



Marine & Offshore

Certificate number: 14336/C0 BV

File number: ACM 135/0509/4

Product code: 2130H

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

Gates Tube Fittings GmbH

Euskirchen - GERMANY

for the type of product

MECHANICAL JOINTS - COMPRESSION COUPLINGS - SCREW TYPE

EMB FS system

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: 06 Dec 2026

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 06 Dec 2021,

Adama Diene



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:

EMB FS system

Static and mobile equipment tube-reshaping

Steel or stainless-steel pipes can be reshaped in a range from 6 to 42 mm outer diameter.

1.1 Design:

The EMB FS system consists of the following components:

- Tube reshaping machine type FS90/FS92/FS93
- Fitting body (according DIN 2353, ISO 8434-1)
- FSR-/FSSR function ring with soft seal (NBR/FPM/PTFE)
- Nut (according DIN 2353, ISO 8434-1).

1.2 Identification of pipes and rating:

Series L:

Tube OD [mm]	6	8	10	12	15	18	22	28	35	42
Maximum pressure [bar]	500	500	500	400	400	400	250	250	250	250

Series S:

Tube OD [mm]	6	8	10	12	16	20	25	30	38
Maximum pressure [bar]	800	800	800	630	630	400	400	400	400

1.3 Material:

Pipe: carbon steel according to EN 10305-4 or stainless steel according to DIN EN 10216-5

Seal: NBR/FPM/PTFE

1.4 Temperature range for the used materials:

Material	Maximum allowable temperature [°C]	Maximum allowable temperature [°C]
Carbon steel	-40	+120
Stainless steel	-60	+400
NBR	-35	+100
FPM	-25	+200
PTFE	-60	+200

2. DOCUMENTS AND DRAWINGS:

According to the following documents:

- EMB FS, revision July 2009.
- EMB catalogue Hydraulic Fittings, revision 2003.

3. TEST REPORTS:

3.1 Test report no. S018/09: tests performed at IMA, Dresden / GERMANY

- Pull out test
- Vacuum test

3.2 Test report no. 12282: test performed at EMB premises, Euskirchen / GERMANY

- Burst pressure test
- Vibration-/impulse test
- Tightness test

3.3 Test report no. R1/0000007177: fire-resistance test performed at WTD71, Kiel / GERMANY

4. APPLICATION / LIMITATION:

- 4.1 EMB FS system approved as a compression coupling for the use in piping systems onboard ships.
- 4.2 The manufacturer's forming process and assembly instructions are to be complied with.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 The EMB FS system is to be supplied by **Gates Tube Fittings GmbH** in compliance with the type described in this certificate.
- 5.2 This type of product is within the category HBV of BUREAU VERITAS Rule Note NR320 and as such does not require a BUREAU VERITAS product certificate.
- 5.3 **Gates Tube Fittings GmbH** has to make the necessary arrangements to have its works recognised by BUREAU VERITAS in compliance with the requirements of NR320 for HBV products.
- 5.4 For information, **Gates Tube Fittings GmbH** has declared to BUREAU VERITAS the following production sites:
Gates Tube Fittings GmbH, Euskirchen / GERMANY

6. MARKING OF PRODUCT:

Each EMB FS system is to be clearly marked to avoid any wrong utilization as per manufacturer's instructions:

- Manufacturer's name or logo
- Model

7. OTHERS:

- 7.1 It is **Gates Tube Fittings GmbH'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.
- 7.2 This certificate supersedes the Type Approval Certificate N° 14336/B0 BV issued on 11 Aug 2016 by the Society.

*** END OF CERTIFICATE ***