



TYPE APPROVAL CERTIFICATE

Certificate No. : CPH28520-HS001 **Initial Approval** : 13th February, 2014.
Product : Flexible Rubber Hose Assembly
Manufacturer : Dunlop Hiflex AB
 Seldonsvagen 2, Box 536, 302 62 Halmstad, Sweden

Product Description : Type :

- Dunlop Hiflex 122 1SN, Alfagomma Flexor 1SN/1AT-HF
- Dunlop Hiflex 222 2SN, Alfagomma Flexor 2SN/2AT-HF
- Dunlop Hiflex 241 Series, Alfagomma Flexopak 2
- Dunlop Hiflex SP33 Series
- Dunlop Hiflex 790 4SH, Alfagomma Flexor 4SH
- Dunlop Hiflex 713L, 713G, Alfagomma Flexor 13

Application :

- Hydraulic, fuel and lubricating oil, compressed air, fresh water & sanitary systems

" See Appendix 1 ~ 3 "

Approval Condition : " See Appendix 1 ~ 3 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows and entered in the "List of Approved Manufacturers and Type Approved Equipment".

Pt. 5, Ch. 6, Sec. 1 of the Rules for Classification of Steel Ships.

This Certificate is valid until 12th February, 2019.

Issued at Busan, Korea on 13th April, 2015.



KOREAN REGISTER OF SHIPPING

*General Manager of
Marine & Ocean Equipment Team*

Note :1 : The approval will be automatically suspended and the Certificate become invalid from the expiry date of the Certificate in the event that the extension has not been granted or the renewal of the Certificate is not underway.

2 : The manufacturer should notify this Society of any modification or changes that may affect the validity of this Certificate.

Appendix 1

Product Description and/or Approval Condition

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1. Product Descriptions :

Assembly Type	Max Working Press. (bar)	Working Temperature (°C)	Size (inch)
Dunlop Hiflex 122 1SN, Alfagomma Flexor 1SN/1AT-HF	40 ~ 225	-40 ~ 100	1/4 ~ 2
Dunlop Hiflex 222 2SN, Alfagomma Flexor 2SN/2AT-HF	80 ~ 400	-40 ~ 100	1/4 ~ 2
Dunlop Hiflex 241 Series, Alfagomma Flexopak 2	100 ~ 420	-40 ~ 100	1/4 ~ 2
Dunlop Hiflex SP33 Series	240 ~ 500	-40 ~ 100	3/8 ~ 1 1/4
Dunlop Hiflex 790 4SH, Alfagomma Flexor 4SH	250 ~ 420	-40 ~ 100	3/4 ~ 2
Dunlop Hiflex 713L, 713G, Alfagomma Flexor 13	350 ~ 380	-40 ~ 121	3/4 ~ 2

1) Dunlop Hiflex 122 1SN, Alfagomma Flexor 1SN/1AT-HF

(1) Specification of materials

- Tube : Oil resistant synthetic rubber
- Cover : Abrasion, ozone and hydrocarbon resistant synthetic rubber
- Reinforcement : One high tensile steel braid

(2) Individual Approval conditions

This approval is based on the Test reports for dimensional check, change in length, proof, burst, impulse, cold flexibility test issued by Dunlop Hiflex and fire resistance test no. 1666.OIS0110/10 & 1667.OIS0110/10 & 1668.OIS0110/10 dated on 26 Nov, 2010 issued by LABORATORIO PREVENZIONE INCENDI s.r.l.

2) Dunlop Hiflex 222 2SN, Alfagomma 2SN/2AT-HF

(1) Specification of materials

- Tube : Oil resistant synthetic rubber
- Cover : Abrasion, ozone and hydrocarbon resistant synthetic rubber
- Reinforcement: Two high tensile steel braids

(2) Individual Approval conditions

This approval is based on the Test reports for dimensional check, change in length, proof, burst, impulse, cold flexibility test issued by Dunlop Hiflex and fire resistance test no. 218.OIS0110/05 & 222.OIS0110/05 dated 07, Mar. 2005 and 271.OIS0110/05 & 270.OIS0110/05 & 274.OIS0110/05 dated 08, Mar. 2005 and 159.OIS0110/05 dated 16, Feb. 2005 issued by LABORATORIO PREVENZIONE INCENDI s.r.l.

3) Dunlop Hiflex 241 Series, Alfagomma Flexopak 2

(1) Specification of materials

- Tube : Oil resistant synthetic rubber
- Cover : Abrasion, oil, water and ozone resistant synthetic rubber
- Reinforcement: Two high tensile steel braids

< To be continued >

Appendix 2

Product Description and/or Approval Condition

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Date of Issue : 13th April, 2015.

(2) Individual Approval conditions

This approval is based on the Test reports for dimensional check, change in length, burst, impulse, ozone resistance, cold flexibility, oil resistance, adhesion and abrasion resistance test issued by Dunlop Hiflex and fire resistance test no. 527. OISO110/04 & 525. OISO110/04 & 528. OISO110/04 dated 18, Jun. 2004 issued by LABORATORIO PREVENZIONE INCENDI s.r.l.

4) Dunlop Hiflex SP33 Series

(1) Specification of materials

- Tube : Oil resistant synthetic rubber
- Cover : Weather, oil, abrasion and ozone resistant synthetic rubber
- Reinforcement : Three high tensile steel braids

(2) Individual Approval conditions

This approval is based on the Test reports for dimensional check, change in length, burst, impulse, ozone resistance, cold flexibility, oil resistance, adhesion and abrasion resistance test issued by Dunlop Hiflex and fire resistance test no. 530. OISO110/04 & 531. OISO110/04 dated 18, Jun. 2004 issued by LABORATORIO PREVENZIONE INCENDI s.r.l.

5) Dunlop Hiflex 790 4SH, Alfagomma Flexor 4SH

(1) Specification of materials

- Tube : Oil resistant synthetic cover
- Cover : Abrasion, ozone and hydrocarbon resistant synthetic rubber
- Reinforcement : Four high tensile steel spirals (4S)

(2) Individual Approval conditions

This approval is based on the Test reports for dimensional check, change in length, proof, burst, impulse, cold flexibility test issued by Dunlop Hiflex and fire resistance test no. 218. OISO110/05 & 222. OISO110/05 dated 07, Mar. 2005 and 271. OISO110/05 & 270. OISO110/05 & 274. OISO110/05 dated 08, Mar. 2005 and 159. OISO110/05 dated 16, Feb. 2005 issued by LABORATORIO PREVENZIONE INCENDI s.r.l.

6) Dunlop Hiflex 713L, 713G, Alfagomma Flexor 13

(1) Specification of materials

- Tube : Oil resistant synthetic rubber
- Cover : Abrasion, ozone and hydrocarbon resistant synthetic rubber
- Reinforcement: Four or six high tensile steel spirals (4S/6S)

(2) Individual Approval conditions

This approval is based on the Test reports for dimensional check, change in length, proof, burst, impulse, cold flexibility test issued by Dunlop Hiflex and fire resistance test no. 158. OISO110/05 dated on 16 Feb, 2005 and 276. OISO110/05 & 277. OISO110/05 dated on 08, Mar. 2005 issued by LABORATORIO PREVENZIONE INCENDI s.r.l.

2. Common Approval conditions ;

- 1) The hoses are to be used as short as possible in the length of the permanent piping system where flexibility is required.

< To be continued >

Appendix 3

Product Description and/or Approval Condition

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- 2) Flexible hoses are to be installed in clearly visible and readily accessible locations.
- 3) Where flexible pipes are intended to be used in piping systems conveying flammable fluids that are in close proximity of heated surfaces, the risk of ignition, due to failure of the pipe assembly and subsequent release of fluids, is to be mitigated, as far as practicable, by the use of screens or other similar protection to the satisfaction of the Society.
- 4) Individual Product Certification is required where the flexible hoses are intended to use for Class I & II piping system.
- 5) Coupling / Hose manufacture : Alfagomma
- 6) Flexible Hoses should be marked with the following items.
 - Hose manufacturer's name of trademark
 - Date of manufacture (Month/Year)
 - Designation Type
 - Nominal diameter, Pressure rating, Temperature rating

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