



Marine & Offshore

Certificate number: 07124/F0 BV

File number: ACM 135/1317/002

Product code: 2080H

*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*

**F.I.P. FORMATURA INIEZIONE POLIMERI S.p.a**

Casella (GE) - ITALY

*for the type of product*

**THERMOPLASTIC MATERIAL PIPES AND FITTINGS**

PVC-C Pipes, Fittings and Valves

### Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units
- FTP Code, Resolution MSC.61(67), IMO Resolution A.753(18), Resolution MSC.399(95)

*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: 02 Dec 2029**

**For Bureau Veritas Marine & Offshore,**

At BV NAPOLI, on 02 Dec 2024,

Alessandro Asbornio

***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](http://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

#### **PVC-C Pipes, Fittings and Valves**

##### 1.1 Technical Data

Type	DN / Thickness (mm)	Nominal Pressure at 20°C (water)	Temperature range (°C)
Pipes TemperFIP 100®	16 to 160 / 1,2 to 11,8 110 and 160 / 5,3 and 7,7	PN 16 PN 10	0 / +80
Fittings TemperFIP 100®	16 to 110; 160	PN 10/16	0 / +80
Valves (VKD, VKR, TKD, VXE, FK, VM, CM, RV, SXE, DK, HTA balancing, true union ball, check and One Piece ball valve)	16 to 315 HTA balancing, true union ball and check valves : 20 to 110 One Piece Ball Valve : 20 to 63	PN 6/8/10/16 HTA : 16 bar OPBV : 25 bar	0 / +80 HTA : 0/+70°C OPBV : 0/+70°C

- The maximum service pressure is not to exceed the value specified by the manufacturer. It depends of the working temperature.

- Jointing by solvent cement, flanging or threaded connections

##### 1.2 Raw material specification

<b>Fittings, valves, clamps saddles</b>	PVC-C
<b>Sealings depending on type</b>	EPDM, FKM

### 2. DOCUMENTS AND DRAWINGS

- Catalogue LEVARAC dated 01/2017: PVC-C pipes, fittings and manual valves.

a) PVC-C Pipes and Fittings TemperFIP 100®

b) PVC-C Valves (Types VKD, VKR, TKD, VXE, FK, VM, CM, RV, SXE, DK, HTA balancing, true union ball, check and One Piece ball valve)

- Manual for installation of flanged items N° DS1261 dated 15/03/2018

- Manual for installation of threaded items N° DS1262 dated 15/05/2005

- One Piece ball valve specification dated 11/2022

- HTA valve specification dated 11/2022

### 3. TEST REPORTS

- Pressure test reports dated 15/12/2017 and 28/08/2017 (short and long term hydrostatic test).

- Axial strength test report dated 05/09/2014.

- Load deformation test report dated 15/12/2017

- Vicat test reports N° 1/2018 dated 21/02/2018 & N° 02/2018 dated 22/02/2018.

- Impact test report dated 15/12/2017.

- Ageing test report dated 03/04/2018.

- Water absorption test report dated 02/04/2014.

- Bonding qualification test report dated 15/12/2017

- Flame spread test reports N° 2014CS011270/1, 2014CS011270/2 & 2014CS011270/3 dated 26/06/2014.

- Low flame spread test reports N° 4462T22/4463T22/4464T22 dated 15/03/2022 from AFITI

- Low flame spread test reports N° P164080/DE/4, DE/6, DE/7 dated 09/01/2017, 12/01/2017, 25/01/2017 from LNE

- Tests not carried out : fire endurance test, smoke generation test, toxicity test and electrical conductivity test.

Valve's test reports :

- Test reports for internal pressure short term dated 10/02/2023, 10/05/2023& 11/12/2020

- Test report from CSTB for HDT, Axial strength, impact resistance and internal pressure N° QB 08 593 S21/756 dated 22/03/2022

#### **4. APPLICATION / LIMITATION**

4.1 - These C-PVC piping systems are approved for use in locations and for non-essential applications where no fire endurance test is required according to Pt C, Ch 1, App 3 table 1 of Bureau Veritas Rules or appendix 4 of IMO Resolution A.753 (18) when the abbreviations "O or NA" are specified:

- Domestic water system (cold sea and fresh water), chilled and potable water systems, heating systems and non-essential systems.

4.2 - The valves are not to be used as ship side valves.

4.3 - Detailed drawings of piping system for each application on board ships are to be submitted for review of compliance with the Bureau Veritas Rules and the applicable regulations.

4.4 - The pipes and fittings assembly is to be carried out in accordance with the manufacturer's instructions and the person performing these tasks is to be qualified to the satisfaction of the Society Surveyor.

4.5 - The pipes, valves and fittings have not been type tested for fire endurance, smoke generation, toxicity and electrical conductivity test.

#### **5. PRODUCTION SURVEY REQUIREMENTS**

5.1 - The products are to be supplied by **F.I.P. FORMATURA INIEZIONE POLIMERI S.p.a** 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 - **F.I.P. FORMATURA INIEZIONE POLIMERI S.p.a** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR 320 for HBV products.

5.4 - Each pipe and fitting is to be tested by the manufacturer at a hydrostatic pressure not less than 1.5 times the nominal pressure. Other recognised national or international standard may be accepted for pipes and fittings not employing hand lay up techniques. Depending upon the intended application the Society may require the pressure testing of each pipe and/or fitting.

5.5 - For information, **F.I.P. FORMATURA INIEZIONE POLIMERI S.p.a** has declared to Bureau Veritas the following production sites:

**F.I.P. FORMATURA INIEZIONE POLIMERI S.p.a**  
**Pian di Parata, I-16015 Casella (GE)**  
**ITALY**

**NICOLL**  
**37 RUE PIERRE ET MARIE CURIE, BP 966**  
**49309 CHOLET CEDEX**  
**FRANCE**

#### **6. MARKING OF PRODUCT**

The product shall be marked with at least:

- Manufacturer's name or logo
- Product description
- Size and pressure rating
- Design standard
- Raw material
- Production date

#### **7. OTHERS**

It is **F.I.P. FORMATURA INIEZIONE POLIMERI S.p.a**'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° 07124/E0 BV issued by the Society.*

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