



Marine & Offshore

Certificate number: 28304/C0 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

Aalberts integrated piping systems B.V.
HILVERSUM - NETHERLANDS

for the type of product

MECHANICAL JOINTS - COMPRESSION COUPLINGS - PRESS TYPE

VSH XPress System

VSH XPress Galvanized Steel & VSH 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: 26 Apr 2028

For Bureau Veritas Marine & Offshore,

At BV GRONINGEN, on 26 Apr 2023,

Olaf RUITER

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.

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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

VSH XPress System: VSH XPress Galvanized Steel & VSH XPress Stainless Steel

1.1 Design (compression couplings, press type)

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

1.2 Technical characteristics

VSH 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

VSH 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 Maximum Temperature range (°C) depending on sealing material & fitting 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 VSH XPress N°500 7134-2021-2.2 EN
- EPDM material data sheet Rev.10 dated 08/2021
- VITON material data sheet Rev.5 dated 04/2021

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 (performed during 30 min in wet conditions).

3.2 VSH 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 VSH 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 VSH XPress fittings with O-ring may be used for class III piping systems (4):

- **Inert gas** - water seal/scrubber effluent
- **Flammable fluids (flash point > 60°C)** - fuel oil (1), lubricating oil (1), hydraulic oil (1), thermal oil lines (1)
- **Sea water** - ballast system, cooling water, water filled fire extinguishing systems, tank cleaning/non-essential systems
- **Fresh water** - cooling water, condensate return, non-essential systems, potable water, dry and wet sprinkler, hot and cold sanitary systems
- **Deck drains (internal)** (2), 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, CO2 system (inside protected space)

(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 above bulkhead deck of passenger ships and freeboard deck of cargo ships.*

Note - Fire endurance test performed during 30 min in wet conditions.

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 (VSH 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.

4.7 - The use of stainless steel is to be restricted as per the requirements of the Bureau Veritas Rules.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 - The products are to be supplied by **Aalberts integrated piping systems B.V.** 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 - BV product certificate is not required. .

5.4 - **Aalberts integrated piping systems B.V.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.5 - For information, **Aalberts integrated piping systems B.V.** has declared to Bureau Veritas the following production site:

Aalberts integrated piping systems B.V.:
PO BOX 498,
1200 AL HILVERSUM,
NETHERLANDS

6. MARKING OF PRODUCT

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

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

7. OTHERS

It is **Aalberts integrated piping systems B.V.**'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/B1 BV issued by the Society.

*** END OF CERTIFICATE ***