DNV·GL

Certificate No:
MEDB00000Y5

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 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)
PH-253 1SN EN853 /SAE 100 R1AT MSHA, PH-254 2SN EN853 /SAE 100 R2AT MSHA, PH-257 1SC EN857 MSHA, PH-258 2SC EN857 / SAE 100 R16 MSHA, PH-293 SAE 100 R17 MSHA, PH-296 WB1C HP MSHA, PH-297 WB2C HP MSHA, PH-177 R12 EN856 / SAE 100 R12 MSHA, PH-277 4SP EN856 MSHA, PH-278 4SH EN856 MSHA, PH-178 R13 EN856 / SAE 100 R13 MSHA, PH-279 SAE 100 R15 MSHA

Issued to
POLYHOSE INDIA (RUBBER) PVT. LTD.
Tamilnadu, India

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2015/559,**
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.

This Certificate is valid until **2022-01-23**.
Issued at **Høvik** on **2017-01-24**

DNV GL local station:
Mumbai

Approval Engineer:
Adel Samiei

Notified Body
No.: **0575**

for **DNV GL AS**
Digitally Signed By: Marveng, Marianne Spæren
Location: DNV GL Høvik, Norway
Signing Date: 24.01.2017, on behalf of

Vidar Dolonen
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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

Twelve types of hose assemblies
Hose are manufactured by Polyhose India
Couplings are manufactured by Fluidcor (Ningbo) Co., Ltd (CHINA) & Caterpillar Fluid Systems SRL (Italy)

POLYHOSE Type Designations: PH-253 1SN EN853 /SAE 100 R1AT MSHA
EXITFLEX Type Designations: EF-253 EN853 1SN / SAE 100 R1AT MSHA
FLUIDCOR Type Designations: FC-253 EN853 1SN / SAE 100 R1AT MSHA
ANCHOR Type Designations: 1SN EN 853 / SAE 100R1 AT

Design: Flexible rubber hoses reinforced by brass coated one steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: One layer of high tensile steel wire braid.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-254 2SN EN853 /SAE 100 R2AT MSHA
EXITFLEX Type Designations: EF-254 EN853 2SN / SAE 100 R2AT MSHA
FLUIDCOR Type Designations: FC-254 EN853 2SN / SAE 100 R2AT MSHA
ANCHOR Type Designations: 2SN EN 853 / SAE 100R2 AT

Design: Flexible rubber hoses reinforced by brass coated two steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: Two layers of high tensile steel wire braid.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-257 1SC EN857 MSHA
EXITFLEX Type Designations: EF-257 EN857 1SC MSHA
FLUIDCOR Type Designations: FC-257 EN857 1SC MSHA
ANCHOR Type Designations: 1SC EN 857

Design: Flexible rubber hoses reinforced by brass coated one steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: One layer of high tensile steel wire braid.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-258 2SC EN857 / SAE 100 R16 MSHA
EXITFLEX Type Designations: EF-258 EN857 2SC / SAE 100 R16 MSHA
FLUIDCOR Type Designations: FC-258 EN857 2SC / SAE 100 R16 MSHA
ANCHOR Type Designations: 2SC EN 857 / SAE 100 R16

Design: Flexible rubber hoses reinforced by brass coated two steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: Two layers of high tensile steel wire braid.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-293 SAE 100 R17 MSHA
EXITFLEX Type Designations: EF-293 SAE100 R17 MSHA
FLUIDCOR Type Designations: FC-293 SAE 100 R17 MSHA
ANCHOR Type Designations: R17 SAE 100 R17

Design: Flexible rubber hoses reinforced by brass coated one or two steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: One or two layers of high tensile steel wire braid.

Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-296 WB1C HP MSHA
EXITFLEX Type Designations: EF-296 WB1C HP MSHA
FLUIDCOR Type Designations: FC-296 WB1C HP MSHA

Design: Flexible rubber hoses reinforced by brass coated one steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: One layer of high tensile steel wire braid.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-297 WB2C HP MSHA
EXITFLEX Type Designations: EF-297 WB2C HP MSHA
FLUIDCOR Type Designations: FC-297 WB2C HP MSHA

Design: Flexible rubber hoses reinforced by brass coated two steel wire braid.
Inner Tube: Oil and water resistant synthetic nitrile based rubber blend.
Reinforcement: Two layers of high tensile steel wire braid.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-277 4SP EN856 MSHA
EXITFLEX Type Designations: EF-277 EN856 4SP MSHA
FLUIDCOR Type Designations: FC-277 EN856 4SP MSHA
ANCHOR Type Designations: 4SP EN 856 MSHA

Design: Flexible rubber hoses reinforced by brass coated four steel wire spiral.
Inner Tube: Oil and water resistant synthetic neoprene based rubber blend.
Reinforcement: Four layers of high tensile steel wire spiral.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-278 4SH EN856 MSHA
EXITFLEX Type Designations: EF-278 EN856 4SH MSHA
FLUIDCOR Type Designations: FC-278 EN856 4SH MSHA
ANCHOR Type Designations: 4SH EN 856 PLUS MSHA

Design: Flexible rubber hoses reinforced by brass coated four steel wire spiral.
Inner Tube: Oil and water resistant synthetic neoprene based rubber blend.
Reinforcement: Four layers of high tensile steel wire spiral.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-177 R12 EN856 / SAE 100 R12 MSHA
EXITFLEX Type Designations: EF-177 EN856 R12/ SAE 100 R12 MSHA
FLUIDCOR Type Designations: FC-177 EN856 R12/ SAE 100 R12 MSHA
ANCHOR Type Designations: R12 EN 856 / SAE 100 R12 MSHA

Design: Flexible rubber hoses reinforced by brass coated four steel wire spiral.
Inner Tube: Oil and water resistant synthetic neoprene based rubber blend.
Reinforcement: Four layers of high tensile steel wire spiral.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-178 R13 EN856 / SAE 100 R13 MSHA

EXITFLEX Type Designations: EF-178 EN856 R13/ SAE 100 R13 MSHA
FLUIDCOR Type Designations: FC-178 EN856 R13/ SAE 100 R13 MSHA
ANCHOR Type Designations: R13 EN 856 / SAE 100 R13 MSHA

Design: Flexible rubber hoses reinforced by brass coated four or six steel wire spiral.
Inner Tube: Oil and water resistant synthetic neoprene based rubber blend.
Reinforcement: Four or six layers of high tensile steel wire spiral.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

POLYHOSE Type Designations: PH-279 SAE 100 R15 MSHA
EXITFLEX Type Designations: EF-279 SAE100 R15 MSHA
FLUIDCOR Type Designations: FC-279 SAE100 R15 MSHA
ANCHOR Type Designations: R15 SAE 100 MSHA

Design: Flexible rubber hoses reinforced by brass coated four or six steel wire spiral.
Inner Tube: Oil and water resistant synthetic neoprene based rubber blend.
Reinforcement: Four or six layers of high tensile steel wire spiral.
Cover: Neoprene Based Rubber Blend, Weather, oil, abrasion and ozone resistant.
Couplings: Carbon Steel - C20 / C35 / C45

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 may be used for:
Petroleum base Hydraulic Fluids, Water Glycol, Water Oil Emulsion hydraulic Fluids, Fuel Oil, Lubrication Oil, Compressed Air and Water in below temperature range:

- The hydraulic fluids in accordance with ISO 6743-4 with the exception of HFD R, HFD S and HFD T at temperatures ranging from -40 °C to +100 °C (-40 °C to +120 °C for types R12 and R13);
- water based fluids at temperatures ranging from -40 °C to +70 °C;
- air and water at temperatures ranging rom 0 °C to +70 °C

Maximum working pressures in bar (MAWP):

Size		PH253	PH254	PH257	PH258	PH293	PH296
DASH	DN						
-4	6	225	400	225	400	210	290
-5	8	215	350	215	350	210	250
-6	10	180	330	180	330	210	230
-8	12	160	275	160	275	210	200
-10	16	130	250	130	250	210	150
-12	19	105	215	105	215	210	125
-16	25	88	165	88	165	210	110
-20	31	63	125	-	-	-	100
-24	38	50	90	-	-	-	-
-32	51	40	80	-	-	-	-

Size		PH297	PH177	PH277	PH278	PH178	PH279
DASH	DN						
-4	6	450	-	-	-	-	-
-5	8	420	-	-	-	-	-
-6	10	385	280	445	-	-	-
-8	12	345	280	415	-	-	-
-10	16	290	280	350	-	-	-
-12	19	280	280	380	420	350	420

-16	25	200	280	320	380	350	420
-20	31	175	210	210	350	350	420
-24	38	-	175	185	290	350	420
-32	51	-	175	165	250	350	-

Type Examination documentation

Manufacturer's catalogue
Fire test reports:

Size		PH253	PH254	PH257	PH258
DASH	DN				
-4	6	1033.0IS0110/16 1036.0IS0110/16	1039.0IS0110/16 1042.0IS0110/16	1045.0IS0110/16 1048.0IS0110/16	1492.0IS0110/16 1495.0IS0110/16
-10	16	1034.0IS0110/16 1037.0IS0110/16	1040.0IS0110/16 1043.0IS0110/16	1046.0IS0110/16 1490.0IS0110/16	1493.0IS0110/16 1496.0IS0110/16
-16	25	-	-	1047.0IS0110/16 1491.0IS0110/16	1494.0IS0110/16 1497.0IS0110/16
-20	31	1035.0IS0110/16 1038.0IS0110/16	1041.0IS0110/16 1044.0IS0110/16	-	-
-32	51	PHIRPL/QA/067 dated 2016-10-27	PHIRPL/QA/067 dated 2016-10-27	-	-
Fitting		One piece anchor series 1 / One piece fluidcor series 1	One piece anchor series 1 / One piece fluidcor series 1	One piece anchor series 1 / One piece fluidcor series 1	One piece anchor series 1 / One piece fluidcor series 1
Size		**PH293**	**PH296**	**PH297**	**PH177**
DASH	**DN**				
-4	6	1498.0IS0110/16 1501.0IS0110/16	1504.0IS0110/16 1507.0IS0110/16	1510.0IS0110/16 1513.0IS0110/16	-
-6	10	-	-	-	PHIRPL/QA/067 dated 2016-10-27
-8	12	-	-	-	1516.0IS0110/16 1519.0IS0110/16
-10	16	1499.0IS0110/16 1502.0IS0110/16	1505.0IS0110/16 1508.0IS0110/16	1511.0IS0110/16 1514.0IS0110/16	-
-16	25	1500.0IS0110/16 1503.0IS0110/16	1506.0IS0110/16 1509.0IS0110/16	1512.0IS0110/16 1515.0IS0110/16	1517.0IS0110/16 1520.0IS0110/16
-20	31	-	PHIRPL/QA/067 dated 2016-10-27	PHIRPL/QA/067 dated 2016-10-27	-
-32	51	-	-	-	1518.0IS0110/16 1521.0IS0110/16
Fitting		One piece anchor series 1 / One piece fluidcor series 1	One piece anchor series 1 / One piece fluidcor series 1	One piece anchor series 1 / One piece fluidcor series 1	Two pieces anchor series 2 & One piece Fluidcor series 3
Size		**PH277**	**PH278**	**PH178**	**PH279**
DASH	**DN**				
-6	10	PHIRPL/QA/067 dated 2016-10-27			
-8	12	1522.0IS0110/16 1525.0IS0110/16	-	-	-
-10	16	-	-	-	-
-12	19	-	1528.0IS0110/16 1531.0IS0110/16	1534.0IS0110/16 1537.0IS0110/16	1540.0IS0110/16 1543.0IS0110/16
-16	25	1523.0IS0110/16 1526.0IS0110/16	1529.0IS0110/16 1532.0IS0110/16	1535.0IS0110/16 1538.0IS0110/16	1541.0IS0110/16 1544.0IS0110/16
-24	38	-	-	-	1542.0IS0110/16 1545.0IS0110/16

-32	51	1524.0IS0110/16 1527.0IS0110/16	1530.0IS0110/16 1533.0IS0110/16	1536.0IS0110/16 1539.0IS0110/16	-
Fitting		Two pieces anchor series 2 & One piece Fluidcor series 3	Two pieces anchor series 3 & Two piece Fluidcor series 3	Two Piece anchor series 3 & Two Piece Fluidcor Series 2	Two Piece anchor series 3 & Two Piece Fluidcor Series 2

Tests carried out

Fire tests carried out according to ISO 15540/15541

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 (inside diameter in inches)
- Data code (quarterly and daily production code)