



CERTIFICATE NUMBER	23-2453713-PDA
EFFECTIVE DATE	13-Oct-2023
EXPIRY DATE	12-Oct-2028
ABS TECHNICAL OFFICE	Genoa Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

FIP - FORMATURA INIEZIONE POLIMERI S.P.A.

located at

**LOCALITA PIAN DI PARATA 16015 CASELLA (GE), , CASELLA
(GE), Italy, 16015**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Thermoplastic Pipe, Fittings and Joints
Model: PVC-U Pipes, Fittings and Valves (FIP trademark) and PVC-U Pipes and Fittings (Phonoblack trademark)
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 12/Oct/2028 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Cristina Generale,Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

FIP - FORMATURA INIEZIONE POLIMERI S.P.A.

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Web: www.fipnet.com

Tier: 3 - Type Approved, unit certification not required

Product: Thermoplastic Pipe, Fittings and Joints

Model: PVC-U Pipes, Fittings and Valves (FIP trademark) and PVC-U Pipes and Fittings (Phonoblack trademark)

Endorsements:

Intended Service:

Class III piping systems for non-essential services as salt and freshwater systems including bilge, ballast, deck wash, sanitary and cooling water systems, waste water system, scuppers.

Description:

PVC-U pipes, valves and fittings with seals in EPDM, FKM or PTFE

Rating:

From DN8 to DN400, Atmospheric pressure to PN16.

For details refer to the attachment.

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. Production tests to be carried out as per 4-6-3/9 and 4-6-3/19 of the ABS Marine Vessels Rules.
3. Usage limited to applications where "no fire endurance test" is required by 4-6-3/ Table 1 of the ABS Marine Vessels Rules.
4. The valves are not to be used as ship side valves.
5. Detailed drawings of piping system for each application on board are to be submitted for review.
6. Acceptability offlame spread tests performed in accordance with ASTM D635 may be subject to approval by the Administration other vessel's Registry. Classification B-s1, d0 according EN 13501-1.
7. Not to be used for any installation within tanks or other locations which may be subject to a head of liquid on the outside of the pipe.
8. Not to be used to convey fluids with a conductivity of less than 1000 pico-siemens per meter, nor for installation in hazardous areas (regardless of conveyed fluid).
9. Pipes and fittings assembly is to be carried out in accordance with Manufacturer's specification.
10. The scope of Type Approval is to comply with MSC.1/Circ.1221 dated 11 December 2006.
11. The piping system can be supported through "ASTORE", "GOEMA" and "ZIKM" PE/PP clips manufactured by FIP having Low Flame Spread characteristics assessed according to ASTM D635.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of asbestos in this product.
2. PVC-U Pipes and Fittings Phonoblack trademark are included.

Notes/Drawing/Documentation:

Fire test report No. 2014CS0 11270/2 at RINA Laboratory dated 26 Jun 2014

Crushing test report L T1 /2017 at FIP dated June 2017

Crushing test report L T2/2017 at FIP dated May 2017

Crushing test report L T3/2017 at FIP dated June 2017

Crushing test report L T10/2017 at FIP dated March 2017

Crushing test report L T11 /2017 at FIP dated September 2017

Crushing test report L T12/2017 at FIP dated June 2017

Crushing test report L T8/2017 at FIP dated July 2017

Crushing test report L T9/2017 at FIP dated May 2017

Impact test report at FIP dated 18 December 2017

Pressure test report at FIP dated 18 December 2017

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PVC-U DK Datasheet

PVC-U FK Datasheet

PVC-U VKD Datasheet

PVC-U VKR Datasheet

PVC-U VM Datasheet

PVC-U Properties

Vicat Test Report STI 4/2017 at FIP dated June 2017

Soundproof piping system Black PVC-U system - Catalogue 2020 and AFITI (low flame spread)/Fraunhofer (acoustic performance test reports

Crushing test report ST4/2017 at FIP dated July 2017

Crushing test report ST5/2017 at FIP dated June 2017

Crushing test report ST6/2017 at FIP dated July 2017

DNV audit report at FIP dated 10 Dec 2020

LAPI Test report dated 05 May 2016

LAPI Test report dated 05 May 2016

3855T19_esp+ing

3855T19-2_esp+ing

AFITI LICOF test report 4237T21 dated 23 Mar 2021

AFITI LICOF test report 4237T21-2 dated 23 Mar 2021

Catalogue PVC-Pressione-2020-ITA-ENG

Test Report No. 2013CS013028/1 from Rina Services dated 15 Nov 2013

Test Report No. 2013CS013028/3 from Rina Services dated 15 Nov 2013

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification, Part I - 2023 - 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2023 Marine Vessels Rules 4-6-3

Rules for Conditions of Classification, Part I - 2023 - Offshore Units and Structures, 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2023 Mobile Offshore Units Rules 4-2-2/7

National:

NA

International:

ISO 15493:2003 Amd 1:2016

EN 13501-1:2018 (UNI Ed. 2019) - Classification B-s1, d0

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ISO 1452:2009

EN 1329-1:2021

ASTM D635:2022

EN 13501-1:2018

Government:

NA

EUMED:

NA

OTHERS:

NA

FIP - FORMATURA INIEZIONE POLIMERI
Località Pian Di Parata
16015 Casella (GE)

Attachment to PDA Certificate No. 23-2453713-PDA
issued on 13 October 2023 expiring on 12 October 2023

Type: VXE PVC-U		
easyfit 2-way ball valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60
65	16	0÷60
80	16	0÷60
100	16	0÷60

Type: VEE PVC-U		
easyfit 2-way ball valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60
65	16	0÷60
80	16	0÷60
100	16	0÷60

Type: VKR / VKD PVC-U		
dual block 2-way ball valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60
65	16	0÷60
80	16	0÷60
100	16	0÷60

Type: TKD PVC-U		
dual block 3-way ball valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60

Type: FK PVC-U		
butterfly valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
40	16	0÷60
50	16	0÷60
65	10	0÷60
80	10	0÷60
100	10	0÷60
125	10	0÷60
150	10	0÷60
200	10	0÷60
250	10	0÷60
300	8	0÷60
350	7	0÷60
400	6	0÷60

Type: FE PVC-U		
butterfly valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
40	16	0÷60
50	16	0÷60
65	10	0÷60
80	10	0÷60
100	10	0÷60
125	10	0÷60
150	10	0÷60
200	10	0÷60

Type: SXE/SSE PVC-U		
easyfit check valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60
65	16	0÷60
80	16	0÷60
100	16	0÷60

Type: VM/DK PVC-U		
diaphragm valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	10	0÷60
15	10	0÷60
20	10	0÷60
25	10	0÷60
32	10	0÷60
40	10	0÷60
50	10	0÷60
65	10	0÷60
80	10	0÷60
100	10	0÷60

Type: CM PVC-U		
compact diaphragm valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
12	6	0÷60
15	6	0÷60

Type: VV/SV PVC-U		
angle seat valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	10	0÷60
40	10	0÷60
50	10	0÷60
65	10	0÷60
80	6	0÷60
100	6	0÷60

Type: VR PVC-U		
angle seat check valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60
65	10	0÷60
80	6	0÷60
100	6	0÷60

Type: RV PVC-U		
sediment strainer		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60
65	10	0÷60
80	6	0÷60
100	6	0÷60

Type: VA PVC-U		
air release valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60

Type: VZ PVC-U		
foot valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10	16	0÷60
15	16	0÷60
20	16	0÷60
25	16	0÷60
32	16	0÷60
40	16	0÷60
50	16	0÷60

Type: VM/RM PVC-U		
diaphragm valve/tap		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
8	10	0÷60
15	10	0÷60

Type: CR/FR PVC-U		
clapet check valve		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
40	5	0÷60
50	5	0÷60
65	5	0÷60
80	5	0÷60
100	5	0÷60
125	5	0÷60
150	5	0÷60
200	5	0÷60
250	5	0÷60
300	5	0÷60

Type: PVC-U fittings		
fittings (excluding unions)		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
8÷150	16	0÷60
200÷300	10	0÷60

Type: PVC-U fittings		
unions		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10÷50	16	0÷60
65÷100	10	0÷60

Type: PVC-U pipes		
pipes		
Nominal internal diameter	Max Working Pressure	Working Temperature
DN	bar	°C
10÷150	16	0÷60
200÷300	10	0÷60