



Marine & Offshore
Division

Certificate number: 03405/G0 BV

File number: ACM 135/0705/001

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

GIRPI

HARFLEUR - FRANCE

for the type of product

THERMOPLASTIC MATERIAL PIPES AND FITTINGS

C-PVC Pipes, Fittings and Accessories - System'O (HTA & HTA-F)

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units
- IMO Resolution A.753(18)

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: 13 Mar 2022

For BUREAU VERITAS,

At BV LE HAVRE, on 13 Mar 2017,

Frédéric ANDRIEU



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 & Offshore 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.

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BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

C-PVC Pipes, Fittings and Accessories - System'O (HTA & HTA-F)

1.1 Product description

- Complete range for hot and cold pressurized water plumbing, heating and conditioning systems
- HTA-F intended to cold water
- Colour: brown (HTA) and orange (HTA-F)
- Fittings: elbows, reducer, tees, flanges and other fittings/accessories according to manufacturer's catalogue
- Joints: glue named RERFIX

1.2 Rating

Nominal pipe size (mm)	16 up to 160
Nominal pressure (bar) at 20°C	PN 16 for HTA Ø 32 mm up to Ø 160 mm PN 16 for HTA-F Ø 16 mm up to Ø 160 mm PN 25 for HTA Ø 16 mm up to Ø 63 mm
Maximum working temperature (°C)	80

- Structural Wall thickness (mm)

External Diameter (mm)	HTA / PN 25 (Ø 16 to Ø 63)	HTA / PN 16 (Ø 32 to Ø 160)	HTA-F / PN 16 (Ø 16 to Ø 160)
16	1,8	-	1,8
20	2,3	-	2,3
25	2,8	-	2,8
32	3,6	2,4	2,4
40	4,5	3,0	3,0
50	5,6	3,7	3,7
63	7,1	4,7	4,7
75	-	5,6	5,6
90	-	6,7	6,7
110	-	8,1	8,1
125	-	9,2	9,2
160	-	11,8	11,8

- Service pressure/temperature rating according to the manufacturer's recommendation

Temperature (°C)	HTA / PN 25 (Ø 16 to Ø 63)	HTA / PN 16 (Ø 32 to Ø 160)	HTA-F / PN 16 (Ø 16 to Ø 160)
5	25	16	16
20	25	16	16
40	20	12	-
70	10	6	-
80	6	4	-
90	4	2	-

1.3 Raw material

C-PVC

2. DOCUMENTS AND DRAWINGS

- Manufacturer's catalogue including the installation guide dated 03/2016

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

- ATEC (Technical Advice) 14/13-1924 dated 13/01/2014 issued by CSTB, France.
- Flame spread test carried out by LNE on 3, 8 & 11 mm thickness according to 2010 FTP Code Annexe 1 - Part 5:
 - Test reports N° P164080 dated 9/01/2017, 12/01/2017 & 25/01/2017
- Fire endurance test, smoke generation and toxicity test not carried out.

4. APPLICATION / LIMITATION

- 4.1 Approved for sanitary/drains/scuppers discharges and non-essential applications where no fire endurance test is required according to Pt C, Ch 1, App 3 [2.3.1] of BUREAU VERITAS Rules or appendix 4 of IMO Resolution A.753 (18) when the abbreviations "O or NA" are specified.
- 4.2 Detailed drawings of pipes and fittings for each application on board ships are to be submitted for review of compliance with the BUREAU VERITAS Rules and the applicable regulations.
- 4.3 Penetration in watertight and fire class divisions is not covered by this approval. The drawing examination is subject to the Society's approval in each case.
- 4.4 The pipes and fittings assembly are 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 and fittings have not been type tested for fire endurance, smoke generation and toxicity.

5. PRODUCTION SURVEY REQUIREMENTS

- 5.1 The products are to be supplied by **GIRPI** in compliance with the type described in this certificate. 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.
- 5.2 **GIRPI** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
- 5.3 The manufacturer has declared to BUREAU VERITAS that the products detailed in this certificate are manufactured at the following production sites: Fittings are produced at GIRPI (Harfleur, France) and pipes are produced at FRIATEC AG (Mannheim, Germany).
- 5.4 Each pipe and fitting are 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.

6. MARKING OF PRODUCT

The product shall be marked with at least:

- Manufacturer's name or logo
- Product description
- Size and pressure rating
- Raw material

7. OTHERS

It is **GIRPI'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° 03405/F1 BV issued by the Society.

*** END OF CERTIFICATE ***