DNV·GL

Certificate No:
MEDB000002K

EC-TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil

with type designation(s)
HWB313, HWB323, 4SP391, 4SH392, HWB2SC325, HWB1SC315, R13/397, PS.R12/393, PS-R15/398 and HWB R17/31/32C.

Issued to
Sørensen & Kofoed A/S
Herlev, Denmark

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/3.15c and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation II-2/4.2.2.5.1, II-2/4.2.2.5.6 & X/3 and 2000 HSC Code 7.5.4.
Further details of the equipment and conditions for certification are given overleaf.

Høvik, 2015-07-01
for **DNV GL AS**

This Certificate is valid until
2020-07-01

Notified Body No.: **0575**

Petter Langnes
Head of Department

DNV GL local office:
Copenhagen

Tom Berg-Nielsen
Surveyor

NORWEGIAN ACCREDITATION PROD 019

The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

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Product description

Hose type:	HWB313,	DIN EN853 1SN/ SAE J517 100 R1 AT Inner tube: Synthetic rubber Reinforcement: 1 layer of steel wire braid. Cover: Synthetic rubber
	HWB323,	DIN EN853 2SN/ SAE J517 100 R2 AT Inner tube: Synthetic rubber Reinforcement: 2 layers of steel wire braid. Cover: Synthetic rubber
	HWB1SC315,	DIN EN857 1SC Inner tube: Synthetic rubber Reinforcement: 1 layer of steel wire braid. Cover: Synthetic rubber
	HWB2SC325,	DIN EN857 2SC Inner tube: Synthetic rubber Reinforcement: 2 layers of steel wire braid. Cover: Synthetic rubber
	4SH392,	DIN EN856 4SH Inner tube: Synthetic rubber. Reinforcement: 4 layers of steel wire spirals. Cover: Synthetic rubber
	4SP391,	DIN EN856 4SP Inner tube: Synthetic rubber. Reinforcement: 4 layers of steel wire spirals. Cover: Synthetic rubber
	R13/397,	DIN EN856 R13 Inner tube: Synthetic rubber. Reinforcement: 4-6 layers of steel wire spirals Cover: Synthetic rubber
|	PS-R12/393,	DIN EN 856 R12, SAE 100R12 Inner tube: Synthetic rubber Reinforcement: 4 layers of steel wire spirals Cover: Synthetic rubber
	PS-R15/398,	DIN EN 856 R15, SAE 100R15 Inner tube: Synthetic rubber Reinforcement: 4-6 layers of steel wire spirals Cover: Synthetic rubber
HWB R17/31/32C,		SAE 100R17 Inner tube: Synthetic rubber Reinforcement: 1-2 layers of steel wire spirals Cover: Synthetic rubber

Hose manufacturer:
Polimer Kauçuk Sanayi ve Pazarlama A.S., Istanbul, TURKEY
Coupling manufacturers:
Intertraco, ITALY
Material: Ferrule 11SMnPb30 UNI EN 10087-97, Insert 11SMnPb36 EN 10087-97

Tieffe S.r.l, ITALY
Material: 11SMnPb37 UNI EN10277

Application/Limitation

The hoses may be used for oil and fuel oil systems.

Max Working Pressure (MAWP) in Bar, depending on nominal inner diameter (ID)

Nom. ID inch	Nom. ID mm	HWB313	HWB323	HWB1SC315	HWB2SC325	4SH392	4SP391
3/16”	5	250	415	-	-	-	-
1/4"	6	225	400	225	400	-	-
5/16"	8	215	350	215	350	-	-
3/8"	10	180	330	180	330	-	445
1/2"	12	160	275	160	275	-	415
5/8"	16	130	250	130	250	-	350
3/4"	20	105	215	105	215	420	350
1"	25	88	165	88	165	380	280
1 1/4"	32	63	125	-	-	350	210
1 1/2"	40	50	90	-	-	290	185
2"	50	40	80	-	-	250	175

Note: 4SH392 size DN32 has pressure rating according to manufacturer’s recommendations and test reports.

Nom. ID inch	Nom. ID mm	R13/397	PS-R12/393	PS-R15/398	HWB R17/31/32C
3/16”	5	-	-	-	210
1/4"	6	-	-	-	210
5/16"	8	-	-	-	210
3/8"	10	-	276	420	210
1/2"	12	-	276	420	210
5/8"	16	-	276	420	210
3/4"	20	345	276	420	210
1"	25	345	276	420	210
1 1/4"	32	345	207	420	-
1 1/2"	40	345	172	420	-
2"	50	345	172	-	-

Type examination documentation
DNV witnessed fire test reports, dated 2003-12-17 and 2008-01-10

Tests carried out
Fire testing according to ISO 15540/41-1999

Marking of product
As a minimum, the final products (hoses with couplings) are to be marked with:
- Manufacturers name or trademark
- Specification or hose name
- Hose size (inside diameter in inches)
- Date code (quarterly and daily production code)

In addition to the above, each hose assembly is to be marked with:  0575, and year of production.

Mark of conformity

The manufacturer is allowed to affix the Mark of Conformity  according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.

END OF CERTIFICATE