



MARINE DIVISION

Certificate number: 28304/A0 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

www.veristar.com

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 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: 01 Oct 2017

For BUREAU VERITAS,

At BV ROTTERDAM, on 01 Oct 2012,

Herman SPILKER



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. 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 Division 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 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

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

2. DOCUMENTS AND DRAWINGS

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

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:

- Inert gas: Water seal effluent lines, Scrubber effluent lines, Main lines 2+5, Distributions lines 5
- Flammable fluids (Flash point > 60°C): Cargo oil lines 5, Fuel oil lines 2+3, Lubricating oil lines 2+3, Hydraulic oil 2+3, Thermal oil 2+3
- Fresh Water : Cooling water system 1, Condensate return 1, Potable water, Dry and Wet sprinkler systems, Hot and cold water sanitary system, Non-essential system
- Sanitary/Drains/Scuppers: Deck drains (internal) 4, Sanitary drains, Pool drains
- Sounding/Vent: Water tanks/Dry spaces, Oil tanks 2+3 (flash point >60°C)
- Miscellaneous: Starting/Control air 1, Service air (non-essential), Brine, CO2 system 1, air conditioning systems (media: condensed water, ethylene glycol)

Footnotes:

1- Inside machinery spaces of category A - only approved fire resistant type

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 type

4- Above free board deck only

5- In pump rooms and open decks - only approved fire resistant type

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 manufactured, examined and tested by the manufacturer in accordance with the approved type described in this certificate and Requirements stated on the front page of this certificate.

5.2 Production sites are to be recognized by Bureau Veritas as per NR 320 for HBV products. To this end, the manufacturer has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 The manufacturer has declared to Bureau Veritas that the products detailed in this certificate are manufactured at the production site stated on the front page of this certificate.

5.4 Bureau Veritas certificate is not required for the product to be fitted on board units to be classed with Bureau Veritas.

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

This approval is given on the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper method of fittings and general maintenance of the products and of the conditions of this approval.

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