

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB0000947
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

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)
PTFE - corrugated hose type TFW

Issued to
HANSA-FLEX AG
Bremen, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **MSN 1874 Amendment 9**,
Item No. UK/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 **2029-06-16**.

Issued at **London** on **2024-06-17**

DNV local unit:
Hamburg-CMC North/East



for **DNV UK Ltd.**

Approval Engineer:
Hagen Markus

Approved Body No.: **0097**

Mydlak-Röder, Christine
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.
During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved 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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. In case limitations of use apply, these should be indicated in the Annex.

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

Corrugated multilayer PTFE hose with fiberglass covering and stainless-steel wire braid reinforcement.
Flame resistant acc. to ISO 15540:2016

Optionally, the TFW PTFE hose assemblies may protected with the following hose cover types and sizes:

- Heat protection hose FBSB 019 up to FBSB 089 (material: calcium silicate fibre and silicone cover) or
- Abraison / splash protection hose TGFIS 020 up to TGFIS 093 (material: PET)

Hose end fitting (niple-ferrule) are made of carbon steel or stainless steel.

Hose end fittings (pipe connection side)

Mechanical joints – compression couplings. Reference DNV-RU-SHIP Pt. 4 Ch. Section 9, Table 9

DIN 3861:2016-09 Solderless pipe fittings – cutting rings

DIN 3870:2001-09 Solderless and Brazed Pipe Fittings - LL Series Union Nuts

DIN 7642:1997-07 Compression couplings- Ring type nipples for brazed connection

DIN 2353:2013-01 Solderless pipe fittings with cutting ring

ISO 8434 series Metallic Pipe Fittings for Fluid Power

ISO 8434-1:2018-07 - Fittings with 24° cone

ISO 8434-2, 2007-09 - 37° flare fitting

ISO 8434-3, 2005-07 - Butt fitting with O-ring in the nozzle

ISO 8434-6, 2009-08 – Fittings with 60° cone with or without O-ring.

Flanges

ISO 6162-1 Flange connections for pressures from 3.5 MPa (35 bar) to 35 MPa (350 bar), DN 13 to DN 127

ISO 6162-2 Flange Connections Pressure from 42 MPa (420 bar), DN 13 to DN 76

DIN EN 1092-1:2018 Round flanges - Steel flanges ASME B16.5: 2020 Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24, Metric/Inch Standard

Application/Limitation

Materials other than steel for pipes conveying oil or fuel oil (flexible pipe assemblies and compensators)

Conduction for pressurized media, suitable for PTFE

Sizes and nominal pressure PN

TFW	010	013	016	020	025	032	040	050	065	080
PN (bar)	125	105	100	90	80	64	53	35	25	20

Operating temperature range: -55 °C to max. 205 °C

For service temperature above +50 °C the pressure reduction factors specified by Hansa-Flex AG are to be observed.

Test carried out

Fire resistance test according to ISO 15540:2016, ISO 15541:2016

Type Examination documentation

Product specification

PTFE Hose

- Hose data sheet TFW, 09.06.2024

Drawings Hose end fitting

- HS-SAR-00041-1_PN_10_AOL_VA_Nippel
- HS-SAR-00056_PN_32_AOL_VA_Nipple
- MET-10.006-01_TFH032VA_Presshülse DN32 TFH 032 VA Ferrule
- MET-10.010-01_TFH010VA_Presshülse DN10 TFH 010 VA ferrule
- MET-10.034-01_TFH010_Presshülse DN10 TFH 010_carbon steel ferrule
- MET-10.039-01_TFH032_Presshülse DN32 TFH 032_carbon steel ferrule

PTFE TFW Hose assembly

- Excel spread sheet "Approved combinations of materials for nipple-ferrule-hose cover PTFE hose type TFW," 06.2024
- Crimping dimensions Hansa-Flex document "Pressmaße für PTFE Schläuche/ Instruction for pressing, Schlauchtyp TFW/TFS/ hose-type TFW/TFS," 09.2023.

Test reports

- Fire resistance test reports issued by IHA Dresden

Abrasion / splash protection TGFISO20	Heat protection FBSB		No hose cover	
FP-106-23	012-21	039-22	048-19	028-20
FP-107-23	013-21	040-22	050-19	029-20
FP-108-23	014-21		052-19	
FP-109-23	015-21		046-19	
FP-089-23	038-22		026-20	

Marking of product

For traceability to this certificate each hose assembly is to be marked on the hose and or on the hose end fitting at least with:

Scope	Example
Manufacturer / date of manufacture	HF I0 06/24
Type designation	TFW
Mark of Conformity ¹	 0097 / 24

Note

¹ may only be affixed to the type approved equipment, in case the associated production surveillance module (D, E or F) is valid.