

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB0000252
Revision No:
1

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)

G1, G2, M3K, M4K, M5K, M6K, EFG3K, EFG4K, EFG5K, EFG6K, M2T, MXT, PRO1T, PRO2T

Issued to

DISTRIBUIDORA INTERNACIONAL CARMEN, S.A.U. (DICSA)
Zaragoza, Spain

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

Regulation (EU) 2021/1158,

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

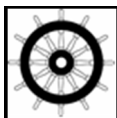
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2027-06-16**.

Issued at **Høvik** on **2022-06-17**

DNV local station:
Area NB/CMC Iberia

Approval Engineer:
Maheshraja Venkatesan



Notified Body
No.: **0575**

for **DNV AS**

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Sverre Olav Bergli
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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 300,000 USD.



Product description

14 different types of non-metallic hoses with permanently fitted couplings:

1. **G1: 1-Wire Braid Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: One braid of high-tensile steel wire
 Cover: Black, oil and abrasion resistant, synthetic rubber (Nitrile/PVC – Type C2)
 End fittings (Ferrule): ZPF2212

2. **G2: 2-Wire Braid Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Two braids of high-tensile steel wire
 Cover: Black, oil and abrasion resistant, synthetic rubber (Modified Nitrile -Type C2)
 End fittings (Ferrule): ZPF2212 (DN6, 10, 12, 16, 19, 25) – ZAC68010 (DN31, 38, 51)

3. **M3K: Mega3000® Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Braided, high-tensile steel wire. -4, -5, -6 and -8 sizes are one braid; -10, -12 and -16 sizes are two braid.
 Cover: Black, oil, abrasion and weather resistant, synthetic rubber (Nitrile/PVC - Type C2), with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover
 End fittings (Ferrule): ZSC2112 (DN6, 10, 12) – ZPF2212 (DN16, 19, 25)

4. **M4K: Mega4000™ Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Two braids of high-tensile steel wire
 Cover: Black, oil, abrasion and weather resistant, synthetic rubber (Modified Nitrile - Type C2), with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover
 End fittings (Ferrule): ZPF2212

5. **M5K Mega5000™ Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Two braids of high-tensile steel wire
 Cover: Black, oil, abrasion and weather resistant, synthetic rubber (Nitrile/PVC - Type C2) (4, 5, 6), Polychloroprene - Type A (8) with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover
 End fittings (Ferrule): ZPF2212

6. **M6K Mega6000™ Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Two braids of high-tensile steel wire
 Cover: Black, oil, abrasion and weather resistant, synthetic rubber (Nitrile/PVC - Type C2), with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover.
 End fittings (Ferrule): ZPF2212

7. **EFG3K Spiral Wire Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Four alternating layers of spiraled, high-tensile steel wire
 Cover: Black, oil resistant, synthetic rubber (Polychloroprene - Type A), with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover.
 End fittings (Ferrule): ZPF1224

8. **EFG4K Spiral Wire Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Four alternating layers of spiraled, high-tensile steel wire
 Cover: Black, oil resistant, synthetic rubber (Polychloroprene - Type A), with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover
 End fittings (Ferrule): ZPF1224 (DN16, 19) – ZAC68010 (DN25, 31)

9. **EFG5K Spiral Wire Hose**

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)
 Reinforcement: Four (six for -20, -24 and -32) alternating layers of spiraled, high-tensile steel
 Cover: Black, oil resistant, synthetic rubber (Polychloroprene - Type A), with color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover.
 End fittings (Ferrule): ZAC68010 (DN12, 16) – ZA6101 (DN19, 25) – Z6101 (DN31, 38, 51)

10. **EFG6K** Spiral Wire Hose

Tube: Black, oil resistant, synthetic rubber (Nitrile - Type C)

Reinforcement: Four (six for -20, -24 and -32) alternating layers of spiraled, high-tensile steel

Cover: Black, oil resistant, synthetic rubber (Polychloroprene - Type A). Color coded layline. Also available with unique abrasion resistant MegaTuff® or XtraTuff™ cover.

End fittings (Ferrule): ZPF1224 (DN10, 12, 16) - ZA6101 (DN19, 25) – Z6101 (DN31, 38, 51)

Fittings material: AISI 316L

11. **M2T** MegaFlex hose constructed as per EN 857 type 2SC

Tube: NBR(Nitrile) based

Reinforcement: two braids of high tensile steel wire

Cover: NBR(Nitrile) based. Black, oil, abrasion and weather resistant

End fittings (Ferrule): ZPF2212

12. **MXT** constructed as per EN 857 type 2SC

Tube: NBR(Nitrile) based

Reinforcement: two braids of high tensile steel wire

Cover: NBR(Nitrile) based

End fittings (Ferrule): ZPF2212

13. **PRO1T** constructed as per EN 857 type 1SC

Tube: NBR(Nitrile) based

Reinforcement: one braid of high tensile steel wire

Cover: NBR(Nitrile) based

End fittings (Ferrule): ZSC2112

14. **PRO2T** constructed as per EN 857 type 2SC

Tube: NBR(Nitrile) based

Reinforcement: two braids of high tensile steel wire

Cover: NBR(Nitrile) based

End fittings (Ferrule): ZPF2212

Manufacturing locations

Hoses : Gates (U.K.) Limited, 5 Alpha Drive, Eaton Socon, St. Neots, Cambridgeshire, UK

Fittings : Distribuidora Internacional Carmen, S.A.U. (DICSA), Zaragoza, Spain.

Assembling location

Distribuidora Internacional Carmen, S.A.U. (DICSA), Zaragoza, Spain.

Testing standards conforming 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

Maximum working pressure of each hose type/size (in bar):

Hose Type	DN6	DN8	DN10	DN12	DN16	DN19	DN25	DN31	DN38	DN51
	-4	-5	-6	-8	-10	-12	-16	-20	-24	-32
G1	225	-	180	160	130	105	88	63	50	40
G2	400	-	330	275	250	215	165	125	90	80
M3K	210	-	210	210	210	210	210	-	-	-
M4K	280	-	280	280	280	280	280	-	-	-
M5K	350	-	350	350	-	-	-	-	-	-
M6K	420	-	-	-	-	-	-	-	-	-
EFG3K	-	-	-	-	-	-	-	210	210	210
EFG4K	-	-	-	-	280	280	280	280	-	-
EFG5K	-	-	-	350	350	350	350	350	350	350
EFG6K	-	-	420	420	420	420	420	420	420	420
M2T	420	380	350	296	262	241	172	159	140	103
MXT	400	350	330	275	250	215	165	-	-	-
PRO1T	225	215	180	160	130	105	88	-	-	-
PRO2T	400	350	330	275	250	215	165	-	-	-

Hose assemblies covered by this type approval certificate are approved for use with petroleum base and water base hydraulic fluids within a temperature range as specified below:

Hose type	Minimum temperature	Maximum temperature
G1, G2, M2T, MXT, M3K, M4K, M5K, M6K, PRO1T, PRO2T	-40°C	+100°C
EFG3K, EFG4K, EFG5K, EFG6K	-40°C	+121°C

Type Examination documentation

Gates catalogue for flexible hoses

Gate's letter dated 2015-05-18

Dicsa technical specification for fittings dated March 2016.

Catalogues:

- PRO1T & PRO2T Hydraulic hose E2/50179 dated 05/2019
- Datasheet Hydraulic hose MXT™
- Datasheet Hydraulic hose M2T®

Authorization letter from Gates (U.K.) Ltd dated June 2nd, 2022

Fittings drawings:

- ZSC2112: 0400, 0500, 0600, 0800_1, 1000, 1200, 1600
- ZPF2212: 0400_12, 0500_6, 0600_5, 0800_7, 1000_5, 1200_7, 1600_5, 2000_5, 2400_3, 3200_V5
- ZPF1224: 0006_3, 0400_3, 0800_3, 1000_4, 1200_V1, 1600_3, 2000_3, 2400_V1, 3200_3
- ZA61010: 1200_V2, 1600_1
- Z6101: 2000_1, 2400_1, 3200
- ZAC68010: 0800, 1000, 1200_1, 1600_1, 2000, 2400_2, 3200

Fire test reports: (LAPI)

- 890.0IS0110/15 (EFG3K: DN38) & 1591&1592.0IS0110/16 (EFG3K: DN31, DN51)
- 090.0IS0110/16 (EFG5K: DN12) 455.0IS0110/15 (EFG5K: DN19) 891.0IS0110/15 (EFG5K: DN38)
- 456.0IS0110/15 (EFG6K: DN10) 614.0IS0110/15 (EFG6K: DN19) 1153.0IS0110/15 (EFG6K: DN38)
- 1830.0IS0110/14 (G1: DN10) 038.0IS0110/15 (G1: DN19) 1832.0IS0110/14 (G1: DN38)
- 1833.0IS0110/14 (G2: DN10) 1921.0IS0110/15 (G2: DN19) 091.0IS0110/16 (G2: DN38)
- 225.0IS0110/15 (EFG4K: DN19) 256.0IS0110/16 (EFG4K: DN31) 942.0IS0110/16 (EFG4K: DN16)
- 228.0IS0110/15 (M3K: DN10) 1924.0IS0110/15 (M3K: DN19) 943.0IS0110/16 (M3K: DN25)
- 040.0IS0110/15 (M4K: DN10) 229.0IS0110/15 (M4K: DN19) 944.0IS0110/16 (M4K: DN25)
- 042.0IS0110/15 (M5K: DN10) 945&946.0IS0110/16 (M5K: DN6, DN12)
- 043.0IS0110/15 (M6K: DN6)
- Type M2T: 1548/21, 1549/21, 1550/21 dated 22/10/2021
- Type MXT: 1551/21, 1552/21, 1553/21 dated 22/10/2021
- Type PRO1T: 1554/21, 1555/21, 1556/21 dated 22/10/2021
- Type PRO2T: 1557/21, 1558/21, 1559/21 dated 22/10/2021

Tests carried out

Fire test according to ISO 15540 and ISO 15541

Marking of product

As a minimum, the final product to be marked with at least the following particulars:

- Manufacturer's name or trademark
- Manufacturer's address
- Specification or hose name
- Hose size (inside diameter in inches)
- Data code (quarterly and daily production code)
- 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.