



Marine & Offshore
Division

Certificate number: 12735/C0 BV

File number: ACM 135/2033/001

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

GEORG FISCHER TPA Srl

Busalla (GE) - ITALY

for the type of product

THERMOPLASTIC MATERIAL PIPES AND FITTINGS

PVC-U and PVC-UH Fittings and Valves

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- BUREAU VERITAS Rules for the Classification of Offshore Units

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: 10 Feb 2020

For BUREAU VERITAS,
At BV GENOA, on 10 Feb 2015,
Carlo Bozzetti



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.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

PVC-U and PVC-UH Fittings and Valves

1.1 Design Specifications

Fittings	Diameter (mm)	Models
Tees	16 to 225	TII, TRI, TIF, TAF, TIP, TTP, TIS, TIL, TIR, TDI, TCI
Elbows	16 to 225	GOI, GPI, GYI, GYF, GOF, GOP, GYP, GGP, GOL, GYL, GOR, GTI
Sockets	16 to 225	MAI, MRI, MAF, MRF, MGF, MAP, MFP, MMP, MAL, MRL, MAT, MAR
Reductions	20x16 to 225x200	RCI, RLI, RCF, RIF, RCL, RCR
Saddles	32x16x20 to 315x63x75	DEI, DEF, DMF, DEG
Caps	16 to 225	CAI, CAF, CAL
Unions	16 to 110	BOI, BOF, BOP, BMP, BOL, BOR
Flanges	20 to 225	FLI, FFI, FCI, FFF, FFL
Nipples	3/8" to 4"	NIF, NRF
Adaptors	16x20x3/8" to 125x140x5"	AMP, ADP, AFP, AAP, AMR, ADR, AFR

Valves	Diameter (mm)	Models
Ball valve VS	16 to 110	VSK, VSA
Butterfly valve VF	75 to 225	VFK, VFA
Check valve VR	16 to 90	VRK, VRO, VRV, VRF

- Temperature Range : 0 to 60 °C

- Nominal Pressure : 0.6 to 1.6 MPa according to manufacturer's recommendations

- Joints : Piping assembly by solvent cement, flanging or threaded connections

- The Maximum Allowable Working Pressure in relation to temperature must be in conformity with manufacturer's specifications

1.2 Minimum wall thickness

According to the manufacturer's technical specification

1.3 Raw material

PVC-U and PVC-UH

2. DOCUMENTS AND DRAWINGS

- Manufacturer's catalogues

- Inspection certificates

- Certificates on material

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

- The tests for surface flammability criteria according to IMO A.653 (16) were carried out on 30/04/2003 and found in order.

A test report N° 278.4IMO100/03 was issued by the laboratory, LAPI - Italy.

4. APPLICATION / LIMITATION

4.1 PVC-U and PVC-UH fittings and valves are approved for use in locations and for non-essential applications where no fire endurance test is required according to BUREAU VERITAS Rules in Pt C, Ch 1, App 3 [2.3.1] or appendix 4 of IMO Resolution A.753 (18) when the abbreviations "O or NA" are specified. For instance domestic water system (cold sea and fresh water), chilled and potable water systems, sanitary systems, heating systems and non-essential systems. Further these products are not to be installed in hazardous areas.

4.2 The approval is valid for ships having to comply with SOLAS 74 Convention, as amended, and for units having to comply with IMO Resolution A.649 (The "MODU Code").

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 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.

4.5 The product is approved as low flame spread surface material.

4.6 The valves and fittings 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.

4.7 The valves are not to be used as ship side valves according to BUREAU VERITAS Rules in Pt C, Ch1, App 3, [3.7.1].

4.8 The valves and fittings have not been type tested for fire endurance, smoke generation, toxicity and external pressure.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **GEORG FISCHER TPA Srl** in compliance with the type described in this certificate and in compliance with the requirements stated on the front page of this certificate. This type of product is within the category HBV of BUREAU VERITAS Rule Note NR 320.

5.2 **GEORG FISCHER TPA Srl** has to make the necessary arrangements to have its works recognized by BUREAU VERITAS in compliance with the requirements of NR 320 for HBV products.

5.3 Each valve 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 valves and fittings not employing hand lay up techniques. Depending upon the intended application the Society may require the pressure testing of each valve and/or fitting.

5.4 No BUREAU VERITAS certificate is required.

Place of Production

GEORG FISCHER TPA Srl
Via Seminella 50/M
16012 Busalla (GE)
ITALY

6. MARKING OF PRODUCT

Valves and fittings shall be marked with at least:

- Manufacturer's name or logo
- Type and size of the product
- Pressure rating
- Design standard
- Raw material

The permanent label for the product shall remain legible under normal handling and installation practices.

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 methods of fitting and general maintenance of the products and of the conditions of this approval.

This certificate supersedes the Type Approval Certificate No. 12735/BO BV issued on 02/07/2009 by the Society.

*** END OF CERTIFICATE ***