Marine & Offshore

Certificate number: 28304/B0 BV
File number: ACM 135/2710/01-02
Product code: 2170H

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

VSH FITTINGS BV

HILVERSUM - NETHERLANDS

for the type of product

PIPE COUPLING WITH O-RING SEAL

XPress System
XPress Galvanized Steel & XPress Stainless Steel

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: 14 Dec 2022

For Bureau Veritas Marine & Offshore,
At BV GRONINGEN, on 14 Dec 2017,
John Mondt





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 SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

XPress System: XPress Galvanized Steel & XPress Stainless Steel

1.1 Design (compression couplings, press type)

- XPress Galvanized Steel tubes are thin-walled precision tubes
- XPress Stainless Steel tubes are thin-walled precision tubes

1.2 Technical characteristics

XPress Galvanized Steel tube - File Number ACM 135/2710/01

Nominal size DN	10	12	15	20	25	32	40	50	65	80	100
Outside Pipe Diameter (mm)	12	15	18	22	28	35	42	54	76.1	88.9	108
Pipe thickness (mm)	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5	2.0	2.0	2.0
Max. Working Pressure (bar)	16	16	16	16	16	16	16	16	12.5	10	10

XPress Stainless Steel tube - File Number ACM 135/2710/02

DN	12	15	20	25	32	40	50	65	80	100
Outer Pipe Diameter (mm)	15	18	22	28	35	42	54	76.1	88.9	108
Pipe thickness (mm)	1.0	1.0	1.2	1.2	1.5	1.5	1.5	2.0	2.0	2.0
Max. Working Pressure (bar)	16	16	16	16	16	16	16	16	12.5	10

1.3 Temperature range (°C) depending on sealing material according to manufacturer's recommendation

- EPDM black -35/135 (150 peak)
- Viton Green -20/200 (230 peak)
- Viton Grey -20/175 (190 peak)

1.4 Material specification

Part	Material
Tubes	Galvanized and polypropylene coated unalloyed steel E195 (1.0034/RSt34-2) according to EN 10305 Externally and complete galvanized versions E195 (1.0034/RSt34-2) and E190 (1.0031) according to EN 10305 Stainless steel 1.4401(AISI 316) and 1.4521 (AISI 444) according to EN 10312
Fittings	Carbon steel, galvanized E195 (1.0034/RSt34-2) according to EN 10305 Stainless steel 1.4404 according to EN 10312
O-ring seal	EPDM black, Viton Green and Viton Grey

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

2. DOCUMENTS AND DRAWINGS

- Catalogue VSH Technical Manual XPress-EN-12-1.0

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 Tests carried out: Tightness test, vibration test and pressure pulsation test, burst pressure test, pull-out test, vacuum test and fire endurance test.

3.2 XPress Galvanized Steel: IMA Dresden test report C099/10.2 dated 12/01/2011, IHA test reports N° 001 (DN10), N° 004 (DN50) dated 20/10/2010 and N° 005 dated 27/10/2010 (DN100).

3.3 XPress Stainless Steel: IMA Dresden test report C099/10.1 dated 15/11/2010, IHA test reports N° 002 (DN12), N° 003 (DN50) dated 20/10/2010 (DN10) and N° 006 dated 27/10/2010 (DN100).

4. APPLICATION / LIMITATION

4.1 The XPress fittings with O-ring may be used for class III piping systems:

- **Flammable fluids (flash point ≤ 60°C)** - cargo oil (2), crude oil washing (2), vent lines
- **Inert gas** - water seal/scrubber effluent, main lines (1+2), distributions lines (2)
- **Flammable fluids (flash point > 60°C)** - cargo oil (2), fuel oil (1), lubricating oil (1), hydraulic oil (1), thermal oil lines (1)
- **Sea water** - bilge/ballast/cooling water, water/non-water filled fire extinguishing systems, fire main, tank cleaning/non-essential lines
- **Fresh water** - cooling water, condensate return, non-essential lines
- **Deck drains (internal)** (3), sanitary drains, scuppers and discharge (overboard)
- **Sounding and venting** - water tanks/dry spaces, oil tanks (flash point > 60°C) (1)
- **Miscellaneous** - service air (non-essential), brine, steam, starting/control air, C02 system

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

(2)- Only in pump rooms and open decks

(3)- Only above bulkhead deck of passenger ships and freeboard deck of cargo ships.

4.2 The sealing material is to be compatible with the fluid to be conveyed and the maximum working temperature in accordance with the manufacturer's instructions.

4.3 The galvanized pipes (XPress Galvanized Steel) are not to be used for flammable fluids.

4.4 In all cases, the associated pipes are to be suitably supported and anchored. The joints are to be at any time accessible, excepting inside tanks where permitted by the Bureau Veritas rules.

4.5 Couplings and O-rings are to be assembled with pipes in accordance with the assembly instructions given by the manufacturer.

4.6 The approval does not cover any pipes penetration through watertight bulkheads and fire divisions.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **VSH FITTINGS BV** 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 BV product certificate.

5.3 **VSH FITTINGS BV** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

For information, **VSH FITTINGS BV** has declared to Bureau Veritas the following production site:

VSH FITTINGS BV
PO BOX 498
1200 AL HILVERSUM
NETHERLANDS

6. MARKING OF PRODUCT

Each XPress fitting is to be clearly marked with at least:

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

7. OTHERS

It is **VSH FITTINGS BV**'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° 28304/A0 BV issued by the Society.

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