

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

with type designation(s)

2SN(HWB323), 4SH(PS-4SH392), 4SP(PS-4SP391), R15(PS-R15/398)

Issued to

SH Group A/S

Svendborg, Syddanmark, Denmark

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2018/773,**

item No. MED/3.15c. SOLAS 74 as amended, Regulation II-2/4 & X/3 and 2000 HSC Code 7 & 10 and IMO MSC/Circ.1120

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2023-12-13.**

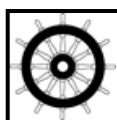
Issued at **Høvik** on **2018-12-14**

DNV GL local station:

Fredericia

Approval Engineer:

Adel Samiei



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim

Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.



Product description

Four different types of non-metallic hose assemblies with permanently fitted 'Tieffe' couplings. Hoses are made of oil & glycol resistant synthetic rubber tubes and oil, abrasion and weather resistant synthetic rubber covers:

- 1) HWB323 (FORCESTREAM 2AT) designed & constructed according to SAE 100R2 AT from SAE J517/ EN 853 2SN, with 2 layers of high tensile steel wire braid reinforcement.
- 2) PS-4SP391 (POWERSTREAM 4SP) designed & constructed according to EN 856 4SP, with 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.
- 3) PS-4SH392 (POWERSTREAM 4SH) constructed according to EN 856 4SH with 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
- 4) PS-R15/398 designed & constructed according to SAE J517 100R15 with 4 or 6 layers of high tensile steel wire braid

Hose Manufacturer: Polimer Kaucuk San.ve Paz. A.S., Istanbul, Turkey
Coupling Manufacturer : Tieffe S.p.a., Via Dell'industria 7, 27010 Cura Carpignano (PV), Italy
Material of construction : Grade 11 SMnPb 37 from EN 10277-3

Application/Limitation

Hose assemblies covered by this certificate are tested according to:

- 1) NS-EN ISO 15540: Fire resistance of hose assemblies- Test methods
- 2) NS-EN ISO 15541: Fire resistance of hose assemblies - Requirements for the test bench

Hose assemblies are suitable for use with petroleum base hydraulic fluids and water base hydraulic fluids.

Maximum working pressure and coupling details are according to the below tables:

Nominal size, ID			PS-4SP391 (POWERSTREAM 4SP)			HWB323 (FORCESTREAM 2AT)		
			Max. working pressure (bar)	Coupling type		Max. working pressure (bar)	Coupling type	
SAE	inch	DN		Ferrule	Insert		Ferrule	Insert
-3	3/16"	5	-	-	-	415	BXT203	CX03
-4	1/4"	6	450	BXS04	CX04	400	BXT204	CX04
-5	5/16"	8	-	-	-	350	BXT205	CX05
-6	3/8"	10	445	BXS06	CX06	330	BXT206	CX06
-8	1/2"	12	415	BXS08	CX08	275	BXT208	CX08
-10	5/8"	16	350	BXS10	CX10	250	BXT210	CX10
-12	3/4"	19	350	BXS12	CX12	215	BXT212	CX12
-16	1"	25	280	BXS16	CX16	165	BXT216	CX16
-20	1 1/4"	31	210	BXS20	CX20	125	BXT220	CX20
-24	1 1/2"	38	185	BXS24	CX24	90	BXT224	CX24
-32	2"	51	165	BXS32	CX32	80	BXT232	CX32

Nominal size, ID			PS-R15/398			PS-4SH392 (POWERSTREAM 4SH)		
			Max. working pressure (bar)	Coupling type		Max. working pressure (bar)	Coupling type	
SAE	inch	DN		Ferrule	Insert		Ferrule	Insert
-12	3/4"	19	420	BSS612/BSS412A	CS12	420	BXS12	CX12
-16	1"	25	420	BSS616/BSN416A	CS16	380	BXS16	CX16
-20	1 1/4"	31	420	-	-	350	BXSH20	CX20
-24	1 1/2"	38	420	BSS624	CS24	290	BXSH24	CX24
-32	2"	51	420	-	-	250	BXSH32	CX32

Type Examination documentation

Tests carried out

Fire tests carried out according to ISO 15540/15541



Job Id: **344.1-008634-1**
Certificate No: **MEDB00004K1**

Marking of product

As a minimum, the final products (hoses with couplings) are to be marked with:

- Manufacturers name or trademark;
- Manufacturer's address;
- Specification or hose name;
- Hose size;
- Date code (quarterly and daily production code).