



Marine & Offshore

Certificate number: 11100/E1 BV

File number: ACM 135/2022/005

Product code: 2104I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

TUBIFLEX SPA

TORINO - ITALY

for the type of product

NON-METALLIC HOSES (FLEXIBLE PIPES) ASSEMBLIES

PTFE hoses and hose assemblies TX-TUBIFLON

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 08 Nov 2027

For Bureau Veritas Marine & Offshore,

At BV NAPOLI, on 26 Mar 2024,

Alessandro Asbornio

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Convuluted PTFE hoses and hose assemblies TX-TUBIFLON with fiberglass coating and stainless-steel braid

1.1 Range

- Hoses: Type TX.T.8850.50 (PTFE with one stainless steel wire-braiding), TX.T.8850.51 (conductive PTFE with one stainless steel wire-braiding).

- Hose Assemblies: Type TX.M.885V.50, TX.M.885V.51, TX.M.885S.50, TX.M.885S.51, TX.M.885VS.50, TX.M.885VS.51

Nominal diameter ND (inches)	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
Nominal diameter ND (mm)	10	13,2	16	19,5	25,5	32	38,5	51	64,5	76,5
Nominal pressure (bar)	125	105	100	90	80	64	53	35	25	20

Maximum working temperature: +205 °C

Where:

- V means covered by Fiberglass, S means covered by Fiberglass externally impregnated with silicon,

- 50 means internal layer nonconductive PTFE, 51 means internal layer conductive PTFE

The maximum working pressure is not to exceed one quarter of the burst pressure at the service temperature.

1.2 Material specification

Part	Material
Hose	Multi-layer PTFE core, reinforced with fiberglass coating
Braid	AISI 304 (1.4301 EN 10088-1)
Fittings	Zinc-plated carbon steel Stainless steel AISI 304 (1.4301 EN 10088-1) Stainless steel AISI 316L (1.4404 EN 10088-1)

When other choices of materials are used per manufacturer's recommendations, the BV agreement is to be obtained.

2. DOCUMENTS AND DRAWINGS

Manufacturer's publication:

- TUBIFLON TX.T.88XX Rev.04.

- Fittings specification G120 Rev. 0.

- Drawing N° PS 3561000 dated 30/11/2007.

- Table N° TX3/A dated 04/1991.

- Drawing N° PS 3493000 dated 09/05/2007.

- Table N° TX.T.885S.50 dated 07/1998.

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or change to these documents and drawings.

3. TEST REPORTS

- Burst test reports N°2623 dated 28/06/2001 witnessed by a BV Surveyor and N°11-05 dated 06/12/2011 witnessed by a Class Society' Surveyor.

- Impulse test report N° 530-17216/2001 dated 04/07/2001 witnessed by a Class Society' Surveyor.

- Fire resistance test LAPI report N° 532/12, 533/12, 534/12 dated 24/04/2012 and 153/13, 154/13, 155/13 dated 11/02/2013.

- Ageing test N° TUBI L 16169-1 dated 27/05/2008 & TUBI L 16169-2 dated 04/07/2008.

4. APPLICATION / LIMITATION

4.1 - May be used for the following services on board:

- Fresh and sea water, lubricating oil, fuel oil, steam and condensate, compressed air

4.2 - The installation of hose assemblies is to be in accordance with the manufacturer's instructions and the Society's Rules requirements to take into consideration forces due to vibration. The hoses are not to be used on services when vibration test is required in Bureau Veritas Rules.

4.3 - The hoses are to be limited to a length necessary to provide for relative movement between fixed and flexibly mounted items of machine/equipment or systems and are only to be used in lengths up to 2 m. The hoses are to be installed in clearly visible and readily accessible locations at all times.

4.4 - The use of stainless steel is restricted as per Bureau Veritas rules.

4.5 - Taper threaded end connections are not to be used for oil circuits in engine rooms nor any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.

4.6 - End fittings as per manufacturer's specification. The hoses are to be entirely assembled in the manufacturer's workshop.

4.7 - Not to be used in case of high level of vibrations, where fitted to engines, pumps, compressors and other sources of high vibrations

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **TUBIFLEX SPA** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.3 - BV product certificate is required.

5.4 - Each hose with end fittings is to be hydraulically pressure tested to 1.5 the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

5.5 - For information, **TUBIFLEX SPA** has declared to Bureau Veritas the following production site:

TUBIFLEX SPA
Via Plava, 98/C
10135 TORINO
ITALY

6. MARKING OF PRODUCT

Each hose is to be clearly and indelibly marked with at least:

- Manufacturer name or logo
- Type designation
- Date of manufacture
- Nominal Diameter
- Design Pressure & Temperature
- Society's brand as relevant

7. OTHERS

It is **TUBIFLEX SPA**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

This certificate supersedes the Type Approval Certificate N° 11100/E0 BV issued by the Society.

***** END OF CERTIFICATE *****