

# TYPE APPROVAL CERTIFICATE

## This is to certify:

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

with type designation(s)  
**2SN, 4SP, 4SH**

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 vessels classed by DNV.

<b>Type:</b>	<b>Temperature range:</b>	<b>Max. working press.:</b>	<b>Sizes:</b>
<b>2SN</b>	<b>See page 3</b>	<b>See page 3</b>	<b>DN5 to DN50</b>
<b>4SP</b>	<b>See page 3</b>	<b>See Page 3</b>	<b>DN6, DN10, DN12, DN16</b>
<b>4SH</b>	<b>See page 3</b>	<b>See Page 3</b>	<b>DN19 to DN50</b>

Issued at **Høvik** on **2026-02-06**

This Certificate is valid until **2031-02-05**.

DNV local unit: **Istanbul**

Approval Engineer: **Marc Avice**

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 USD 300 000.

## Product description

Three (3) types of non-metallic flexible hose assemblies:

### 1- EN 853 Type 2SN

Hose assemblies designed & constructed according to EN 853 2SN comprising of

Tube	:	oil & glycol resistant synthetic rubber;
Reinforcement	:	2 layers of high tensile steel wire braid;
Cover	:	oil, abrasion and weather resistant synthetic rubber;
Coupling designations	:	Ferrule: BPHS1 / Insert: refer to Table 1 below.

### 2- EN 853 Type 4SP

Hose assemblies designed & constructed according to EN 856 4SP comprising of

Tube	:	oil & glycol resistant synthetic rubber;
Reinforcement	:	4 layers of spiral plies of steel wire wrapped in alternating directions. Each spiral wire ply shall be separated by an insulating layer of synthetic rubber;
Cover	:	oil, abrasion and weather resistant polyurethane;
Coupling designations	:	Ferrule: BPHS9 / Insert: refer to Table 2 below.

### 3- EN 853 Type 4SH

Hose assemblies designed & constructed according to EN 856 4SH comprising of

Tube	:	oil & glycol resistant synthetic rubber;
Reinforcement	:	4 layers of spiral plies of steel wire wrapped in alternating directions. Each spiral wire ply shall be separated by an insulating layer of synthetic rubber;
Cover	:	oil, abrasion and weather resistant synthetic rubber;
Coupling designations	:	Ferrule: BPHS9 / Insert: refer to Table 3 below.

### Material of construction for end fittings

Stainless steel X6CrNiMoTi17-12-2/1.4571 or X2CrNiMo17-12-2/1.4404 according to (EN 10088-3)

### Hose manufacturer:

Polimer Kaucuk San.ve Paz. A.S., Istanbul, Turkey

### Coupling manufacturer:

Boss Paslanmaz – Mahallesi, Evliya Çelebi, Fedai Sk. No:15/1, 34944 Tuzla/İstanbul, Tyrkia

### Assembly location:

Boss Paslanmaz – Mahallesi, Evliya Çelebi, Fedai Sk. No:15/1, 34944 Tuzla/İstanbul, Tyrkia

## Application/Limitation

This certificate is valid for the specific assembly of hose and coupling type as specified, assembled and delivered by the assembling location stated in product description.

Maximum allowable work pressure (bar)						
HOSE SIZE		HOSE TYPE			HOSE END FITTING	HOSE END FITTING MATERIEAL
INCH	DN	EN 853 TYPE 2SN	EN856 TYPE 4SP	EN 856 TYPE 4SH		
3/16"	5	415	-	-	BPHM1, BPHM2, BPHM19, BPHM29, BPHB1, BPHB19, BPHJ1, BPHJ19, BPHNE1, BPHF2, BPHF29	1,4404 (316L) & 1,4571 (316Ti)
1/4"	6	400	450	-		
5/16"	8	350	-	-		
3/8"	10	330	445	-		
1/2"	12	275	415	-		
5/8"	16	250	-	-		
3/4"	19	215	-	420		
1"	25	165	-	380		
1 1/4"	32	125	-	350		
1 1/2"	38	90	-	290		
2"	50	78	-	250		

Hose assemblies covered by this certificate are approved for use in the temperature range and fluid medium as listed below:

Fluid medium	Temperature range
Hydraulic fluids as per ISO 6743-4 except for HFD R, HFD S & HFD T	-40°C to +100°C
Water based fluids	-40°C to +65°C
Air & water	0°C to +65°C

All hoses assemblies delivered under this type approval certificate shall comply with an assembly procedure issued by the certificate holder.

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.

Coupling type/sizes are not covered by this type approval certificate and shall be in compliance with limitations given in the relevant DNV standards/rules.

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.

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

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

The approval does not cover use of these hoses in LNG/LPG applications.

### Type Approval documentation

Document no.	Rev.	Description
BS0925-501	-	Burst test report (3/16" 2SN straight-90° 6L-6L) witnessed by DNV surveyor dated 2025-11-03
BS0925-502	-	Burst test report (3/16" 2SN straight-90° 6S-6S) witnessed by DNV surveyor dated 2025-11-03
BS0925-503	-	Burst test report (3/16" 2SN straight-90° 1/8" BSP-1/8" BSP) witnessed by DNV surveyor dated 2025-10-30
BS0925-504	-	Burst test report (3/16" 2SN straight-90° 7/16" UNF-7/16" UNF) witnessed by DNV surveyor dated 2025-11-03
BS0925-505	-	Burst test report (3/16" 2SN male fix-straight 1/8" NPT-1/8" NPT) witnessed by DNV surveyor dated 2025-11-03
BS0226-501	-	Burst test report (3/8" 2SN straight-90° 12L-12L) witnessed by DNV surveyor dated 2026-04-02
BS0226-502	-	Burst test report (3/4" 2SN straight-90° 22L-22L) witnessed by DNV surveyor dated 2026-04-02
BS0226-503	-	Burst test report (1 1/2" 2SN straight-90° 42L-42L) witnessed by DNV surveyor dated 2026-04-02
BS0226-504	-	Burst test report (3/8" 2SN straight-90° 12S-12S) witnessed by DNV surveyor dated 2026-04-02
BS0226-505	-	Burst test report (3/4" 2SN straight-90° 20S-20S) witnessed by DNV surveyor dated 2026-04-02
BS0226-506	-	Burst test report (1 1/2" 2SN straight-90° 38S-38S) witnessed by DNV surveyor dated 2026-04-02
BS0226-507	-	Burst test report (3/8" 2SN straight-90° 3/8" BSP-3/8" BSP) witnessed by DNV surveyor dated 2026-04-02
BS0226-508	-	Burst test report (3/4" 2SN straight-90° 3/4" BSP-3/4" BSP) witnessed by DNV surveyor dated 2026-04-02
BS0226-509	-	Burst test report (1 1/2" 2SN straight-90° 1 1/2"BSP-1 1/2"BSP) witnessed by DNV surveyor dated 2026-04-02
BS0226-510	-	Burst test report (3/8" 2SN straight-90° 9/16" UNF-9/16" UNF) witnessed by DNV surveyor dated 2026-04-02
BS0226-511	-	Burst test report (3/4" 2SN straight-90° 1 1/16" UNF-1 1/16" UNF) witnessed by DNV surveyor dated 2026-04-02
BS0226-512	-	Burst test report (1 1/2" 2SN straight-90° 2 1/2" UNF-2 1/2" UNF) witnessed by DNV surveyor dated 2026-04-02
BS0226-513	-	Burst test report (3/8" 2SN male fix-straight 3/8" NPT-3/8" NPT) witnessed by DNV surveyor dated 2026-04-02
BS0226-514	-	Burst test report (3/4" 2SN male fix-straight 3/4" NPT-3/4" NPT) witnessed by DNV surveyor dated 2026-04-02
BS0226-515	-	Burst test report (1 1/2" 2SN male fix-straight 1 1/2" NPT-1 1/2" NPT) witnessed by DNV surveyor dated 2026-04-02
BS0925-506	-	Burst test report (1/4" 4SP straight-90° 10L-10L) witnessed by DNV surveyor dated 2025-11-03
BS0925-507	-	Burst test report (1/4" 4SP straight-90° 10S-10S) witnessed by DNV surveyor dated 2025-11-03
BS0925-508	-	Burst test report (3/8" 4SP straight-90° 3/8" BSP-3/8" BSP) witnessed by DNV surveyor dated 2025-11-03

BS0925-509	-	Burst test report (3/8" 4SP straight-90° 9/16" UNF-9/16" UNF) witnessed by DNV surveyor dated 2025-11-03
BS0925-510	-	Burst test report (3/8" 4SP male fix-straight 3/8" NPT-3/8" NPT) witnessed by DNV surveyor dated 2025-11-03
BS0925-511	-	Burst test report (1/2" 4SP straight-90° 18L-18L) witnessed by DNV surveyor dated 2025-11-03
BS0925-512	-	Burst test report (1/2" 4SP straight-90° 16S-16S) witnessed by DNV surveyor dated 2025-11-03
BS0925-513	-	Burst test report (1/2" 4SP straight-90° 1/2" BSP-1/2" BSP) witnessed by DNV surveyor dated 2025-11-03
BS0925-514	-	Burst test report (1/2" 4SP straight-90° 7/8" UNF-7/8" UNF) witnessed by DNV surveyor dated 2025-11-03
BS0925-515	-	Burst test report (1/2" 4SP straight-90° 1/2" FLANGED-1/2" FLANGED) witnessed by DNV surveyor dated 2025-11-03
BS0925-516	-	Burst test report (3/4" 4SH male fix-straight 3/4" NPT-3/4" NPT) witnessed by DNV surveyor dated 2025-11-03
BS0925-517	-	Burst test report (1" 4SH straight-90° 1" BSP-1" BSP) witnessed by DNV surveyor dated 2025-11-03
BS0925-518	-	Burst test report (1" 4SH straight-90° 1 5/16" UNF-1 5/16" UNF) witnessed by DNV surveyor dated 2025-11-03
BS0925-519	-	Burst test report (1" 4SH straight-90° 1" FLANGED-1" FLANGED) witnessed by DNV surveyor dated 2025-11-03
BS0925-520	-	Burst test report (1 1/2" 4SH straight-90° 42L-42L) witnessed by DNV surveyor dated 2025-11-03
BS0925-521	-	Burst test report (1 1/2" 4SH straight-90° 38S-38S) witnessed by DNV surveyor dated 2025-11-03
BS0925-522	-	Burst test report (1 1/2" 4SH straight-90° 1 7/8" UNF-1 7/8" UNF) witnessed by DNV surveyor dated 2025-11-03
BS0925-523	-	Burst test report (1 1/2" 4SH straight-90° male fix- 1 1/2" NPT-1 1/2" NPT) witnessed by DNV surveyor dated 2025-11-03
BS0925-524	-	Burst test report (2" 4SH straight-90° 2" BSP-2" BSP) witnessed by DNV surveyor dated 2025-11-03
BS0925-525	-	Burst test report (2" 4SH male fix- 2" NPT-2" NPT) witnessed by DNV surveyor dated 2025-11-03
BS0925-526	-	Burst test report (2" 4SH straight-90° 2" FLANGED-2" FLANGED) witnessed by DNV surveyor dated 2025-11-03
BS0925-101	-	Impulse test report 3/16" 2SN (straight-90° 6L-6L, 6S-6S, 1/8" BSP-1/8" BSP, 7/16" UNF-7/16" UNF, and male fix-straight 1/8" NPT-1/8" NPT)
BS1225-201	-	Impulse test report 3/4" 2SN (straight-90° 22L-22L, 20S-20S, 3/4" BSP-3/4" BSP, 1 1/16" UNF-1 1/16" UNF, and male fix-straight 3/4" NPT-3/4" NPT)
BS1225-202	-	Impulse test report 1 1/2" 2SN (straight-90° 42L-42L, 38S-38S)
BS1225-203	-	Impulse test report 2" 2SN straight-90° 2" BSP-2" BSP
BS1225-204	-	Impulse test report 2" 2SN (straight-90° 2 1/2" UNF-2 1/2" UNF, and male fix-straight 2" NPT-2" NPT)
BS0925-102	-	Impulse test report 1/4" 4SP (straight-90° 10L-10L, and 10S-10S)
BS0925-103	-	Impulse test report 3/8" 4SP (straight-90° 3/8" BSP-3/8" BSP, 9/16" UNF-9/16" UNF, and male fix-straight 3/8" NPT-3/8" NPT)
BS0925-104	-	Impulse test report 1/2" 4SP (straight-90° 18L-18L, 16S-16S, 1/2" BSP-1/2" BSP, 7/8" UNF-7/8" UNF, and 1/2" FLANGED-1/2" FLANGED)
BS0925-105	-	Impulse test report 3/4" 4SH (male fix-straight 3/4" NPT-3/4" NPT)
BS0925-106	-	Impulse test report 1" 4SH (straight-90° 1" BSP-1" BSP, 1 5/16" UNF-1 5/16" UNF, and 1" FLANGED-1" FLANGED)
BS0925-107	-	Impulse test report 1" 1/2" 4SH (straight-90° 42L-42L, 38S-38S, 1 7/8" UNF-1 7/8" UNF, and male fix-straight 1 1/2" NPT-1 1/2" NPT)
BS0925-108	-	Impulse test report 2" 4SH (straight-90° 2" BSP-2" BSP, 2" FLANGED-2" FLANGED, and male fix- 2" NPT-2" NPT)
2023150926-1	-	Fire test report (3/16" 2SN straight-90° 6L-6L) dated 2023-09-15
2023150942-1	-	Fire test report (3/16" 2SN straight-90° 6S-6S) dated 2023-09-15
2023150927-1	-	Fire test report (3/16" 2SN straight-90° 1/8" BSP-1/8" BSP) dated 2023-09-15
2023150928-1	-	Fire test report (3/16" 2SN straight-90° 7/16" UNF-7/16" UNF) dated 2023-09-15
2023150938-1	-	Fire test report (3/16" 2SN male fix-straight 1/8" NPT-1/8" NPT) dated 2023-09-15
2025201237	-	Fire test report (3/4" 2SN straight-90° 20S-20S) dated 2025-12-20
2025201238	-	Fire test report (1 1/2" 2SN straight-90° 38S-38S) dated 2025-12-20
2025201239	-	Fire test report (3/4" 2SN straight-90° 3/8" BSP-3/8" BSP) dated 2025-12-20
2025201240	-	Fire test report (2" 2SN ) dated 2025-12-20
2025201241	-	Fire test report (3/4" 2SN straight-90° 1 1/16" UNF - 1 1/16" UNF) dated 2025-12-20
2025201242	-	Fire test report (2" 2SN straight-90° 2 1/2" UNF - 2 1/2" UNF) dated 2025-12-20
2025201243	-	Fire test report (2" 2SN male fix-straight 2" NPT - 2" NPT) dated 2025-12-20
2025201244	-	Fire test report (3/4" 2SN male fix-straight 3/4" NPT - 3/4" NPT) dated 2025-12-20
2023150933-1	-	Fire test report (1/4" 4SP straight-90° 10L-10L) dated 2023-09-15
2023150943-1	-	Fire test report (1/4" 4SP straight-90° 10S-10S) dated 2023-09-15
2023150929-1	-	Fire test report (3/8" 4SP straight-90° 3/8" BSP-3/8" BSP) dated 2023-09-15
2023150950-1	-	Fire test report (3/8" 4SP straight-90° 9/16" UNF-9/16" UNF) report dated 2023-09-15
2023150955-1	-	Fire test report (3/8" 4SP male fix-straight 3/8" NPT-3/8" NPT) dated 2023-09-15
2023150934-1	-	Fire test report (1/2" 4SP straight-90° 18L-18L) dated 2023-09-15
2023150944-1	-	Fire test report (1/2" 4SP straight-90° 16S-16S) dated 2023-09-15
2023150947-1	-	Fire test report (1/2" 4SP straight-90° 1/2" BSP-1/2" BSP) dated 2023-09-15
2023150951-1	-	Fire test report (1/2" 4SP straight-90° 7/8" UNF-7/8" UNF) dated 2023-09-15

2023150958-1	-	Fire test report (1/2" 4SP straight-90° 1/2" FLANGED- /2" FLANGED) dated 2023-09-15
2023150956-1	-	Fire test report (3/4" 4SH male fix-straight 3/4" NPT-3/4" NPT) dated 2023-09-15
2023150936-1	-	Fire test report (1" 4SH straight-90° 1" BSP-1" BSP) dated 2023-09-15
2023150952-1	-	Fire test report (1" 4SH straight-90° 1 5/16" UNF-1 5/16" UNF) dated 2023-09-15
2023150959-1	-	Fire test report (1" 4SH straight-90° 1" FLANGED-1" FLANGED) dated 2023-09-15
2023150935-1	-	Fire test report (1 1/2" 4SH straight-90° 42L-42L) dated 2023-09-15
2023150946-1	-	Fire test report (1 1/2" 4SH straight-90° 38S-38S) dated 2023-09-15
2023150953-1	-	Fire test report (1 1/2" 4SH straight-90° 1 7/8" UNF-1 7/8" UNF) dated 2023-09-15
2023150957-1	-	Fire test report (1 1/2" 4SH straight-90° male fix- 1 1/2" NPT-1 1/2" NPT) dated 2023-09-15
2023150937-1	-	Fire test report (2" 4SH straight-90° 2" BSP-2" BSP) dated 2023-09-15
2023150940-1	-	Fire test report (2" 4SH male fix- 2" NPT-2" NPT) dated 2023-09-15
TAP0000136	-	Dimensional check, change in length, Cold flexibility, Resistance against liquid, Cover adhesion test, Vacuum test, Ozone resistance test performed for the deliverance of TAP0000136.
-	-	Ferrules and hose connectors technical catalogue
-	-	Authorization letter from the hose manufacturer Polimer Kaucuk dated 2025-01-13
TAP0000136	01	DNV TAP certificate for hose types 2SN, 4SP and 4SH.

### Tests carried out

Dimensional Check Test, Change in Length Test, Leakage test, Cold flexibility test, Resistance against liquid, Cover adhesion test, Ozone resistance test, Fire resistance test and Impulse test.

### Production testing

Each hose assembly shall be hydrostatically tested at a hydrostatic pressure of 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to this Type Approval certificate.

### Marking of product

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

- hose manufacturer's name or trademark;
- date of manufacture (month/year);
- designation type reference;
- nominal diameter;
- pressure rating;
- temperature rating.

### Periodical assessment

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>.