



Marine & Offshore

Certificate number: 55826/A0 BV

File number: ACM 188/2520/02

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

HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.
ISTANBUL - TURKEY

for the type of product

METALLIC EXPANSION JOINTS / BELLOWS
MKTY-30

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
Bureau Veritas Rules for the Classification of Offshore Units
Bureau Veritas Rules for the Classification of Naval Ships
Bureau Veritas Rules for the Classification of Yachts

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: 19 Feb 2024

For Bureau Veritas Marine & Offshore,

At BV ISTANBUL, on 19 Feb 2019,

Gurcan Yilmaz



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

MKTY-30 TYPE Expansion Joint

1.1. Ratings

Size range	DN25 (1") – DN350 (14")
Design Standard	EJMA Code 10
Class range	PN 16 / 25
Design Pressure (MPa)	1.6 / 2.5
Design Temperature (°C)	-80 / 300
End connections	Floating Flanged
Allowable displacement	Axial -20 / +10
Number of plie(s)	2 to 4
Number of cycles	1000

1.2: Materials

Part	Material
Bellow	Stainless Steel EN 1.4301,1.4306,1.4541,1.4401, 1.4404,1.4571,1.4462,2.4856, 1.4828,1.4833,1.48 Double Plie
Flanges	Carbon Steel 1.4301,1.4306,1.4541,1.4401, 1.4404,1.4571,1.4462,2.4856, 1.4828,1.4833,1.4845,1.4562, 1.4841 / 1.0038,1.0553, 1.0473,1.0425,1.0426,1.0352

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

2. DOCUMENTS AND DRAWINGS

- Product datasheet N° EJ-TDS1 dated 21/12/2018
- Drawing N° TK-1341-001 Rev. 03 dated 17/01/2018
- Calculation Sheets dated 07/12/2018

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

3.1 Type tests witnessed by a BV Surveyor including burst test at 4 times the design pressure, hydrostatic test at twice the design pressure and cycle expansion test during 1000 cycles:

- Test report N° 0001/2/3 & 4 dated 20/12/2018 performed on sizes DN 25, DN 50, DN 100 & DN 350

3.2 Vibration test report N° 0005 dated 27/12/2018.

4. APPLICATION / LIMITATION

4.1 May be used for the following services on board:

Oil fuel, lubricating, hydraulic and thermal oil systems, fresh water and sea water cooling systems, compressed air systems, bilge and ballast systems, Class III steam systems and exhaust gas systems

4.2 Expansion joint is not accepted in high pressure fuel oil injection systems.

4.3 Reduction factors are to be taken in consideration for maximum working pressure and tolerable movement caused by temperature influence according to manufacturer's instructions.

4.4 The calculated maximum values of axial and lateral movements at design full cycles are not to be exceeded.

4.5 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.

4.6 Piping system drawings and calculation notes are to be submitted for review whenever expansion bellows are fitted on board BV-classed ships.

4.7 The joints are to be installed according to manufacturer's instructions and Bureau Veritas Rules requirements.

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 **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** in compliance with the type and the requirements described in this certificate.

5.2 This type of product is within the category IBV of BV Rule Note NR320.

5.3 BV product certificate is required.

5.4 Each metallic expansion joint with end fittings is to be hydraulically pressure tested to twice the maximum working pressure and provided with the manufacturer's pressure test report and conformity of production.

For information, **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.** has declared to Bureau Veritas the following production site:

**HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.: ATATURK SAN. BOLGESI, MUSTAFA INAN CAD. NO:44,
HADIMKOY, 34860 ISTANBUL, TURKEY**

6. MARKING OF PRODUCT

Each expansion joint shall be permanently marked with at least:

- Manufacturer's name or trademark
- Date of manufacture (month/year)
- Designation type reference
- Nominal diameter
- Pressure rating
- Temperature rating

7. OTHERS

It is **HACI AYVAZ END. MAMULLER SAN. VE TIC. A.S.**'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.

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