



Marine & Offshore

Certificate number: 57228/A0 BV

File number: ACM 135/507/3

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

EXMAR GmbH

Bad Nauheim - GERMANY

for the type of product

MECHANICAL JOINTS - COMPRESSION COUPLINGS - SCREW TYPE

24° COMPRESSION TYPE TUBE FITTINGS L & S Series

Requirements:

BUREAU VERITAS Rules for the Classification of Steel Ships

BUREAU VERITAS Rules for the Classification of Offshore Units

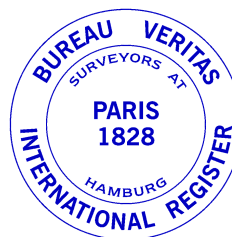
This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 24 Jun 2024

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 24 Jun 2019,

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 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Stainless Steel Tube Fittings according to the following Types:

- Stud couplings: GEV, GEV-WD, GEV-NPT, GEV-UNF/UN, GAV, WEV, WEV-NPT, TEV, LEV
- Tube to tube couplings: GV, WV, TV, KV, GSV, WSV
- Adjustable couplings: ESS, EGKO, EWV, EWKO, WEE, ETV, ETKO, ELV, ELKO, ESWV, GRKO
- Welding couplings: GAS, WAS, ESV
- Reduction couplings: RS, RS-WD

1.1 Design:

Stainless steel tube fittings based on screwed connections according to DIN 2353, ISO 8434 and DIN 3861 (24° cone).

1.2 Technical data:

Series	Tube OD [mm]	Nominal pressure [bar]
L	6 - 10	500
L	12 - 18	400
L	22 - 42	250
S	6 - 10	800
S	12 - 16	630
S	20 - 38	420

1.3 Material Specifications:

Fittings and pipes	1.4571 (316Ti) according to DIN 17440
Seal rings	FKM / PTFE / NBR

2. DOCUMENTS AND DRAWINGS

According to the Manufacturer's catalogue: **Stainless steel connection technology V17_10_Cutting ring fittings Reference XDS.VE000.000 (03/2017).**

3. TEST REPORTS

3.1 Tests carried out at IMA (Dresden/GERMANY), Test Report No. C70/04:

- Combined Pressure pulsation and Vibration tests
- Repeated assembly tests
- Static gas pressure test
- Burst pressure test
- Pull-out test
- Vacuum test
- Fire endurance test

3.2 Tests carried out at IMA (Dresden/GERMANY), Test Report No. C080/11:

- Combined Pressure pulsation and Vibration tests
- Pull-out test
- Fire endurance test
- Vacuum test

4. APPLICATION / LIMITATION

4.1 May be used for the following services on board:

Flammable fluids (flash point $\leq 60^{\circ}\text{C}$)	
Cargo oil lines	(4)
Crude oil washing lines	(4)
Vent lines	(3)

Inert gas	
Water seal effluent lines	
Scrubber effluent lines	
Main lines	(2)(4)
Distribution lines	(4)

Flammable fluids (flash point $> 60^{\circ}\text{C}$)	
Cargo oil lines	(4)
Fuel oil lines	(2)(3)
Lubricating oil lines	(2)(3)
Hydraulic oil	(2)(3)
Thermal oil	(2)(3)

Sea water	
Bilge lines	(1)
Water filled fire extinguishing systems, e.g. sprinkler systems	(3)
Non water filled fire extinguishing systems, e.g. foam, drencher systems	(3)
Fire main (not permanently filled)	(3)
Ballast systems	(1)
Cooling water system	(1)
Tank cleaning services	
Non-essential systems	

Fresh water	
Cooling water system	(1)
Condensate return	(1)
Non-essential systems	

Sanitary/Drains/Scuppers	
Deck drains (internal)	(6)
Sanitary drains	
Scuppers and discharge (overboard)	

Sounding/Vent	
Water tanks/Dry spaces	
Oil tanks (flash point $> 60^{\circ}\text{C}$)	(2)(3)

Miscellaneous	
Starting/Control air	(1)
Service air (non-essential)	
Brine	
CO2 system	(1)
Steam	

Footnotes:

(1): Inside machinery spaces of category A - only approved fire resistant types

(2): Not inside machinery spaces of category A or accommodation spaces. May be accepted in other machinery spaces provided the joints are located in easily visible and accessible positions.

(3): Approved fire resistant types except in cases where such mechanical joints are installed on exposed open decks, as defined in SOLAS II-2/Reg. 9.2.3.3.2.2(10) and not used for fuel oil lines.

(4): Only in pump rooms and open decks – only approved fire resistant types.

(6): Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

- 4.2 Application and installation of the tube fittings are to be in accordance with the manufacturer's specifications and instructions, and the Society's rules requirements.
- 4.3 The tube fittings are to be at any time accessible.
- 4.4 Tube fittings with tapered threads end connections are not to be used for liquid fuel or oil circuits in neither engine rooms nor any place containing an ignition source unless otherwise suitably screened at the Society's Surveyor satisfaction.
- 4.5 The nature of the used materials is to be suitable for the intended service.
- 4.6 For Bulkhead unions, the requirements given in BUREAU VERITAS Rules have to be complied with.
- 4.7 When soft seals are used for Bulkhead unions, it must be ensured that water, oil or fire cannot penetrate through the watertight bulkheads or decks.
- 4.8 Threaded type may not be used on watertight bulkheads.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The tube fittings are to be supplied by **EXMAR 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.
- 5.3 **EXMAR GmbH** has to make the necessary arrangements to have its works recognized by BUREAU VERITAS in compliance with the requirements of NR320 for HBV products:

SERTO AG
Langfeldstrasse 117
8500 Frauenfeld
SWITZERLAND

6. MARKING OF PRODUCT

Each tube fitting is to be clearly identified according to the manufacturer's instructions:

- Manufacturer's name or logo
- Type designation
- Size

7. OTHERS

This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the products at any time and that **EXMAR GmbH, Bad Nauheim / GERMANY** will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the products and of the conditions of this approval.

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