



MARINE DIVISION

Certificate number: 12735/B0 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
CASTEL MAGGIORE -BO - 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
- 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: 02 Jul 2014

For BUREAU VERITAS,

At BV GENOA, on 02 Jul 2009,

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 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 Rating

Fittings	Diameter (mm)	Model
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)	Model
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

Maximum temperature range : 0 °C 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 specification : PVC-U and PVC-UH

2. DOCUMENTS AND DRAWINGS :

- Manufacturer's catalogues
- Inspection certificates
- Certificates on material

3. TEST REPORTS :

3.1 The tests for surface flammability criteria according to IMO A.653 (16) as required in the FTP Code IMO Resolution A.753 (18) were carried out on 30/04/2002 and found in order. A test report N° 278.4IMO100/03 was issued by the laboratory, LAPI - Italy.

3.2 Behaviour in case of fire (smoke generation and toxicity) is to be deemed satisfactory by the flag authorities of the vessel on board which the piping system is fitted.

4. APPLICATION / LIMITATION :

4.1 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").

4.2 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 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. For inst. 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 product is approved as low flame spread surface material.

4.3 The integrity of watertight bulkheads and fire division is not to be impaired.

4.4 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.

4.5 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.

4.6 Behaviour in case of fire (smoke generation and toxicity) is to be deemed satisfactory by the flag authorities of the vessel on board which the piping system is fitted.

4.7 The valves are not to be used as ship side valves.



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 Bureau Veritas Rules and Regulations 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 type of product described in this certificate may be manufactured at the following production sites :

*GEORG FISCHER TPA Srl
Via Fontanelle 22,
16012 BUSALLA-GE ,ITALY*

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.

5.5 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 :

The fittings and valves are to be permanently marked as follows:

- Manufacturer name or Brand name
- Type and designation
- Pressure rating
- Raw material

The marking shall remain legible under normal handling and installation practices.

7. OTHERS :

7.1 This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the products at any time and that the manufacturer will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the products and of the conditions of this approval.

7.2 This certificate supersedes the Type Approval Certificate N° 12735/A0 BV issued on 04/09/2003 by the Society.

*** END OF CERTIFICATE ***

