

TYPE EXAMINATION CERTIFICATE – EC MODULE B

Certificate no.:
MEDB000097A

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 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 and compensators

with type designation(s)

**ROCKMASTER/1SN, ROCKMASTER/2SN, ROCKMASTER/4SH, ROCKMASTER/4SP, ROCKMASTER/13,
EQUATOR/1 (BLACK), EQUATOR/2 (BLACK), EQUATOR/1 (BLUE), EQUATOR/2 (BLUE)**

issued to

**Hydrasun Ltd.
Aberdeen, United Kingdom**

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

Regulation (EU) 2024/1975,

**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**

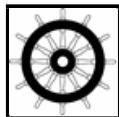
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2030-06-01**.

Issued at **Høvik** on **2025-06-02**

DNV local unit:
UK & Ireland CMC & VMC

Approval Engineer:
Maheshraja Venkatesan



Notified Body
No.: **0575**

for **DNV AS**

Mydlak-Röder, Christine
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 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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

Seven types of hose assemblies:

- **ROCKMASTER/1SN**
Inner tube of oil-resistant synthetic rubber, one high tensile steel braid and high ozone, weather, abrasion and heat resistant synthetic rubber.
- **ROCKMASTER/2SN**
Inner tube of oil-resistant synthetic rubber, two high tensile steel braid and high ozone, weather, abrasion and heat resistant synthetic rubber.
- **ROCKMASTER/4SH**
Inner tube of oil-resistant synthetic rubber, four high tensile steel spirals and high ozone, weather, abrasion and heat resistant synthetic rubber.
- **ROCKMASTER/4SP**
Inner tube of oil-resistant synthetic rubber, four high tensile steel spirals and high ozone, weather, abrasion and heat resistant synthetic rubber.
- **ROCKMASTER/13**
Hoses are made of Oil-resistant synthetic rubber with four high tensile steel spirals (DN6-25) and Six high tensile steel spirals (DN31-51) reinforcement and synthetic rubber with high abrasion, ozone, weather and heat resistance cover
- **EQUATOR/1 (BLUE) and EQUATOR/1 (BLACK)**
Hoses are made of Oil-resistant synthetic rubber with one high tensile steel braid reinforcement and synthetic rubber with high ozone, weather and heat resistance cover
- **EQUATOR/2 (BLUE) and EQUATOR/2 (BLACK)**
Hoses are made of Oil-resistant synthetic rubber with two high tensile steel braids reinforcement and synthetic rubber with high ozone, weather and heat resistance cover

Ferrule & Insert Material: 11SMn30/37 EN 10277-3 (Electroplated Normalised Carbon Steel)
1.4401/1.4404 from EN 10088-3 (Stainless Steel)

Hoses manufacturing location

- a) Manuli Hydraulics (Suzhou) Co. Ltd., Suzhou, China
- b) Manuli Hydraulics Manufacturing Sp. z o.o., Myslowice, Poland

Ferrule & Insert manufacturing location

Manuli Hydraulics Polska S.A., Poland

Assembling location(s)

- a) Hydrasun Ltd., Aberdeen, United Kingdom
- b) Hydrasun Ltd, Glasgow, Scotland

Hose assemblies covered by this certificate are tested according to:

- 1) **ISO 15540:2016** Fire resistance of hose assemblies- Test methods
- 2) **ISO 15541:2016** Fire resistance of hose assemblies - Requirements for the test bench

Application/Limitation

Hose assemblies covered by this certificate are suitable for systems conveying oil or fuel oil with the following maximum allowable working pressures (in bar):

Hose size			1 SN	2SN	4SP	4SH	Equator/1	Equator/2	Rockmaster/13
inch	DN	Dash							
¼	6	-4	225	400	485	-	225	400	-
5/16	8	-5	215	350	-	-	215	350	-
3/8	10	-6	180	350	450	-	180	330	-
½	12	-8	160	350	420	-	160	275	-
5/8	16	-10	130	250	380	450	130	250	-
¾	19	-12	105	215	380	420	105	215	350
1	25	-16	90	175	320	385	88	175	350
1-¼	31	-20	65	140	210	350	65	150	350
1-½	38	-24	50	100	185	300	50	100	350
2	51	-32	40	90	175	250	40	90	350
2-3/8	60	-38	50	90	-	-	-	-	-

Ferrule & Insert designations

Hose size			Rockmaster/1SN & Rockmaster/2SN	Rockmaster/ 4SP	Rockmaster/ 4SH
inch	DN	Dash			
¼	6	-4	MF+M03400-04	MF+M00910-04	-
5/16	8	-5	MF+M03400-05	-	-
3/8	10	-6	MF+M03400-06	MF+M00920-06	-
½	12	-8	MF+M03450-08	MF+M00910-08	-
5/8	16	-10	MF+M03400-10	MF+M00910-10	IP+M01500-10
¾	19	-12	MF+M03400-12	MF+M00920-12	IP+M01500-12
1	25	-16	MF+M03400-16	MF+M00930-16	IP+M01500-16
1-¼	31	-20	MF+M03400-20	MF+M00920-20	IP+M01500-20
1-½	38	-24	MF+M03400-24	MF+M00910-24	IP+M01500-24
2	51	-32	MF+M03400-32	MF+M00910-32	IP+M01500-32
2-3/8	60	-38	MF+M03400-38	-	-

Hose size			Equator/1 (BLUE)	Equator/1 (BLACK)	Equator/2 (BLACK) & (BLUE)	Rockmaster/13
inch	DN	Dash				
¼	6	-4	MF+M00120-04	MF+M00120-04	MF+M00910-04	-
5/16	8	-5	MF+M00120-05	MF+M00120-05	MF+M00910-05	-
3/8	10	-6	MF+M00120-06	MF+M00120-06	MF+M00920-06	-
½	12	-8	MF+M00120-08	MF+M00120-08	MF+M00910-08	-
5/8	16	-10	MF+M00120-10	MF+M00120-10	MF+M00910-10	-
¾	19	-12	MF+M00120-12	MF+M00120-12	MF+M00930-12	IP+M01500-12
1	25	-16	MF+M00130-16	MF+M00130-16	MF+M00930-16	IP+M01500-16
1-¼	31	-20	MF+M00110-20	MF+M00110-20	MF+M00920-20	IP+M01600-20
1-½	38	-24	MF+M00110-24	MF+M00110-24	MF+M00910-24	IP+M01600-24
2	51	-32	MF+M00110-32	-	MF+M00910-32	IP+M01800-32
2-3/8	60	-38	MF+M03400-38	-	-	-

Scope of approval covers only the fire resistance capability of the hoses while the review of assembling of the approved hoses and end fittings for DNV Class approval are not covered under this certification.

Type Examination documentation

Tests carried out

Fire testing according to ISO 15540/ 15541

Marking of product

For traceability to this certificate, each hose is marked with:

- Manufacturer's name or trademark
- Specification or hose name
- Hose size and type designation
- Date of manufacture
- Mark of conformity according to Article 10 of the Council Directive 2014/90/EU

Mark of Conformity may only be affixed to the product when the corresponding certification related to production-control phase module (D, E, or F) is valid.