KP 200-2SC: Synthetic rubber hose with two internal steel wire braids according to DIN 857

Couplings:	acc. to list "DNV GL-Übersicht-HF" dated 2016-06-14
Crimped fittings:	acc. to list "DNV GL-Übersicht-HF" dated 2016-06-14
Materials:	Carbon steel 11SMnPb30 with electro galvanised surface or Stainless steel 1.4571/1.4404

The hose assemblies are manufactured at:

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

Application/Limitation

Range of Application

The a.m. hose type may be used acc. to their suitability in:
- Fuel oil, lubricating oil and hydraulic oil systems
- Bilge and ballast systems
- Fresh and seawater cooling systems
- Compressed air systems*
- Secondary piping systems

* Pin prick cover is required for gas applications above 17 [bar].

Temperature range:	max. 70 [°C] for air max. 85 [°C] for water-glycol and water-oil emulsion

This certificate is valid for the specific assembly of hose and coupling type as specified, assembled and delivered by the holder (named as manufacturer) of this certificate.

All hose assemblies delivered under this type approval certificate shall be in compliance with an assembly procedure issued by the certificate holder.

Each hose assembly is before delivery to be hydraulic pressure tested to 1.5 times the maximum working pressure.

Hose assemblies delivered from the certificate holder shall be delivered with pressure test report with reference to the type approval certificate.

The hose assemblies covered by this type approval may be assembled and delivered by other than the certificate holder under the following conditions:

- The assembler is authorised by a written authorization from the certificate holder. The certificate holder shall keep record of all assembler authorisations.
- Hose assemblies are in accordance with an assembly procedure issued by the certificate holder and the assembler has proved their qualifications by burst testing of a selection of hose/coupling combinations.
- Selection of sizes and burst testing is to be performed in compliance with the DNV Rules CP 0183 and the testing is to be witnessed by DNV GL.

Hose assemblies delivered from an authorized assembler shall in addition to the pressure test report with reference to the type approval certificate be delivered with a copy of the written authorization stamped by DNV GL.
The hoses can be used in short lengths (up to 2 meters) for ordinary machinery purposes in the systems mentioned on the front page.

Maximum working pressure:

DN Size [mm]	Pressure [bar]							
	1SN		1SC		2SN*		2SC	
6	HD 106	225	KP 106	225	HD 206	400	KP 206	400
8	HD 108	215	KP 108	215	HD 208	350	KP 208	350
10	HD 110	180	KP 110	180	HD 210	330	KP 210	330
12	HD 112	160	KP 112	160	HD 212	275	KP 212	275
16	HD 116	130	KP 116	130	HD 216	250	KP 216	250
20	HD 120	105	KP 120	105	HD 220	215	KP 220	215
25	HD 125	88	KP 125	88	HD 225	165	KP 225	165
32	HD 132	63	-	-	HD 232	125	-	-
40	HD 140	50	-	-	HD 240	90	-	-
50	HD 150	40	-	-	HD 250	80	-	-

*HD T type assmeblies is specified by "T" (e.g. HD 206 T)

The use of hose assemblies is not permitted in permanently pressurized starting air lines of diesel engines.
The hoses must only be fitted in places where they are always accessible.
Hoses shall not be subjected to pressures below atmospheric pressure.
Flexible hoses of these types are not to be used on boiler fronts.
The hoses are to be mounted in accordance with the manufacturer's instructions.
It must be possible to shut off from the system all flexible hoses used in systems for lubrication oil, fuel oil and petroleum base hydraulic oil.
Hose assemblies with couplings made of carbon steel are not to be used at temperatures below -10°C unless the material is normalized.

Type Approval documentation
Tests carried out

Change in length, burst, impulse, ozone resistance, oil resistance, cover adhesion, cold flexibility and fire test.
DNV GL-Ref.-No.: 14-111012

Marking of product

For traceability to this Type Approval, the products are at least to be marked with:

- Manufacturer's name or trade mark
- Type designation

Periodical assessment

For retention of the Type Approval, DNV GL Surveyor shall perform a periodical assessment every second year, to verify that the conditions for the type approval are complied with and to witness the following tests on a selection of sizes:

•-Dimensional check.
•-Change in length
•-Leakage test
•-Burst test

The tests are to be performed with the type of couplings fitted that are Type Approved with the hoses.

END OF CERTIFICATE