

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**

with type designation(s)

Stainless steel hose coupling

Issued to

**Volz Gruppe GmbH
Deilingen, Germany**

is found to comply with

DNV GL class programme DNVGL-CP-0183 – Type approval – Flexible hoses**DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems****DNVGL-OS-D101 – Marine and machinery systems and equipment, Edition January 2018****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 +100 °C****Max. working press.: Up to 450 bar****Sizes: DN 6 up to DN 51**Issued at **Hamburg** on **2020-02-06**This Certificate is valid until **2025-02-05**.DNV GL local station: **Augsburg**for **DNV GL**Approval Engineer: **Andrii Pishchanskyi**

**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.



Product description

Hose couplings

Hose couplings consists of hose fitting and ferrules, made of stainless steel (1.4571) and produced by Volz Gruppe GmbH in Deilingen, Germany.

Hoses

Hoses are produced by Semperit Technische Produkte Gesellschaft m.b.H. in Wimpassing, Austria.

Type	Branding	Description
DIN 853 1SN	SEMPERIT STAUFF FLEX	Synthetic rubber hose with one internal steel wire braid.
DIN 853 2SN		Synthetic rubber hose with two internal steel wire braids.
1SN-K SEMPERPAC 1SN-K STAUFFPAC		Synthetic rubber hose with one internal steel wire braid.
2SN-K SEMPERPAC 2SN-K STAUFFPAC		Synthetic rubber hose with two internal steel wire braids.
DIN 857 1SC		Synthetic rubber hose with one internal steel wire braid.
DIN 857 2SC		Synthetic rubber hose with two internal steel wire braids.
EN 856 4SP		Synthetic rubber hose reinforced with 4 spirally wrapped steel plies.
EN 856 4SH		Synthetic rubber hose reinforced with 4 spirally wrapped steel plies.

Sea water application

Stainless steel material 1.4571 is not approved for application in sea water systems or unprotected installation on the open deck.

It shall be noted that the selection of the materials considers the intended service condition and installation area of the piping system. In particular, the resistance to corrosion, erosion, oxidation and other deterioration which may occur during intended service life.

Reference is made to DNVGL Rules Pt.4, Ch.6, Sec.2 – Materials.

Application/Limitation

Hose assemblies are approved for use with petroleum base hydraulic fluids, water glycol and water emulsion hydraulic fluids, fuel oil, lubrication oil, compressed air, fresh water and sanitary.

Maximum allowable working pressure¹⁾ [bar] is as follows:

Hose Type \ DN	6	8	10	12	16	19	25	31	38	51
1SN	225	215	180	160	130	105	88	63	50	40
2SN	400	350	330	275	250	215	165	125	90	80
1SN-K	290	250	230	200	150	125	110	100	N/A	N/A
2SN-K	450	420	385	345	290	280	200	175	N/A	N/A
1SC	225	215	180	160	130	105	88	N/A	N/A	N/A
2SC	400	350	330	275	250	215	165	N/A	N/A	N/A
4SP	N/A	N/A	445	425	350	350	320	210	185	165
4SH	N/A	N/A	N/A	N/A	N/A	420	380	350	290	250

Footnote

- 1) Individual maximum working pressure of flexible hoses and hose fittings shall be observed in SEMPERIT's catalogue "Hydraulic and Pressure Washer Hoses" and Volz's catalogue "Hose Fittings and Accessories", edition 06-2013.

Hose assemblies intended for installation in piping systems for flammable media and seawater system shall be fitted with fire protection sleeve of type F 88-SC as per manufacturer's instructions.

Hoses assemblies are not approved for application under pressure below atmospheric or vacuum.

For compressed air or gases above 16 bar the cover is to be pin pricked.

Installation

Flexible hoses are only to be used where it is necessary due to vibrations or flexible mounting on the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

The hoses must only be fitted in places where they are always accessible.

The hoses are to be mounted in accordance with the manufacturer's instructions.

Production testing

Each hose assembly shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to the type approval certificate.


Type Approval documentation

Tests carried out

1. Change in length;
2. Cold flexibility test;
3. Resistance against liquid;
4. Cover adhesion test;
5. Ozone resistance test;
6. Fire resistance test;
7. Impulse test;
8. Burst test.

Marking of product

Each hose assembly shall be permanently marked on the hose end fitting as follows:

Content	Example
Manufacturer's logo	 or V71
Ferrule type	PF3
Nominal diameter	DN 32

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform periodical assessment after two years (+/- 90 days) and after 3.5 years (+/- 90 days) to verify that the conditions for the Type Approval are complied with. Refer to DNVGL-CP-0338, Sec.4.