DNV·GL

Certificate No:
MEDB00003AG

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Materials other than steel for pipes conveying oil or fuel oil: flexible pipe assemblies

with type designation(s)
marsoflex® MDO, MDODS - marsoflex® HFH, HFHDS

Issued to
Alfons Markert & Co. GmbH
Neumünster Schleswig-Holstein, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306,**
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 **2020-12-16**.

Issued at **Hamburg** on **2017-11-28**

DNV GL local station:
Hamburg

Approval Engineer:
Hagen Markus

Notified Body
No.: **0098**

for **DNV GL SE**

Sven Dudszus
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 SE 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

The marsoflex® MDO hose assembly consist of a helically convoluted PTFE hose with an AISI 304 high tensile stainless steel braid protected by a fire sleeve.

The marsoflex® HFH hose assembly consist of a smooth PTFE hose with two layers of AISI 304 high tensile stainless steel braid protected by a fire sleeve.

The marsoflex® MDODS and HFHDS hose assemblies are provided with an additional outer hose protected by a fire sleeve.
One hose end fitting is provided with a port for connection of a pressure monitoring sensor.

Hose end fittings are made of stainless steel or galvanized carbon steel.
Refer to drawings specified on page 3.

Application/Limitation

Piping systems conveying oil or fuel oil.

Size and pressure range

Type	DN	Hose I.D.		M.A.W.P. (bar)
		inch	mm	
marsoflex® MDO, MDODS	16	5/8"	16.0	16
marsoflex® MDO	20	¾"	20.0	16
	25	1"	25.0	30
	32	1 ¼"	32.0	16
	38	1 ½"	38.0	16
marsoflex® MDO, MDODS	50	2"	50.0	16

Type	DN	Hose I.D.		M.A.W.P. (bar)
		inch	mm	
marsoflex® HFH	16	5/8"	16.0	80
	20	¾"	20.0	80
	25	1"	25.0	80
marsoflex® HFHDS	25	1"	25.0	16
	50	2"	50.0	16

Temperature range

- 50°C up to +150°C HFH, HFHDS, MDO (+ 180°C short term)
- 40°C up to + 90°C (MDODS)

Type Examination documentation

Tests carried out

Fire resistance test acc. to EN ISO 15540, EN ISO 15541.

Marking of product

For traceability to this certificate each hose assembly is to be marked at least with:
- Manufacturer's name or trade mark
- Type designation
- M.A.W.P.
- Size
- Mark of Conformity according to Article 10 of the Council Directive (MED)

END OF CERTIFICATE