

TYPE APPROVAL CERTIFICATE

This is to certify:

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

with type designation(s)
EN 853 1SN

issued to

Boss Paslanmaz Hidrolik Baglanti Elemanlari San. ve Tic. Ltd.Sti
Istanbul, Türkiye

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV-OS-D101 – Marine and machinery systems and equipment, Edition July 2021
DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses

Application:

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

Temperature range: See page 2
Max. working press.: See page 2
Sizes: 3/16", 1/4", 1/2"

Issued at **Høvik** on **2026-08-17**

This Certificate is valid until **2031-08-16**.

DNV local unit: **Istanbul**

Approval Engineer: **Sarah Miller**

for **DNV**



Digitally Signed By:
Bosman van der Merwe
Location: **DNV Høvik, Norway**

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

SAE 100 R1AT - ISO 1436-1 - UNI EN 853 1SN is a Flexible non-metallic hose with permanently attached couplings designed according to EN 853 standard for the hose and ISO 8434 for couplings, comprising of following construction:

Tube	:	Oil Resistant synthetic rubber
Reinforcement	:	One high tensile steel braid (1B)
Cover	:	Abrasion, Ozone and hydrocarbon resistant synthetic rubber
Fittings	:	

Hose Manufacturer

SEL HOSES by Danfoss POLIMER KAUCUK SAN. VE PAZ. A.S.
Maslak Mahallesi, Sümer Street, No. 4 Interior Door No. 14
Sarıyer, Istanbul, Turkey

Coupling Manufacturer

Boss Paslanmaz Hidrolik Baglanti Elemanları San. ve Tic. Ltd.Sti
Evliya Celebi Mah. Fedai Sk. NO:1571 Turkey

Hose assembling locations

Boss Paslanmaz Hidrolik Baglanti Elemanları San. ve Tic. Ltd.Sti
Evliya Celebi Mah. Fedai Sk. NO:1571 Turkey

Application/Limitation

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 and assembling location as mentioned above.

Nominal size		Maximum working pressure (bar)	Ferrule designation	Minimum bend radius (mm)
DN	inch			
5	3/16	250	BPCS105	90
6	1/4	200	BPCS106	100
12	1/2	160	BPCS112	180

Materials and material protection chosen for the specific system shall be suitable for the intended medium and environmental conditions.

The hose assemblies covered by this certificate shall not be installed in systems subject to pressure below atmospheric or vacuum conditions.

Hose assemblies are approved to use with:

- Petroleum based hydraulic fluids at temperatures ranging from -40 °C + 100 °C;
- Water based fluids at temperatures ranging from -40 °C to +70 °C;
- Water and Air at temperatures ranging from 0 °C to +70 °C.
- Fuel Oil
- CO2 systems at temperatures ranging from -60°C to 100°C

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

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

Hose assemblies covered by this certificate shall not be used in system subject to pressure below atmospheric or vacuum condition.

The cover of hoses for gaseous applications shall be pin-pricked.

End connections shall fulfil the restrictions in DNV-RU-SHIP Pt.4 Ch.6 Sec.9 [5] as below:

- Threaded joints having pipe threads where pressure-tight joints are made on the threads:
 - 1) with parallel or tapered threads, shall comply with requirements of a recognized national or international standard.
 - 2) Shall not be used for piping systems conveying toxic or flammable media or services where fatigue, severe erosion or crevice corrosion is expected to occur.
- Mechanical joints other than standard bolted flanges are not covered by this certificate and shall be type approved separately in accordance with DNV-CP-0185.

Production testing

All hose assemblies delivered under the DNV type approval scheme 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 this type approval certificate.

Type Approval documentation

Authorization letter ,dated 2025.06.25

Endurance Test with liquid CO₂: report No. BS0925-302, BS0925-303, BS0925-304, BS0925-305 dated 2025.09.19

Burst Test Report No. BS0925-201, BS0925-202, BS0925-203, BS0925-204, BS0925-205, BS0925-206, BS0925-207, BS0925-208, BS0925-209, BS0925-210, BS0925-211, BS0925-212, BS0925-213, BS0925-214, BS0925-215, BS0925-216, BS0925-217 witnessed by DNV Surveyor dated 2026.05.22

Fire Test Report No. 2023270945-1 , 2023270946-1, 2023270947-1, 2023270948-1, 2023270949-1, 2023270950-1, 2023270951-1, 2023270952-1, 2023270953-1, 2023270954-1, 2023270955-1, 2023270956-1 dated 2023.09.27

Impulse Cycle Test Report No. BS0925-101, BS0925-102, BS0925-103, BS0925-104, BS0925-105 dated 2025.09.18

Tests carried out

Change in length, dimensional check, abrasion resistance, cover adhesion test, oil resistance test, cold flexibility test, ozone resistance, fire test, burst pressure, impulse test.

Marking of product

Flexible hoses are to be permanently marked by the manufacturer with the following details:

- Hose manufacturer's name or trademark;
- Date of manufacture (month/year);
- Designation type reference;
- Nominal diameter;
- Pressure rating;
- Temperature rating

Where a flexible hose assembly is made up of items from different manufacturers, the components are to be clearly identified and traceable to evidence of prototype testing.

Periodical assessment



Job ID: **262.1-038008-1**
Certificate no.: **TAP00002VH**

This certificate is only valid if required periodical assessments are carried out with satisfactory results.

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

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.