



Marine & Offshore

Certificate number: 50750/B0 BV

File number: ACM 135/2022/10

Product code: 21011

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
ORBASSANO -TO - ITALY

for the type of product

METALLIC EXPANSION JOINTS / BELLOWS
Expansion joints type UNFF

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: 02 Aug 2028

For Bureau Veritas Marine & Offshore,

At BV NAPOLI, on 02 Aug 2023,

Sandro BRUSEGAN

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.

The electronic version is available at: <http://www.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=abo7jjmidb>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Metallic Expansion Bellows : UNFF

1.1 Range

Type	Size (mm)	Maximum working pressure (bar)	Number of plies	Axial Movement (mm)	Lateral Movement (mm)	Number of cycles	End Connection
UNFF	DN 450	0,05	2	±50	±60	3000	Flanged

- Maximum working temperature: 442°C

1.2 Material specification

Part	Material
Bellows	X2CrNiMo 17-12-2 (1.4404) EN10028-7
Flange	X2CrNiMo 17-12-2 (1.4404) EN10028-7

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

2. DOCUMENTS AND DRAWINGS

- Drawing N° T29974 Rev. B dated 08/09/2017
- EJMA Calculation N° SR-T29974 dated 08/09/2017.

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 changes to these documents and drawings.

3. TEST REPORTS

- Test report N° 1054/A dated 17/11/2017 witnessed by a BV Surveyor.

4. APPLICATION / LIMITATION

- 4.1 - The expansion bellows may be used for exhaust gas systems.
- 4.2 - Reduction factors are to be taken in consideration for maximum working pressure and tolerable movement caused by temperature influence according to manufacturer's instructions.
- 4.3 - The expansion joints assemblies are to be installed according to manufacturer's instructions and Bureau Veritas Rules requirements.
- 4.4 - In all cases, the associated pipelines are to be suitably aligned, supported and anchored. The joints are to be at any time accessible, well visible and protected against over extension and compression and against mechanical damage.
- 4.5 - The calculated maximum values of axial and lateral movements at design full cycles are not to be exceeded
- 4.6 - The expansion joint are not to be used in piping systems where high levels of vibration are expected to occur in service.
- 4.7 - Piping system drawings and calculation notes are to be submitted for review whenever expansion bellows are fitted on board
BV-classed ships.
- 4.8 - The use of stainless steel is to be restricted as per the BUREAU VERITAS Rules.

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 expansion joint 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
STRADA TORINO 25
10043 ORBASSANO -TO
ITALY

6. MARKING OF PRODUCT

Each hose assembly is to be clearly marked with at least:

- Manufacturer name or logo
- Date of manufacture
- Type description
- Maximum working pressure
- Nominal Diameter
- Temperature rating
- 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° 50750/A3 BV issued by the Society.

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