EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00001CB

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive (EU) 2015/559, 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)
ROCKMASTER/1SN, ROCKMASTER/2SN, ROCKMANSTER/4SP, ROCKMASTER/4SH, ETERNITY/2, EQUATOR/1, EQUATOR/2, ROCKMASTER/13
Issued to

TESS as

Lierstranda, Norway

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.
This Certificate is valid until **2021-08-28**.

Issued at **Høvik** on **2016-08-29**

Notified Body
No.: **0575**

DNV GL local station:
Station Oslo Maritime and CAP
Approval Engineer:
Adel Samiei

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body

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Product description

Eight types of hose assemblies:

- *Rockmaster/1SN*
  Hose:
  Tube: Oil Resistance synthetic rubber
  Reinforcement: One high tensile steel braid
  Cover: Synthetic rubber with high ozone, weather and heat resistance
  Coupling:
  STD MF2000 couplings (M03400)
- *Rockmaster/2SN & Eternity/2*
  Hose:
  Tube: Oil Resistance synthetic rubber
  Reinforcement: Two high tensile steel braids
  Cover: Synthetic rubber with high ozone, weather and heat resistance
  Coupling:
  STD MF2000 couplings (M03400) for Rockmaster/2SN
  STD MF+ couplings (M00120) for Eternity/2
- *Rockmaster/4SP and Rockmaster/4SH*
  Hose:
  Tube: Oil Resistance synthetic rubber
  Reinforcement: Four high tensile steel spirals
  Cover: Synthetic rubber with high ozone, weather and heat resistance
  Coupling:
  STD MF2000 couplings (M01500 for 4SH and M00910/00920 for 4SP)
- *Rockmaster/R13*
  Hose:
  Tube: Oil Resistance synthetic rubber
  Reinforcement: Four high tensile steel spirals (for DN6 to DN25)
  Six high tensile steel spirals (for DN31 to DN51)
  Cover: Synthetic rubber with high ozone, weather and heat resistance
  Coupling:
  STD MF2000 couplings (M01500)
- *Equator/1*
  Tube: Oil resistant synthetic rubber
  Reinforcement: One high tensile steel braid
  Cover: Synthetic rubber with high ozone, weather and heat resistance.
  Coupling:
  STD MF + couplings M00110/120/130
- *Equator/2*
  Tube: Oil resistant synthetic rubber
  Reinforcement: Two high tensile steel braids
  Cover: Synthetic rubber with high ozone, weather and heat resistance
  Coupling:
  STD MF + couplings M00910/920/930

Couplings are made by Carbon steel zinc plated or Stainless Steel (same design)
Hoses and couplings are made by Manuli Hydraulics. (Hoses are made by Manuli Hydraulics (Suzhou) in China & Manuli Rubber Industries SpA in Italy – Couplings are made by Manuli Hydraulics Polska S.A. in Poland)

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 (bar):

HOSE SIZE			1SN	2SN	Eternity/2	R4SH	R4SP	R13	Equator/1	Equator/2
DN	Dash	inch								
6	-4	¼"	225	400	450	-	485	-	225	400
8	-5	5/16"	215	350	400	-	450	-	215	350
10	-6	3/8"	180	350	365	-	420	-	180	330
12	-8	½"	160	350	350	450	380	-	160	275
16	-10	5/8"	130	250	300	420	380	-	130	250

19	-12	¾"	105	215	300	385	320	350	105	215
25	-16	1"	90	175	225	350	210	350	88	175
31	-20	1 ¼"	65	140	-	300	185	350	65	150
38	-24	1 ½"	50	100	-	250	175	350	50	100
51	-32	2"	40	90	-	-	485	350	40	90
60	-38	2 3/8"	50	90	-	-	-	-	-	-
63	-40	2 ½"	-	-	-	-	-	-	35	-

Type Examination documentation

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
- Specification or hose name
- Hose size (inside diameter in inches)
- Data code (quarterly and daily production code)